PG&E **Pacific Gas and Electric Company**

NUMBER RCP G-5
REVISION 2
DATE 1/25/83
PAGE 1 OF 8

DEPARTMENT OF NUCLEAR PLANT OPERATIONS

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

TITLE: RADIATION CONTROL PROCEDURE
CONTROL OF ACCESS FOR RADIATION PROTECTION PURPOSES

APPROVED: R C Thornberry 2/7/83
PLANT MANAGER DATE

SCOPE

This procedure discusses physical barriers and administrative controls which are employed to control access to various plant areas for the purpose of radiation protection.

DISCUSSION

In order to limit the exposure of individuals to radiation and radioactive materials, it is necessary to maintain control over personnel access into areas of the plant where such exposure is possible. This control consists of a system of physical barriers and warning signs and signals to prevent unauthorized entry into the Radiologically Controlled Area of the plant, and administrative procedures which govern authorized entries.

PROCEDURE

1. Restricted Area and Exclusion Area [1]

   a. The Restricted and Exclusion Area perimeter is fenced with barbed wire and is posted to legally designate the area as private property.

   b. Access to the Restricted and Exclusion Area along the main access road is normally controlled by limiting access to the Owner Controlled Area at Avila gate (see Administrative Procedure A-6).

2. Radiologically Controlled Area (referred to as the "Controlled Area" below).

   a. The normal permanent Controlled Area of the plant includes the containment buildings, the fuel handling buildings, the outside tankage areas, the solid radwaste storage area, most of the auxiliary building, and the calibration facility in the

[1] The various areas referred to in this procedure are defined in Radiation Control Standard No. 4.

Unit No. 2 turbine building. The perimeter of the Controlled Area shall consist of barriers such as fences, doors, gates, etc., which prevent unauthorized entry.

b. The perimeter of the Controlled Area shall be posted with a sign bearing the words "CAUTION-RADIATION AREA - RADIOACTIVE MATERIALS- at all access points and along the fence at intervals not to exceed 50 feet.

c. There is only one path[1] of personnel access normally used to enter the Controlled Area. This is through access control. Material and equipment may enter or leave the Controlled Area at points other than access control. However, anything leaving the Controlled Area must meet radiation and contamination requirements for material in unrestricted areas as covered in Radiation Control Procedure G-6.

d. All work in Controlled Areas will be in accordance with an RWP or SWP. Administrative requirements for RWPs and SWPs, and for entrance and egress from Controlled Areas are discussed in Radiation Control Procedure G-1.

e. One or more signs may be required to properly identify the radiological conditions within the Controlled Area.

f. Access to "clean" areas of the auxiliary building, fuel handling building and yard area will be permitted in street clothes.

3. Radiation Areas

Radiation Areas within the Controlled Area shall be identified and posted using approved signs containing the radiation symbol and wording described in Radiation Control Standard No. 4. The boundary of the Radiation Area shall be set at 0.8 mrem/hr isodose.

NOTE: If a Radiation Area must be established in an unrestricted area, the boundary shall be established at the 0.6 mrem/hr isodose. A Radiation Area is established for dose rate control.

1. Personnel may use the Controlled Area entry point located at the east side of the control room for emergency or other urgent reasons only. When leaving the Controlled Area, however, the normal access control point should be used, regardless of the point of entry.

4. Surface Contamination Areas

Areas which contain loose surface contamination equal to or above the limits listed in Radiation Control Standard No. 4 shall be identified and posted using the specified signs and wording. The contamination levels at the boundary shall be less than the limits of Radiation Control Standard No. 4. If dose rates are also present in this area, additional wording shall be posted to identify the hazard. In this case, the boundaries may be adjusted to meet the more restrictive requirement. Primary contamination control points shall be established at the boundary of the surface contamination area.

NOTE: The surface contamination levels below 100,000 dpm/100cm^2 are not high enough to require respiratory protection.

5. Radioactive Materials Area

Areas which contain radioactive materials in quantities defined in Radiation Control Standard No. 4 shall be identified and posted accordingly. The dose rate within this area is expected to be less than 0.8 mrem/hr. If it is expected to be greater, additional posting is required to identify the hazard. The surface contamination levels are expected to be less than the limits of Radiation Control Standard No. 4. If they are found to be greater, additional posting shall also be done.

6. Airborne Radioactivity Area

Areas which meet the criteria listed in Radiation Control Standard No. 4 for Airborne Radioactivity Access shall be identified and posted accordingly. If dose rates in excess of 0.8 mrem/hr exist in the area, the appropriate wording to identify the hazard shall also be posted.

7. High Radiation Areas

a. High Radiation Areas within the Controlled Area must be identified and posted, using approved signs listed in Radiation Control Standard No. 4. Any of the previously discussed signs may also be posted along this one to fully identify the hazards.

b. Each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a High Radiation Area. Entrance into a High Radiation Area shall be controlled by requiring issuance of a Routine Work Permit (RWP) or Special Work Permit (SWP)

c. Each high radiation area with dose rates between 100 mrem/hr and 1000 mrem/hr should be maintained locked except during periods when access to the area is required, with positive control over each individual entry. This control must be established in such a way that personnel are not prevented from leaving a high radiation area.

d. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

1) A radiation monitoring device which continuously indicates the radiation dose rate in the area.

2) A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.

3) A health physics qualified individual, e.g., a member of the Chemistry and Radiation Preotection Department who is qualified in radiation protection procedures, with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the RWP or SWP.

e. Areas accessible to personnel with dose rates in excess of 1000 mrem/hr (High-high radiation areas) shall be provided with locked doors to prevent unauthorized entry and the keys shall be maintained under the administrative control of the Shift Foreman and/or the Radiation Protection Supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP or SWP which shall specify dose rates in the immediate work area and maximum allowable stay times for personnel in that area. In addition, these doors shall be posted within a sign stating

"CAUTION-CONTROLLED ACCESS AREA - CONTACT RADIATION PROTECTION PRIOR TO ENTRY - SPECIAL PRECAUTIONS REQUIRED." In lieu of the stay time specification of the RWP or SWP, direct or remote continuous surveillance, such as closed circuit TV cameras, may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities in the area. Radiation Protection supervision shall specify the name/s of the personnel who are providing this coverage.

f. The controls specified in 7.c. and 7.e. shall be established in such a way that no person will be prevented from leaving the High Radiation Area.

g. For individual areas where the radiation levels are in excess of 1000 mrem/hr (High-high radiation areas) that are located within large areas, such as containment, where no enclosure exists for purposes of locking, and no enclosure can be reasonably constructed around the individual areas, then those areas shall be roped off, conspicuously posted and a flashing amber light shall be activated as a warning device.

h. Individuals shall be logged in and out of High Radiation Areas by the Control Operator. When a person must make a series of entries to High Radiation Areas as part of his normal inspection round, he need only be logged in the first, and out of the last High Radiation Area he enters, with mention on the log sheet of each High Radiation Area contained in the inspection round. Completed High Radiation Area Entry log sheets are to be forwarded to the Radiation Protection Supervisor.

8. Lock and Key Controls

There are several types of locks on doors and gates associated with the Controlled Area. The type of locks, their locations, availability and use of keys are covered in Administrative Procedure D-3.

9. Temporary Controlled Areas

a. Radiation Areas

Temporary Radiation Areas may be established either within, or outside the normal Controlled Area. The temporary Radiation

Area should be roped off using purple and yellow stranded rope and posted with one or more "CAUTION--RADIATION AREA" signs. Access to such an area must be authorized by either an RWP or SWP.

b. Radioactive Materials Areas

Temporary Radioactive Materials Areas may be established within or outside the normal Controlled Area. The boundaries shall be identified by purple and yellow stranded rope and posted with one or more "CAUTION-RADIOACTIVE MATERIALS AREA" signs. If there is also a potential for surface contamination, then "CAUTION-SURFACE CONTAMINATION AREA" signs shall also be posted. Steps-off pads, survey instruments and protective clothing may be established. Access in either case is governed by RWP or SWP authorization.

c. Temporary High Radiation Areas

1) Temporary High Radiation Areas shall be roped off using purple and yellow stranded rope and posted with one or more "CAUTION - HIGH RADIATION AREA" signs.

2) Temporary High Radiation Areas may be exempted from the control requirements of 7.0. above for a period of 30 days provided they are properly posted and direct surveillance is used to prevent unauthorized entry. However, after 30 days, temporary High Radiation Areas must either be dismantled or permanently barricaded.

3) When establishing a temporary High Radiation Area, noted on the "CAUTION--HIGH RADIATION AREA" sign the date on which dismantling or permanent barricading must be done.

4) All individuals shall contact the Control Operator prior to entering a temporary High Radiation Area and upon exit. The Control Operator shall log the entry and exit.

5) A room or other area is not required to be posted with a caution sign, and control is not required for each entrance or access point to a room or other area which is a High Radiation Area solely because of the presence of radioactive materials prepared for transport and packaged and labeled in accordance with regulations of the Department of Transportation.

d. Surface Contamination Areas

Areas having loose, or smearable contamination on floors, equipment, etc., require special control to prevent the spread of contamination. As a general rule, each person is responsible for promptly cleaning up any contamination for which he is responsible. Assistance may be obtained from Radiation Protection personnel.

1) Any area outside of an established Controlled Area having contamination levels in excess of unconditional release limits (see Radiation Control Procedure G-6) must be cordoned off using yellow and purple stranded rope or other suitable barriers, and posted as a contamination area. Access points to the area must be equipped with a step-off pad to permit protective clothing changes while entering and leaving the area. Also, survey instruments shall be set up for contamination control checks.

2) Within a Controlled Area, barricades with secondary step-off pads for contamination control purposes should be set up around areas having smearable contamination levels:

a) Greater than or equal to 1000 dpm/dm^2 beta-gamma and/or 20 dpm/dm^2 alpha.

b) Between two contamination areas which differ in contamination levels by a factor of 100 or more, when the distances to be traversed across the areas warrant the use of multiple step-off pads.

10. Containment Access

a. All containment entries must be made under the authorization of an RWP or SWP.

b. When the reactor is not in the cold or refueling shutdown condition (as defined in the Technical Specifications), the following general rules apply.

1) The name of each person shall be recorded on the "Containment Entry Log" kept in the control room prior to entering containment.

2) Check the airborne radioactivity status board, and sign the "Airborne Entry Log" if conditions warrant (refer to RCP G-3).

3) The individual or a member of the group of persons making the entry shall notify the Control Operator immediately prior to entering the containment access hatch. The Shift Clerk will log the time and date.

4) Upon leaving the containment building, the individuals (or a member of the group) shall immediately notify the Control Operator. The Shift Clerk shall log the time and date.

c. When the reactor is in the cold or refueling shutdown condition (as defined in the Technical Specifications), and containment integrity is in effect, the following rules apply:

1) Check the airborne radioactivity status board, and sign the "Airborne Entry Log" if conditions warrant.

2) Sign the containment entry log sheet at the containment access hatch upon entering, noting the time of entry, and again noting the time when exiting.

d. When the reactor is in the cold or refueling shutdown condition, and containment integrity is not in effect, the normal procedures for a Controlled Area entry apply and logging into the containment is not required.

REFERENCES

1. Title 10, Code of Federal Regulations, Parts 20, 50 Appendix I and 100.

2. Radiation Control Standard No. 4, "Control of Access".

ATTACHMENTS

1. Form 18-9320, "High Radiation Area Entry Log"

2. Form 18-9313, "Controlled Area and Airborne Area Entry Log", Rev. 3/78.

3. Form 18-9321, "Containment Entry Log"

Form 16 13 3/78 (100)

COAST VAL S DIVISION
DIABLO CAN N POWER PLANT
CONTROLLED AREA AND AIRBORNE AREA ENTRY LOG

Date: ______________

CONTROLLED AREA ENTRIES					AIRBORNE AREA ENTRIES				RAD PROTECTION USE ONLY			
NAME	TIME IN	TIME OUT	DESTINATION	EXP mrem	LOCATION	TIME IN	TIME OUT	RESPIRATOR USED	CONC μCi/ml	FRACT MPC	P.F.	MPC·HRS

18-9320 10/75(100)

COAST VALLEYS DIVISION
DIABLO CANYON POWER PLANT

HIGH RADIATION AREA ENTRY LOG

DATE	TIME		LOCATION	NAME	DATE	TIME		LOCATION	NAME
	IN	OUT				IN	OUT		

RETURN TO RADIATION PROTECTION WHEN COMPLETE

18-9321 7/81 (25)

DEPARTMENT OF NUCLEAR PLANT OPERATIONS
DIABLO CANYON POWER PLANT

CONTAINMENT ENTRY LOG *

DATE	UNIT NO.	TIME		NAME	MULTIPLE ENTRY		ALTS CUT IN AND ENERGIZED			ALTS ALARM RECEIVED		CO'S SIGNATURE
		IN	OUT		YES	NO	YES	NO	BY (NAME)	YES	NO	

RETURN TO RADIATION PROTECTION WHEN COMPLETE

*SEE STP M-8F

PG&E
Nuclear Plant Operations
(4/82)

DIABLO CANYON POWER PLANT
PROCEDURE ON-THE-SPOT CHANGE

Procedure No. RCP G-4 Rev. 1 Unit No. 1 ☐ 2 ☐ 1 & 2 ☒

Title Personnel Contamination Control

Type of Change: ☒ PERMANENT (green) ☐ TEMPORARY (yellow); Expiration Date _____

Requesting Department Chemistry & Radiation Protection Originator D. R. Clifton

ORIGINATOR

Proposed Change: (Does this alter the intent of original procedure? ☐ Yes ☒ No)
(Does it constitute an unreviewed safety/environmental question? ☐ YES ☒ NO)

Page 1: Reference to (see RCP G-5) in the first paragraph under "Personal Effects" should be changed to (see RCP G-6).

Reason for Change:

RCP G-5 is not the proper reference. RCP G-6 deals with "Unconditional Release" Limits and is the proper reference

Authorizations: _____ (Plant Management Staff) _____ (Plant Management Staff w/SRO License) 2/14/83 Date*

Immediate distribution to the Control Room and affected work areas required? ☐ YES ☒ NO
Distributed To: ☐ Control Room ☐ Others _____

Initial Distribution By:

DOCUMENT CONTROL

Date Received by Document Control 2/24/83

PSRC Review and Plant Manager's approval no later than 2/28/83 Date above *plus 14 days

PSRC POST CHANGE REVIEW

Review Date _____

PSRC recommends approval ☐ Yes ☐ No

Meeting Number ☐☐ - ☐☐☐

_____ Plant Manager's Approval ☐ N/A

REQUESTING DEPARTMENT

Follow-up To Rejected On-the-Spot Change ☐ Additional Information ☐

Action Taken/Remarks:

D - 18

DISTRIBUTION: ☐ Same as Original Procedure Distribution ☐ Others _____ Please see additional sheets ☐

Rev. 1/83

OPEN ITEM REPORT

File Brad Info for Area 5 — Sheet ___ of ___

1 IDENTIFICATION: NUMBER 8 3 — 0 2 4 (Year — Sequence) AUDIT NO. 8 3 0 4 3 A ☐ N/A

INSTRUCTIONS FOR COMPLETING ON BACK OF THIS FORM

2 Reference Requirement(s): ANSI N45.2.6 - 1978 | Project or Plant(s): Diablo Canyon Power Plant

3 Item or Activity: Inspector Qualifications | Responsible Department: Quality Assurance (GC Audit Point)

PROBLEM

4 Description of Problem:
This OIR provides follow-up to an audit point that could not be answered before the conculsion of the audit. Cataract Engineering and Construction is obtaining records from their home office to show the objective evidence used as the basis for qualifying five of their ANSI Qualified Inspectors. The five inspectors are a sample chosen during the audit

Suggested Resolution (optional):

5 Initiated by: Michael S Dobrinsky | Supervisory Approval: [signature] for RTT | Date: 2/15/18

TO BE COMPLETED BY RESPONSIBLE DEPARTMENT WITHIN 15 WORKING DAYS OF ITEM 5 DATE

6a ☐ NCR/Problem Report Number ____

6b ☐ Problem has been resolved as described in item 7.

6c ☐ Issued to Track Supplier Audit Finding Reports.

6d ☒ For Quality Assurance Department use only:

Assigned to | By | Date

RESOLUTION

7 Action Taken:
INFORMATION COPY

8 Approved by | Date | Scheduled Corrective Action Date: 3-1-18

RETURN TO QUALITY ASSURANCE DEPARTMENT

VERIFICATION

9 Assigned to: MSD ☐ N/A | Supervisory Approval: [signature] for RTT | Date: 2/15/18

10 Results of Investigation/Comments:
Cataract supplied 'Investigation Reports' (conducted by Tri-State Investigation) for the five individuals; these investigations adequately confirm the basis of qualification and validity of the information. See Audit No. 83137A for more details.

The Resolution and Corrective Action are Verified as being complete: Michael S Dobrinsky | Date: 3/23/18

11 Supervisory Approval: R. T. Tarabay | Date: 3/23/18

DISTRIBUTION (Other Departments to receive information copy when originated — check below)

12
- ☒ V. P., Nuclear Power Generation
- ☐ Manager, Nuclear Plant Operations
- ☐ Project Manager
- ☒ Manager, Quality Assurance
- ☐ Chief, Engineering Research
- ☐ Manager, Materials
- ☐ Plant Mgr. and/or Plant Supt.
- ☐ Authorized Inspector (for ASME items)
- ☐ Engineering
- [redacted] Construction
- ☒ Contractor HPF
- ☐ Other

D-19

Cataract Engineering & Construction

March 17, 1983

H. P. Foley Company
Diablo Canyon Nuclear Power Plant
P. O. Box 327
Avila Beach, CA 93424

Attention: Jim Thompson
QA Manager

Subject: Tri-State Reports
Enclosed With Our Letter of 03/11/83

Dear Jim:

Please consider this as confirming our telephone conversation of 03/15/83.

All information, except "Dates Given", on the Tri-State Investigation report is actual/confirmed information supplied by the employer or educational institution.

Furthermore, unless the information is denoted with "verbal", we maintain written back-up documentation for all information on the report.

Should you have any questions, please feel free to call me.

Sincerely,

CATARACT ENGINEERING & CONSTRUCTION

Roger G. Cates
Project Manager

RGC:aw

cc: A. E. Moses, H. P. Foley Company/Avila Beach, CA
R. J. Messere, Cataract/Newtown, PA

Yardley Road • Newtown, Pennsylvania 18940 • (215) 968-8804

QA-3

CHICAGO BRIDGE & IRON
QUALITY ASSURANCE DEPARTMENT

INSPECTION REPORT

PAGE ____ OF ____

RECEIVING REPORT NO 3469

JOB NO. 7177

APPLICABLE TO: (CHECK) RECEIVING ☑ SUBCONTRACTOR ☐

HOLD
☐ MILL TEST REPORTS ☐ X-RAYS
☐ OTHERS

VENDOR Johnston Stainless P.O. NO. 7177-12151 DATE 4-06-83

MANUFACTURER ____ INSPECTED BY DB. DATE 4-6-83

ITEM	PART NAME	QUANTITY	MATERIAL
A	1/16 S/S BARE WIRE ER309	100#	
B	3/32 S/S " " "	100#	
C	1/8 S/S " " "	100#	
D	1/8 S/S BARE WIRE ER308	100#	

ITEM OR DWG. NO.	QUANTITY	HEAT NO. OR SYMBOL	IDENTIFICATION VERIFIED	DOCUMENTATION VERIFIED	RADIOGRAPHS APPROVED	REMARKS
A		3791-57	FWB 4-6-83	DB 4-06-83		
B		3791-57	FWB 4-6-83	DB 4-06-83		
C		3791-57	FWB 4-6-83	DB 4-06-83		
D		3931-57	FWB 4-6-83	DB 4-06-80		

FOR INFORMATION ONLY

CLASS 1

D-20

74-70-38 REV 9/15/79

FIELD REQUISITION - PURCHASE ORDER - RECEIVING REPORT

JOB NO.	DATE	SHEET NO.	SHIPPING ADDRESS:	REQ. P.O. R.R. NO. F-
7177	3/10/83	1 of 4	PULLMAN POWER PRODUCTS c/o Pacific Gas & Electric Company Diablo Canyon Power Plant 7 Miles North of Avila Beach, CA 93424	7177-12151

DISCOUNT TERMS	SHIPPING TERMS	JOB COST CODE:	SUBCONTRACT NO.
N/30	FOB: SANTA FE SPRINGS	121	~~3470~~ 3469

VIA:

1-213-946-1764 Freda

VENDOR:
JOHNSTON STAINLESS
10140 Romandel Ave. P.O. Box 3284
Santa Fe Springs, CA 90670

MAIL 4 COPIES OF INVOICES TO:
P.O. Box 367
Avila Beach, CA 93424

FOR INFORMATION ONLY

ITEM (LETTER)	QTY. REQ/D.	DESCRIPTION	UNIT	PRICE	TOTAL		DATE REC'D.	QTY. REC'D.
A	100#	1/16" S/S BARE WIRE ER-309	lb. 4	79	479	00		
B	100#	3/32" S/S BARE WIRE ER-309	lb. 4	37	437	00		
C	100#	1/8" S/S BARE WIRE ER-309	lb. 4	13	413	00		
D	100#	1/8" S/S BARE WIRE ER-308	lb. 3	41	341	00		
		TEST CHARGES PER HEAT ~~LOT~~ [initials]	225	00	450	00		
		SEE SPECIAL REQUIREMENTS ATTACHED:						
		TOTAL PRICE			2120	00		

NEEDED FOR:
UNIT II STOCK

DATE NEEDED:	DATE ORDERED:	DATE PROMISED:
ASAP	3-22-83	2-3 weeks

DWG(S) ATTACHED:

PREPARED BY:	APPROVED BY:	PURCHASED BY:
R. King	[signature]	[signature]

IMPORTANT: THIS ORDER IS SUBJECT TO ALL OF THE TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE HEREOF.

OUR ORDER NUMBER MUST APPEAR ON ALL INVOICES, BILLS OF LADING, EXPRESS RECEIPTS AND CORRESPONDENCE. MARK ALL SHIPPING TAGS AND PACKAGES WITH ABOVE ORDER NUMBER

REMARKS

REIMBURSABLE

CLASS 1

RECEIVING DEPARTMENT

CARRIER:

COMPLETE ☐ PARTIAL ☐

PREPAID: $

COLLECT: $

RECEIVED BY:

Pullman Power Products
Division of Pullman Incorporated

74-70-38 REV 4/15/76

FIELD REQUISITION - PURCHASE ORDER - RECEIVING REPORT

JOB NO.	DATE	SHEET NO.	SHIPPING ADDRESS:	REQ.- P.O.- NOTE - 7177-12151 R.R.-
7177	3/10/83	2 of 4	PULIMAN POWER PRODUCTS	
DISCOUNT TERMS	SHIPPING TERMS			JOB COST CODE: 121
				SUBCONTRACT NO. 3469
VIA			VENDOR: JOHNSTON STAINLESS	MAIL 4 COPIES OF INVOICES TO:

FOR INFORMATION ONLY

ITEM (LETTER)	QTY. REQ/D.	SPECIAL REQUIREMENTS: DESCRIPTION	UNIT PRICE	TOTAL	DATE REC'D.	QTY. REC'D.
		W1. SUPPLIER SHALL FURNISH THREE COPIES OF A MILL TEST REPORT ✓ SIGNED BY MANUFACTURER'S REPRESENTATIVE. ✓				
		W2. MILL TEST REPORTS SHALL BE TRACEABLE TO OUR PURCHASE ORDER ✓ AND ITEM NUMBER. ✓				
		W3. ALL REQUIRED DOCUMENTATION SHALL BE SENT ON THE DAY OF EACH SHIPMENT TO PULIMAN POWER PRODUCTS, P.O. BOX 367, AVILA BEACH, CA 93424, ATTN: Q.A. DEPT. ✓				
		W4. ANY NONCONFORMANCE TO THE REQUIREMENTS OF THIS PURCHASE ORDER WILL BE CONSIDERED JUST CAUSE FOR RETURN OF MATERIALS WITHOUT COST TO BUYER. ✓				
		W5. WELDING MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH 1971, SECTION III, PARAGRAPH NB 2130 AND NB 2400. ACTUAL MILL TEST REPORTS SHALL INDICATE ALL THE REQUIREMENTS OF 1971, SECTION III, PARAGRAPH NB 2130 AND NB 2400 AND ASME SECTION II, PART C, 1971 SFA 5.9				
		TOTAL PRICE				

NEEDED FOR:			REMARKS	RECEIVING DEPARTMENT
DATE NEEDED:	DATE ORDERED: 3-22-83	DATE PROMISED:		CARRIER:
DWG(S) ATTACHED:				COMPLETE ☐ PARTIAL ☐
PREPARED BY:	APPROVED BY:	PURCHASED BY:	CLASS 1	PREPAID: $ COLLECT: $
				RECEIVED BY:

IMPORTANT: THIS ORDER IS SUBJECT TO ALL OF THE TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE HEREOF.

OUR ORDER NUMBER MUST APPEAR ON ALL INVOICES, BILLS OF LADING, EXPRESS RECEIPTS AND CORRESPONDENCE. MARK ALL SHIPPING TAGS AND PACKAGES WITH ABOVE ORDER NUMBER

Pullman Power Products
Division of Pullman Incorporated

74-70-30 REV 6/15/79

FIELD REQUISITION - PURCHASE ORDER - RECEIVING REPORT

JOB NO.	DATE	SHEET NO.	SHIPPING ADDRESS:	REQ.: P.O.- R.R.- NO. F 7177-12151
7177	3/10/83	3 of 4	PULLMAN POWER PRODUCTS	
DISCOUNT TERMS	SHIPPING TERMS		JOB COST CODE: 121	SUBCONTRACT NO. 3469
VIA		VENDOR: JOHNSTON STAINLESS	MAIL 4 COPIES OF INVOICES TO:	

ITEM (LETTER)	QTY. REQ'D.	DESCRIPTION	UNIT PRICE	TOTAL	DATE REC'D.	QTY. REC'D.
		W6. ALL COATED ROD SHALL BE FURNISHED IN HERMETICALLY SEALED CONTAINERS.				
		W7. TEST REPORTS AND CONTAINERS SHALL BE IDENTIFIED BY OUR PURCHASE ORDER NUMBER, OUR ITEM NUMBER, THE SIZE, AND HEAT AND LOT NUMBER.				
		W8. FLAG AND TAG BOTH ENDS OF ALL BARE WIRE.				
		W9. SEPARATE ACTUAL TESTS SHALL BE MADE FOR EACH HEAT OR LOT NUMBER. THE NUMBER OF HEATS OR LOTS SHALL BE KEPT TO A MINIMUM (ONE FOR EACH SIZE)				
		W10. CONTAINERS SHALL BE MARKED IN ACCORDANCE WITH NB 2152 AND SFA 5.9				
		W11. ALL STAINLESS ROD SHALL HAVE A 0.04 MINIMUM CARBON CONTENT.				
		W12. ALL STAINLESS ROD SHALL HAVE A FERRITE TEST ON THE DEPOSIT WELD METAL, REQUIREMENTS, 5-15% OF MAGNA GAUGE.				
		W13. TEST REPORTS SHALL INCLUDE THE FOLLOWING: CHEMICAL ANALYSIS: ACTUAL CHEMICAL ANALYSIS				
		TENSION TEST: ONE (1) SPECIMEN USING ALL WELD METAL FOR EACH HEAT, LOT AND SIZE.				
		TOTAL PRICE				

NO CONFORMATION FOR

NEEDED FOR:			REMARKS	RECEIVING DEPARTMENT
DATE NEEDED:	DATE ORDERED: 3-22-83	DATE PROMISED:		CARRIER:
DWG(S) ATTACHED:				COMPLETE ☐ PARTIAL ☐
PREPARED BY:	APPROVED BY: JRyan RJK	PURCHASED BY:	CLASS 1	PREPAID: $ COLLECT: $
				RECEIVED BY:

IMPORTANT: THIS ORDER IS SUBJECT TO ALL OF THE TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE HEREOF.

OUR ORDER NUMBER MUST APPEAR ON ALL INVOICES, BILLS OF LADING, EXPRESS RECEIPTS AND CORRESPONDENCE. MARK ALL SHIPPING TAGS AND PACKAGES WITH ABOVE ORDER NUMBER

Pullman Power Products
Division of Pullman Incorporated

74-70-36 REV 9/15/78

FIELD REQUISITION - PURCHASE ORDER - RECEIVING REPORT

JOB NO.	DATE	SHEET NO.	SHIPPING ADDRESS:	REQ.- P.O.- R.R.- NO. F- 7177-12151
7177	3/10/83	4 of 4	PULLMAN POWER PRODUCTS	
DISCOUNT TERMS	SHIPPING TERMS		JOB COST CODE: 121	SUBCONTRACT NO. 3469
VIA		VENDOR: JOHNSTON STAINLESS	MAIL 4 COPIES OF INVOICES TO:	

ITEM (LETTER)	QTY. REQ/D.	DESCRIPTION	UNIT PRICE	TOTAL	DATE REC'D.	QTY. REC'D.
	W14.	ITEMS SET FORTH IN THIS PURCHASE ORDER ARE FOR USE IN NULCEAR SAFETY RELATED COMPONENTS SUBJECT TO REPORTING REQUIEMENTS PURSUANT TO SECTION 206 OF THE ENERGY REORGANIZATION ACT OF 1974, AS IMPLEMENTED BY 10 CFR 21. NOTICE OF ANY DEFECTS IDENTIFIED BY VENDOR PURSUANT TO SUCH LAW SHALL BE IMMEDIATELY MADE TO THE DIRECTOR OF QUALITY ASSURANCE, PULLMAN POWER PRODUCTS, P.O. BOX 3308, WILLIAMSPORT, PA 17701.				
		TOTAL PRICE				

FOR INFORMATION ONLY

NEEDED FOR:			REMARKS	RECEIVING DEPARTMENT
DATE NEEDED:	DATE ORDERED: 3-22-83	DATE PROMISED:		CARRIER:
DWG(S) ATTACHED:				COMPLETE ☐ PARTIAL ☐
PREPARED BY:	APPROVED BY:	PURCHASED BY:	CLASS 1	PREPAID: $ COLLECT: $
				RECEIVED BY:

IMPORTANT: THIS ORDER IS SUBJECT TO ALL OF THE TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE HEREOF.

OUR ORDER NUMBER MUST APPEAR ON ALL INVOICES, BILLS OF LADING, EXPRESS RECEIPTS AND CORRESPONDENCE. MARK ALL SHIPPING TAGS AND PACKAGES WITH ABOVE ORDER NUMBER

3469

Pullman Power Products

PRODUCT ENGINEERING DEPARTMENT

QUALITY ASSURANCE AND DOCUMENTATION REQUIREMENTS

	REQ'D	APPROVED BY CUSTOMER	VERIFIED BY P.P.P. Q.C.
1. Vendor Quality Assurance Program - ASME Section III	✓		✓
2. Certified Drawings for Approval			
3. Qualified Procedures for Approval			
a. Welding			
b. Weld Repairs			
c. Heat Treatment			
d. Ultrasonic			
e. Radiograph			
f. Magnetic Particle			
g. Liquid Penetrant			
h. Eddy Current			
4. Documentation			✓
a. Mill Reports	✓		✓
b. Impact Tests	≠ NA ✓		
c. Ultrasonic			
d. Radiograph			
e. Magnetic Particle			
f. Liquid Penetrant			
g. Eddy Current Results			
h. Hydrostatic			
i. Partial Data Reports ASME Section			
j. NDT Personnel Qualifications			
k. Manufacturers C of C			
5. Marking per P.P.P. Standard	✓		✓ INFORMATION ONLY RCK for DB 4-6 T3

Johnston Stainless
P.O.# 7177-12151

FOR INFORMATION

CLASS 1

PREPARED BY R. C. King

DATE OF ISSUE 3-16-83

APPROVED BY [illegible] 3/17/83

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

JOHNSTON STAINLESS
MANUFACTURING DIVISION

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Items 1, 2, 3
A B C

		A	B	C
Size	Grade Johnston ER309	1/16 x 36	3/32 x 36	1/8 x 36
Heat No.		3791-57	3791-57	3791-57
Pounds		100#	100#	100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME SECT III Class 1 1971 Ed.

	TEST RESULTS
Carbon	.063 ✓
Manganese	1.78 ✓
Silicon	.53 ✓
Sulphur	.002 ✓
Phosphorus	.024 ✓
Chromium	23.0 ✓
Nickel	13.9 ✓
Molybdenum	.10 ✓
Titanium	.07 ✓
Columbium + Ta	.010 ✓
Cobalt	
Tungsten	
Aluminum	
Copper	.11 ✓
Iron	Remainder ✓
Tantalum	
Tin	
Vanadium	.02 ✓
Hydrogen	
Nitrogen	
Oxygen	
Ferrite by Magna Gage	5.6% ✓
X-Ray	

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
AB 4-06-83
INITIALS
R C Long

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:					83,900 ✓	38% ✓	
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

We certify that the material supplied was produced and manufactured under a quality assurance program meeting the requirements of NA 3700/NCA 3800 of ASME Section III.

Quality Control

State of California
County of Los Angeles ss.

_____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.

WITNESS my hand and official seal.

(Notary) Signature _____

(Seal) My commission expires _____

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Items 1, 2, 3,
A B C

Size	Grade Johnston ER309	1/16 x 36	3/32 x 36	1/8 x 36
Heat No.		3791-57	3791-57	3791-57
Pounds		100#	100#	100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

TEST RESULTS

Carbon
Manganese
Silicon
Sulphur
Phosphorus
Chromium
Nickel
Molybdenum
Titanium
Columbium
Cobalt
Tungsten
Aluminum
Copper
Iron
Tantalum
Tin
Vanadium
Hydrogen
Nitrogen
Oxygen
Ferrite
X-Ray

WE HEREBY CERTIFY THAT THIS MATERIAL WAS PRODUCED AND PROCESSED UNDER THE AUSPICES OF OUR QUALITY CONTROL PROGRAM AND IS IN ACCORDANCE WITH SECT III OF THE ASME NUCLEAR CODE IDENTIFICATION AND VERIFICATION SYSTEM AND IS IN CONFORMANCE WITH ALL REQUIREMENTS.

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DATE 4-6-83
INITIALS
R C Hung

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:							
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested/has not been tested in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

ASME Quality Systems Certificate
(materials) Number QSC285
Expires on May 20, 1983

State of California
County of Los Angeles ss.

On _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

Helen Mateus
Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

JOHNSTON STAINLESS
MANUFACTURING DIVISION

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Items 1, 2, 3
A B C

		A	B	C
Size	Grade Johnston ER309	1/16 x 36	3/32 x 36	1/8 x 36
Heat No.		3791-57	3791-57	3791-57
Pounds		100#	100#	100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME SECT III Class 1 1971 Ed.

	TEST RESULTS
Carbon	.063
Manganese	1.78
Silicon	.53
Sulphur	.002
Phosphorus	.024
Chromium	23.0
Nickel	13.9
Molybdenum	.10
Titanium	.07
Columbium + Ta	.010
Cobalt	
Tungsten	
Aluminum	
Copper	.11
Iron	Remainder
Tantalum	
Tin	
Vanadium	.02
Hydrogen	
Nitrogen	
Oxygen	
Ferrite by Magna Gage	5.6%
X-Ray	

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DB 4-06-83
INITIALS
R C Terry

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:					83,000	38%	
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested ~~XXXXXXXXXXXXXX~~ in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

We certify that the material supplied was produced and manufactured under a quality assurance program meeting the requirements of NA 3700/NCA 3800 of ASME Section III.

State of California
County of Los Angeles SS.

_____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Items 1, 2, 3,
A B C

Size	Grade Johnston ER309	1/16 x 36	3/32 x 36	1/8 x 36
Heat No.		3791-57	3791-57	3791-57
Pounds		100#	100#	100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

TEST RESULTS

Carbon
Manganese
Silicon
Sulphur
Phosphorus
Chromium
Nickel
Molybdenum
Titanium
Columbium
Cobalt
Tungsten
Aluminum
Copper
Iron
Tantalum
Tin
Vanadium
Hydrogen
Nitrogen
Oxygen
Ferrite
X-Ray

WE HEREBY CERTIFY THAT THIS MATERIAL WAS PRODUCED AND PROCESSED UNDER THE AUSPICES OF OUR QUALITY CONTROL PROGRAM AND IS IN ACCORDANCE WITH SECT III OF THE ASME NUCLEAR CODE IDENTIFICATION AND VERIFICATION SYSTEM AND IS IN CONFORMANCE WITH ALL REQUIREMENTS.

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DB 4-06-83
INITIALS
R E. King

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:							
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested/has not been tested in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

ASME Quality Systems Certificate
(materials) Number QSC285
Expires on May 20, 1983

State of California
County of Los Angeles ss.

On _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

Salem Mathes
Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

JOHNSTON STAINLESS
MANUFACTURING DIVISION

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Items 1, 2, 3
A B C
4 B2

		A	B	C
Size	Grade Johnston ER309	1/16 x 36	3/32 x 36	1/8 x 36
Heat No.		3791-57	3791-57	3791-57
Pounds		100#	100#	100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME SECT III Class 1 1971 Ed.

	TEST RESULTS
Carbon	.063
Manganese	1.78
Silicon	.53
Sulphur	.002
Phosphorus	.024
Chromium	23.0
Nickel	13.9
Molybdenum	.10
Titanium	.07
Columbium + Ta	.010
Cobalt	
Tungsten	
Aluminum	
Copper	.11
Iron	Remainder
Tantalum	
Tin	
Vanadium	.02
Hydrogen	
Nitrogen	
Oxygen	
Ferrite by Magna Gage	5.6%
X-Ray	

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DB 4-06-83
INITIALS
R.C. Ring

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:					83,900	38%	
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested ~~xxxxxxxxxxxx~~ in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

We certify that the material supplied was produced and manufactured under a quality assurance program meeting the requirements of NA 3700/NCA 3800 of ASME Section III.

State of California
County of Los Angeles ss.

_____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

Helen Matus
Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Items 1, 2, 3,
A B C

Size	Grade Johnston ER309	1/16 x 36	3/32 x 36	1/8 x 36
Heat No.		3791-57	3791-57	3791-57
Pounds		100#	100#	100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

TEST RESULTS

Carbon
Manganese
Silicon
Sulphur
Phosphorus
Chromium
Nickel
Molybdenum
Titanium
Columbium
Cobalt
Tungsten
Aluminum
Copper
Iron
Tantalum
Tin
Vanadium
Hydrogen
Nitrogen
Oxygen
Ferrite
X-Ray

WE HEREBY CERTIFY THAT THIS MATERIAL WAS PRODUCED AND PROCESSED UNDER THE AUSPICES OF OUR QUALITY CONTROL PROGRAM AND IS IN ACCORDANCE WITH SECT III OF THE ASME NUCLEAR CODE IDENTIFICATION AND VERIFICATION SYSTEM AND IS IN CONFORMANCE WITH ALL REQUIREMENTS.

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
PG&E Diablo Canyon Project
DB 4-06-83
Initials
R. C. King

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:							
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested/has not been tested in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

ASME Quality Systems Certificate
(materials) Number QSC285
Expires on May 20, 1983

State of California
County of Los Angeles SS.

On _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

JOHNSTON STAINLESS
MANUFACTURING DIVISION

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Item 4
D

Size 1/8 x 36 Grade Johnston EF[illegible]
Heat No. 3931-57
Pounds 100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

		TEST RESULTS
Carbon		.058 ✓
Manganese		1.75 ✓
Silicon		.59 ✓
Sulphur		.014 ✓
Phosphorus		.025 ✓
Chromium		20.1 ✓
Nickel		10.0 ✓
Molybdenum		.16 ✓
Titanium		.04 ✓
Columbium	+ Ta	.012 ✓
Cobalt		
Tungsten		
Aluminum		
Copper		.08 ✓
Iron		Remainder ✓
Tantalum		
Tin		
Vanadium		.05 ✓
Hydrogen		
Nitrogen		
Oxygen		
Ferrite	by Magna Gage	8% ✓
X-Ray		

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DB 4-06-82
INITIALS
R C King

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:					84,600 ✓	41% ✓	
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested ~~[illegible]~~ in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

We certify that the material supplied was produced and manufactured under a quality assurance program meeting the requirements of NA 3700/NCA 3800 of ASME Section III.

State of California
County of Los Angeles ss.

On _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

T. Glen Mathis
Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Item 4
b

Size 1/8 x 36 Grade Johnston ER308
Heat No. 3931-57
Pounds 100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

		TEST RESULTS
Carbon		
Manganese		
Silicon	WE HEREBY CERTIFY THAT THIS MATERIAL WAS PRODUCED AND PROCESSED UNDER	
Sulphur	THE AUSPICES OF OUR QUALITY CONTROL PROGRAM AND IS IN ACCORDANCE WITH	
Phosphorus	SECT III OF THE ASME NUCLEAR CODE IDENTIFICATION AND VERIFICATION	
Chromium	SYSTEM AND IS IN CONFORMANCE WITH ALL REQUIREMENTS.	
Nickel		
Molybdenum		
Titanium		
Columbium		
Cobalt		
Tungsten		
Aluminum		
Copper		
Iron		
Tantalum		
Tin		
Vanadium		
Hydrogen		
Nitrogen		
Oxygen		
Ferrite		
X-Ray		

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DATE 4-06-83
INITIALS RC Thy

CLASS 1

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:							
Heat Treat:							
Hardness:							
Bends:							

~~FOR~~ INFORMATION ONLY

We hereby certify that the above material has been tested/has not been tested in accordance with the listed specification and is in conformance with all requirements:

ASME Quality Systems Certificate
(materials) Number QSC285
Expires on May 20, 1983

State of California
County of Los Angeles ss.

On _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

L. Solen Matus
Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

JOHNSTON STAINLESS
MANUFACTURING DIVISION

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Item 4
D

Size 1/8 x 36 Grade Johnston ER308 D
Heat No. 3931-57
Pounds 100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

		TEST RESULTS
Carbon		.058
Manganese		1.75
Silicon		.59
Sulphur		.014
Phosphorus		.025
Chromium		20.1
Nickel		10.0
Molybdenum		.16
Titanium		.04
Columbium	+ Ta	.012
Cobalt		
Tungsten		
Aluminum		
Copper		.08
Iron		Remainder
Tantalum		
Tin		
Vanadium		.05
Hydrogen		
Nitrogen		
Oxygen		
Ferrite	by Magna Gage	8%
X-Ray		

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DB 4-06-83
INITIALS
R C King

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:					84,600	41%	
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested ~~xxxxxxxxxxxxxx~~ in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

We certify that the material supplied was produced and manufactured under a quality assurance program meeting the requirements of NA 3700/NCA 3800 of ASME Section III.

State of California
County of Los Angeles SS.

On _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

J. Nelson Notaro
Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Item 4
D

Size 1/8 x 36 Grade Johnston ER308
Heat No. 3931-57
Pounds 100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

TEST RESULTS

Carbon
Manganese
Silicon
Sulphur
Phosphorus
Chromium
Nickel
Molybdenum
Titanium
Columbium
Cobalt
Tungsten
Aluminum
Copper
Iron
Tantalum
Tin
Vanadium
Hydrogen
Nitrogen
Oxygen
Ferrite
X-Ray

WE HEREBY CERTIFY THAT THIS MATERIAL WAS PRODUCED AND PROCESSED UNDER THE AUSPICES OF OUR QUALITY CONTROL PROGRAM AND IS IN ACCORDANCE WITH SECT III OF THE ASME NUCLEAR CODE IDENTIFICATION AND VERIFICATION SYSTEM AND IS IN CONFORMANCE WITH ALL REQUIREMENTS.

CLASS 1.

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DB 4-6-83
INITIALS

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:							
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested/has not been tested in accordance with the listed specification and is in conformance with all requirements:

ASME Quality Systems Certificate
(materials) Number QSC285
Expires on May 20, 1983

State of California
County of Los Angeles SS.

In _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

J. Silva
Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

JOHNSTON STAINLESS
MANUFACTURING DIVISION

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Item 4
D

Size 1/8 x 36 Grade D Johnston ER308
Heat No. 3931-57
Pounds 100#

SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

		TEST RESULTS
Carbon		.058
Manganese		1.75
Silicon		.59
Sulphur		.014
Phosphorus		.025
Chromium		20.1
Nickel		10.0
Molybdenum		.16
Titanium		.04
Columbium	+ Ta	.012
Cobalt		
Tungsten		
Aluminum		
Copper		.08
Iron		Remainder
Tantalum		
Tin		
Vanadium		.05
Hydrogen		
Nitrogen		
Oxygen		
Ferrite	by Magna Gage	8%
X-Ray		

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DB 4 06 83
INITIALS
RC Ley

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:					84,600	41%	
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested/~~inspected~~ and ~~processed~~ in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

We certify that the material supplied was produced and manufactured under a quality assurance program meeting the requirements of NA 3700/NCA 3800 of ASME Section III.

State of California
County of Los Angeles SS.

On _____, before me, the undersigned, a Notary Public in and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

F. Soto Matus
Quality Control

3469

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

Date 3-31-83

Johnston No. 33356-83
Customers Order No. F7177-12151
Item 4
D

Size 1/8 x 36 Grade Johnston ER308
Heat No. 3931-57
Pounds 100#
SPECIFICATION ASME SFA5.9 Sect II Part C
ASME Sect III Class 1 1971 Ed.

TEST RESULTS

Carbon
Manganese
Silicon
Sulphur
Phosphorus
Chromium
Nickel
Molybdenum
Titanium
Columbium
Cobalt
Tungsten
Aluminum
Copper
Iron
Tantalum
Tin
Vanadium
Hydrogen
Nitrogen
Oxygen
Ferrite
X-Ray

WE HEREBY CERTIFY THAT THIS MATERIAL WAS PRODUCED AND PROCESSED UNDER THE AUSPICES OF OUR QUALITY CONTROL PROGRAM AND IS IN ACCORDANCE WITH SECT III OF THE ASME NUCLEAR CODE IDENTIFICATION AND VERIFICATION SYSTEM AND IS IN CONFORMANCE WITH ALL REQUIREMENTS.

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
DB 4-06-83
INITIALS
R C King

Charpys: As Welded | Heat Treated | As Welded | Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:							
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested/has not been tested in accordance with the listed specification and is in conformance with all requirements:

CLASS 1

ASME Quality Systems Certificate
(materials) Number QSC285
Expires on May 20, 1983

State of California
County of Los Angeles SS.

On ____________, before me, the undersigned, a Notary Public in and for said State, personally appeared ____________ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature ____________

(Seal) My commission expires ____________

Quality Control

3469

Johnston
Stainless Welding Rods

10140 Romandel Ave., P.O. Box 3284, Santa Fe Springs, CA 90670
Telephone (213) 946-1764

NO. 33356 -83

DATE 3-31-83

YOUR ORDER NO. F7177-12151

SOLD TO: Pullman PowerProducts
P O Box 367
Avila Beach, CA 93424

SHIPPED TO
C/O Pacific Gas & Elect. C
Diablo Canyon Power Plant
7 Miles No. of Avila Beach
CA 93424

OUR ORDER NO.	SALESMAN	TERMS	F.O.B.	DATE SHIPPED	SHIPPED VIA
	HM	NET 30 DAYS	X S.P.S., CA	3-31-83	Prepaid & Corona-

QUANTITY ORDERED	QUANTITY SHIPPED	STOCK NUMBER / DESCRIPTION	UNIT PRICE	UNIT	AMOUNT
Item 1					
100#	100#	1/16 x 36 Johnston ER309, tagge both ends			
Item 2					
100#	100#	3/32 x 36 Johnston ER309, tagged both ends			
Item 3					
100#	100#	1/8 x 36 Johnston ER309, tagged both ends			
Item 4					
100#	100#	1/8 x 36 Johnston ER308, tagged both ends			
		Test Charge Items 1, 2, 3 Test Charge Item 4			
		ASME SFA5.9 Sect II Part C ASME Sect III Class 1 1971 Ed. Carbob .04 min Ferrite 5-15% Magna Gage			
		Certs/w/material Certs to ATTN: Davis Renner, Buyer			

FOR INFORMATION CLASS 1

Material may not be returned without seller's consent, and if so returned will not be credited. The extent to which returned goods will be credited rests with seller.

All claims for errors, deficiencies, imperfections, etc., must be made within 30 days after receipt of goods.

Material proving defective for suitable use will be replaced. No claims for labor or damages will be allowed and no responsibility assumed for delays of carriers or delays arising from fires, strikes, or other causes unavoidable or beyond control of the Company.

Goods covered by this invoice were produced in compliance with all applicable requirements of the Fair Labor Standards Act of 1935, as amended, and with all applicable regulations thereunder.

3469

Johnston
Stainless Welding Rods

10140 Romandel Ave., P.O. Box 3254, Santa Fe Springs, CA 90670
Telephone (213) 946-1764

NO. 3385[illegible]
DATE 3-31-[illegible]
YOUR ORDER NO. [illegible]7177-[illegible]

SOLD TO [illegible] Products
[illegible] Box 247
[illegible], CA [illegible]3424

SHIPPED TO
C/O Pacific Gas & Elect.
Diablo Canyon Power Plant
[illegible]
CA. [illegible]

OUR ORDER NO.	SALESMAN	TERMS	F.O.B.	DATE SHIPPED	SHIPPED VIA
	[illegible]	NET 30 DAYS	[illegible]	3-31-[illegible]3	[illegible] Corona-[illegible]

QUANTITY ORDERED	QUANTITY SHIPPED	STOCK NUMBER / DESCRIPTION	UNIT PRICE	UNIT	AMOUNT
100#	100#	1/16 x 36 Johnston ER309, tagge[illegible] both ends			
100#	100#	3/32 x 36 Johnston ER309, tagged both ends			
100#	100#	1/8 x 36 Johnston ER309, tagged both ends			
100#	100#	1/8 x 36 Johnston ER308, tagged both ends			
		Test Charge Items 1,			
		Test Charge Item 4			
		[illegible] SFA5.9 Sect II Part C ASME Sect III Class 1 1971 Ed. Carbob .04 min Ferrite 5-15% Magna Gage			
		Certs/w/material			
		Certs to ATTN: Davis Renner, Buyer			

RECEIVED
APR 06 1983
RCK
PULLMAN POWER PROD.
AVILA BEACH, CALIF.
JOB No 7177

FOR INFORMATION ONLY

GENERAL CONSTRUCTION
Diablo Canyon
DATE APR [illegible] 1983 REC'D.
Checked [illegible]
P. G. and E. CO.

CLASS 1

[illegible] not be returned without seller's consent and if so returned will not be credited. [illegible]
[illegible] must be made within 30 days after receipt of goods [illegible]
[illegible]

3469

FOR INFORMATION ONLY

CLASS 1

CORONA TRUCKING, INC.

For billing inquiries, call main office – (714) 735-3210

Los Angeles	(213) 944-9981	Corona	(714) 735-3210
Orange County	(714) 994-2551	San Diego	(714) 296-6214
Riverside	(714) 359-7530	Escondido	(714) 745-4732
Fresno	(209) 486-3373	Visalia	(209) 651-1445

REMIT TO:

P.O. BOX 315
CORONA, CA 91720

FREIGHT BILL NO.

B290882

TO INSURE PROPER CREDIT TO YOUR ACCOUNT, PLEASE SHOW THIS NUMBER ON YOUR REMITTANCE

Consignee [illegible] PULLMAN POWER PROD [illegible] PACIFIC GAS [illegible] ELEC CO [illegible] DIABLO CNYN [illegible] AVILA BCH CA [illegible]

Shipper [illegible] STAINLESS WELDING [illegible] 10140 [illegible] AVE SANTA FE SPRINGS CA [illegible]

DATE	SHIPPERS NO.	INTERLINING CARRIER	C L PRO NO.	ACCTS. REC.	PAYABLE	NET REV.	ORIG/DEST
[illegible] 3	33536-83			4166			[illegible]

NO PCS.	DESCRIPTION OF ARTICLES SHIPPED	WEIGHT	RATE	FREIGHT	S/C	TOTAL CHARGES
	[illegible]	500	[illegible]	[illegible]		

[illegible] 7177 [illegible]

RECEIVED
APR 06 1983
RCK
PULLMAN POWER PROD.
AVILA BEACH, CALIF.
JOB No 7177

GENERAL CONSTRUCTION
Diablo Canyon
DATE APR 06 1983 REC'D.
Checked [signature]
P. G. and E. CO.

QA-3

PUBLIC POWER DISTRICTS
QUALITY ASSURANCE DEPARTMENT

INSPECTION REPORT

PAGE ____ OF ____

RECEIVING REPORT NO 3464

JOB NO. 7177

APPLICABLE TO: (CHECK) RECEIVING ☒ SUBCONTRACTOR ☐

HOLD
☐ MILL TEST REPORTS ☐ X-RAYS
☐ OTHERS ____

VENDOR JOHNSTON STAINLESS P.O. NO. 7177-12152 DATE 5-13-83

MANUFACTURER ____ INSPECTED BY R.C. Kling DATE 5-14-83

ITEM	PART NAME	QUANTITY	MATERIAL
A	3/32" S/S COVERED	300#	ELECTRODE E-309-16

ITEM OR DWG. NO.	QUANTITY	HEAT NO. OR SYMBOL	IDENTIFICATION VERIFIED	DOCUMENTATION VERIFIED	RADIOGRAPHS APPROVED	REMARKS
A	300#	3193	RC Kling 5-13-83	RC Ks-14-83		CLASS 1

FOR INFORMATION ONLY

D-21

Pullman Power Products
Division of Pullman Incorporated

74-78-38 REV 8/16/78

FIELD REQUISITION - PURCHASE ORDER - RECEIVING REPORT

JOB NO.	DATE	SHEET NO.
7177	3/8/83	1 of 3

DISCOUNT TERMS | SHIPPING TERMS

VIA

1-213-946-1764 FREDA

SHIPPING ADDRESS: PULLMAN POWER PRODUCTS
c/o Pacific Gas & Electric Company
Diablo CAnyon Power Plant
7 Miles North of Avila Beach, CA 93424

VENDOR:
JOHNSTON STAINLESS
10140 Romandel Ave. P.O. BOX 3284
Santa Fe Springs, CA 90670

REQ.- P.O.- R.R.- NO. F- 7177-12152

JOB COST CODE: 121

SUBCONTRACT NO. 3469 3464

MAIL 4 COPIES OF INVOICES TO:
P.O. Box 367
Avila Beach, CA 93424

ITEM (LETTER)	QTY. REQ/D.	DESCRIPTION	UNIT PRICE	TOTAL	DATE REC'D.	QTY. REC'D.
A	300#	3/32" S/S COVERED ELECTRODE E-309-16	lb. 4 47	1341 00		
		TESTING CHARGES	90 00	90 00		
		SPECIAL REQUIREMENTS				
		W1. SUPPLIER SHALL FURNISH THREE COPIES OF A MILL TEST REPORT SIGNED BY MANUFACTURER'S REPRESENTATIVE.				
		W2. MILL TEST REPORTS SHALL BE TRACEABLE TO OUR PURCHASE ORDER AND ITEM NUMBER.				
		W3. ALL REQUIRED DOCUMENTATION SHALL BE SENT ON THE DAY OF EACH SHIPMENT TO PULLMAN POWER PRODUCTS, P.O. BOX 367, AVILA BEACH, CA, 93424. ATIN: Q.A. DEPT.				
		W4. ANY NONCONFORMANCE TO THE REQUIRMENTS OF THIS PURCHSE ORDER WILL BE CONSIDERED JUST CAUSE FOR RETURN OF MATERIALS WITHOUT COST TO BUYER.				
			TOTAL PRICE	1431 00		

CLASS 1

FOR INFORMATION ONLY

NEEDED FOR: UNIT II STOCK

DATE NEEDED: | DATE ORDERED: 3-22-83 | DATE PROMISED: 1 week

DWG(S) ATTACHED:

PREPARED BY: RON KING | APPROVED BY: | PURCHASED BY:

IMPORTANT: THIS ORDER IS SUBJECT TO ALL OF THE TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE HEREOF.

OUR ORDER NUMBER MUST APPEAR ON ALL INVOICES, BILLS OF LADING, EXPRESS RE[illegible]TS AND CORRESPONDENCE. MARK ALL SHIPPING TAGS [illegible] ABOVE ORDER NUMBER

REMARKS

REIMBURSABLE

RECEIVING DEPARTMENT

CARRIER:

COMPLETE ☐ PARTIAL ☐

PREPAID: $ COLLECT: $

RECEIVED BY:

Pullman Power Products
Division of Pullman Incorporated

74-20-38 REV 6/15/78

FIELD REQUISITION - PURCHASE ORDER - RECEIVING REPORT

JOB NO.	DATE	SHEET NO.	SHIPPING ADDRESS:	REQ.- P.O.- R.R.-
7177	3/8/83	2 of 3	PULIMAN POWER PRODUCTS	NO. F-7177-12152
DISCOUNT TERMS	SHIPPING TERMS			JOB COST CODE: 121 / SUBCONTRACT NO. 3464
VIA		VENDOR: JOHNSTON STAINLESS		MAIL 4 COPIES OF INVOICES TO:

FOR INFORMATION ONLY

ITEM (LETTER)	QTY. REQ'D.	DESCRIPTION	UNIT PRICE	TOTAL	DATE REC'D.	QTY. REC'D.
		W5. WELDING MATERIAL SHALL BE MANUFACTURED IN ACCORDANCE WITH 1971, SECTION III, PARAGRAPH NB 2130 AND NB 2400. ACTUAL MILL TEST REPORTS SHALL INDICATE ALL THE REQUIREMENTS OF 1971, SECTION III, PARAGRAPH NB 2130 AND NB 2400 AND ASME SECTION II, PART C, 1971 SFA 5.4				
		W6. ALL COATED ROD SHALL BE FURNISHED IN HERMETICALLY SEALED CONTAINERS.				
		W7. TEST REPORTS AND CONTAINERS SHALL BE IDENTIFIED BY OUR PURCHASE ORDER NUMBER, OUR ITEM NUMBER, THE SIZE, AND HEAT AND LOT NUMBER.				
		W8. FLAG AND TAG BOTH ENDS OF ALL BARE WIRE.				
		W9. SEPARATE ACTUAL TESTS SHALL BE MADE FOR EACH SIZE AND HEAT OR LOT NUMBER. THE NUMBER OF HEATS OR LOTS SHALL BE KEPT TO A MINIMUM (ONE FOR EACH SIZE)				
		W10. CONTAINERS SHALL BE MARKED IN ACCORDANCE WITH NB 2152 AND SFA 5.4				
		TOTAL PRICE				

NEEDED FOR:			REMARKS	RECEIVING DEPARTMENT
DATE NEEDED:	DATE ORDERED: 3-22-83	DATE PROMISED:	CLASS 1	CARRIER:
DWG(S) ATTACHED:				COMPLETE ☐ PARTIAL ☐
PREPARED BY:	APPROVED BY: JHRyan for	PURCHASED BY: L Varner		PREPAID: $ COLLECT: $
				RECEIVED BY:

IMPORTANT: THIS ORDER IS SUBJECT TO ALL OF THE TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE HEREOF.

OUR ORDER NUMBER MUST APPEAR ON ALL INVOICES, BILLS OF LADING, EXPRESS RECEIPTS AND CORRESPONDENCE. MARK ALL SHIPPING TAGS AND PACKAGES WITH ABOVE ORDER NUMBER

Pullman Power Products
Division of Pullman Incorporated

74-70-38 REV 4/15/79

FIELD REQUISITION - PURCHASE ORDER - RECEIVING REPORT

JOB NO.	DATE	SHEET NO.	SHIPPING ADDRESS:	REQ.- P.O.- R.R.-
7177	3/8/83	3 of 3	PULLMAN POWER PRODUCTS	NO. F- 7177-12152
DISCOUNT TERMS	SHIPPING TERMS			JOB COST CODE: 12[illegible]
				SUBCONTRACT NO. 3464
VIA			VENDOR: JOHNSTON STAINLESS	MAIL 4 COPIES OF INVOICES TO:

FOR INFORMATION ONLY

ITEM (LETTER)	QTY. REQ'D.	DESCRIPTION	UNIT PRICE	TOTAL	DATE REC'D.	QTY. REC'D.
		W11. ALL STAINLESS ROD SHALL HAVE A 0.04 MINIMUM CARBON CONTENT.				
		W12. ALL STAINLESS ROD SHALL HAVE A FERRITE TEST ON THE DEPOSIT WELD METAL, REQUIREMENTS, 5-15% OF MAGNA GAUGE.				
		W13. TEST REPORTS SHALL INCLUDE THE FOLLOWING: CHEMICAL ANALYSIS: ACTUAL CHEMICAL ANALYSIS FROM UNDILUTED WELD DEPOSIT FOR EACH HEAT, LOT AND SIZE. TENSION TEST: ONE (1) SPECIMEN USING ALL WELD METAL FOR EACH HEAT, LOT AND SIZE.				
	W14.	ITEMS SET FORTH IN THIS PURCHASE ORDER ARE FOR USE IN NUCLEAR SAFETY RELATED COMPONENTS SUBJECT TO REPORTING REQUIREMENTS PURSUANT TO SECTION 206 OF THE ENERGY REORGANIZATION ACT OF 1974, AS IMPLEMENTED BY 10 CFR 21. NOTICE OF ANY DEFECTS IDENTIFIED BY VENDOR PURSUANT TO SUCH LAW SHALL BE IMMEDIATELY MADE TO THE DIRECTOR OF QUALITY ASSURANCE, PULLMAN POWER PRODUCTS, P.O. BOX 3308, WILLIAMSPORT, PA. 17701.				
		TOTAL PRICE				

NEEDED FOR:			REMARKS	RECEIVING DEPARTMENT
DATE NEEDED:	DATE ORDERED: 3-22-83	DATE PROMISED:	CLASS 1	CARRIER:
DWG(S) ATTACHED:				COMPLETE ☐ PARTIAL ☐
PREPARED BY:	APPROVED BY:	PURCHASED BY:		PREPAID: $ COLLECT: $
				RECEIVED BY:

IMPORTANT: THIS ORDER IS SUBJECT TO ALL OF THE TERMS AND CONDITIONS PRINTED ON THE REVERSE SIDE HEREOF.

OUR ORDER NUMBER MUST APPEAR ON ALL INVOICES, BILLS OF LADING, EXPRESS REC[illegible]TS AND CORRESPONDENCE. MARK ALL SHIPPING TAGS [illegible] PACKAGES WITH ABOVE ORDER NUMBER

Pullman Power Products

RR-3464

PRODUCT ENGINEERING DEPARTMENT

QUALITY ASSURANCE AND DOCUMENTATION REQUIREMENTS

	REQ'D	APPROVED BY CUSTOMER	VERIFIED BY P.P.P. Q.C.
1. Vendor Quality Assurance Program - ASME Section III	✓		✓
2. Certified Drawings for Approval			
3. Qualified Procedures for Approval			
a. Welding			
b. Weld Repairs			
c. Heat Treatment			
d. Ultrasonic			
e. Radiograph			
f. Magnetic Particle			
g. Liquid Penetrant			
h. Eddy Current			
4. Documentation	✓		✓
a. Mill Reports	✓		
b. Impact Tests	Same as		
c. Ultrasonic			
d. Radiograph			
e. Magnetic Particle			
f. Liquid Penetrant			
g. Eddy Current Results			
h. Hydrostatic			
i. Partial Data Reports ASME Section			
j. NDT Personnel Qualifications			
k. Manufacturers C of C			
5. Marking per P.P.P. Standard	✓		✓

Johnston Stainless
P.O. # 7177-12152

FOR INFORMATION ONLY

CLASS 1

PREPARED BY R C King

APPROVED BY [illegible] 3/17/83

DATE OF ISSUE 3-16-83

PAGE --

JOHNSTON
Stainless Welding Rods
10140 Romandel Ave., P.O. Box 3284, Santa Fe Springs, CA 90670
Telephone (213) 946-1764

NO. 33759-83
DATE 5-10-83 RR-3464
YOUR ORDER NO. F7177-12152

SOLD TO
Pullman Power Products
P O Box 367
Avila Beach, CA 93424

SHIPPED TO
Pullman Power Products
C/O Pacific Gas & Electric Company
Diablo Canyon Power Plant
7 Miles No.of Avila Beach, CA

OUR ORDER NO.	SALESMAN	TERMS	F.O.B.	DATE SHIPPED	SHIPPED VIA
	SM	NET 30 DAYS	S.F.S.	5-10-83	Corona-Collect

QUANTITY ORDERED	QUANTITY SHIPPED	STOCK NUMBER / DESCRIPTION	UNIT PRICE	UNIT	AMOUNT
300#	300#	3/32 Stoody E309-16 ASME SFA5.4 Sect II Part C ASME Sec III Class1 NX 1971 Ed. NB2130 NB2400			
		Test Charge			
		Certs/w/material Certs to ATTN: Q A Dept.			

CLASS I

RECEIVED
MAY 13 1983
Fred Bauer
PULLMA[illegible] PROD
AVILA BE[illegible] CALIF.
JOB NO

GENERAL CONSTRUCTION
Diablo Canyon
DATE MAY 13 1983
Checked
P. G. and E. CO.

FOR INFORMATION ONLY

Material may not be returned without seller's consent, and if so returned will not be credited. The extent to which returned goods will be credited rests with seller.
All claims for errors, deficiencies, imperfections, etc., must be made within 30 days after receipt of goods.
Material proving defective for suitable use will be replaced. No claims for labor or damages will be allowed and no responsibility assumed for delays of deliveries arising from fires, strikes, or other causes unavoidable or beyond control of the Company.
Goods covered by this invoice were produced in compliance with all applicable requirements of the Fair Labor Standards Act of 1938, as amended, and of [illegible] regulations thereunder.

PACKING LIST

CORONA TRUCKING, INC.

For billing inquiries, call main office – (714) 735-3210

Los Angeles	(213) 944-9981	Corona	(714) 735-3210
Orange County	(714) 994-2551	San Diego	(714) 296-6214
Riverside	(714) 359-7530	Escondido	(714) 745-4732
Fresno	(209) 486-3373	Visalia	(209) 651-1445

REMIT TO:
P.O. BOX 315
CORONA, CA 91720

FREIGHT BILL NO.
B296827

TO INSURE PROPER CREDIT TO YOUR ACCOUNT, PLEASE SHOW THIS NUMBER ON YOUR REMITTANCE:

RR-3464

Consignee: PULLMAN POWER PROD, % PACIFIC GAS & ELEC CO, DIABLO CANYON POWER PLANT, 7 MILES NORTH OF AVILA BEACH CA

Shipper: [illegible] STAINLESS WELDING RODS, 10140 [illegible] AVE, SANTA FE [illegible] SPRINGS CA 90670

DATE	SHIPPERS NO.	INTERLINING CARRIER	C L PRO NO.	ACCTS. REC.	PAYABLE	NET REV.	ORIG/DEST
5 11 83	33759-83			3153			11 L

NO PCS.	DESCRIPTION OF ARTICLES SHIPPED	WEIGHT	RATE	FREIGHT	S/C	TOTAL CHARGES
1	WELDING RODS I/S	300	M	3153		3153 COLLECT

GENERAL CONSTRUCTION
Diablo Canyon
DATE MAY 18 1983 REC'D.
Checked [signature]
P. G. and E. Co.

RECEIVED
MAY 13 1983
[signature]
PULLMAN POWER PROD.
AVILA BEACH, CALIF.
JOB No 7177

CLASS I

"These charges include (1) fees to pay for regulation of transportation by the California Public Utilities Commission and (2) taxes paid to California cities instead of excise or business licence taxes they could otherwise impose."

DRIVER	DATE	RECIEVED IN GOOD CONDITION EXCEPT AS NOTED BY	
	5-17-[illegible]	[signature]	#7

PUC REGULATIONS REQUIRE PAYMENT WITHIN 7 DAYS

CUSTOMER COPY

FOR INFORMATION ONLY

RR-3464

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

Date 5-10-83

Johnston No. 33759-83
Customers Order No. F7177-12152
Item A
Mfr: Stoody

Size 3/32 Grade E309-16
Heat No. 3193
Pounds 300#

SPECIFICATION ASME SFA5.4 Sect II Part C ASME Sect III Class 1
1971 Ed. NB2130 NB2400

TEST RESULTS

Carbon
Manganese
Silicon
Sulphur
Phosphorus
Chromium
Nickel
Molybdenum
Titanium
Columbium
Cobalt
Tungsten
Aluminum
Copper
Iron
Tantalum
Tin
Vanadium
Hydrogen
Nitrogen
Oxygen
Ferrite
X-Ray

WE HEREBY CERTIFY THAT THIS MATERIAL WAS PROCESSED UNDER THE AUSPICES OF OUR QUALITY CONTROL PROGRAM AND IS IN ACCORDANCE WITH SECT III OF THE ASME NUCLEAR CODE IDENTIFICATION AND VERIFICATION SYSTEM AND IS IN CONFORMANCE WITH ALL REQUIREMENTS.

CLASS 1

APPROVED
FOLUMAN POWER PRODUCTS
Q.C.
P.G.&E. Diablo Canyon Project
R C King
5-19-83

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:							
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested/has not been tested in accordance with the listed specification and is in conformance with all requirements:

State of California
County of Los Angeles ss.

On _____, before me, the undersigned, a Notary Public and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) (Seal) Signature _____
My commission expires _____

ASME Quality Systems Certificate
(materials) Number QSC285
Expires on May 20, 1983

T. Nelson Mathes
Quality Control

STOODY COMPANY

INDUSTRY, CALIFORNIA

Rk-3464

CERTIFIED MATERIAL TEST REPORT

To: Johnston Stainless Welding

10140 Romandel Ave.

Santa Fe Springs, CA 90670

Date May 5, 1983

Certification No. 481-83

Customer P. O. No. 15581 Item No. 1

Stoody Product Name 3/32" Stoody 309-16 Stainless Electrode

Specification ASME Section II Part C, SFA5.4 and Section III NB2130 NB2400 Classification E309

Lot No. 3193 Stoody Order No. 68593 Weight 300 lbs.

CLASS 1

CHEMICAL ANALYSIS – PERCENT BY WEIGHT

Actual Chemical Analysis of Undiluted All-Weldmetal Deposit

C	Mn	Si	Cr	Ni	Mo	Cb+Ta	P	S
0.08	1.24	0.57	23.82	10.62	<0.01	0.04	0.011	0.009
		Co	V	Ti	Cu			
		0.03	0.03	0.03	0.04			

Ferrite per Schaeffler Diagram 8%; per Magne Gage 8FN

Remarks: We certify that the above material is in conformance with the applicable requirements of Section II Part C and Section III, Nuclear Power Plant Components of the ASME Boiler and Pressure Vessel Code, 1971 Edition through Winter 1973 Addenda.

Quality System Certificate (Materials) No. QSC-304 expires November 18, 1983.

MAY 13 1983

FOR INFORMATION ONLY

A1

PULLMAN POWER PRODUCTS PO#: F7177-12152
JOHNSTON STAINLESS SHIPPER#: 33759-83
DATE SHIPPED: 5-10-83
ITEM A

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
R C King

STOODY COMPANY

By Paul Bente
Paul Bente
Quality Assurance Specialist

5069

RR-3464

STOODY COMPANY

CONTINUED	PAGE	DATE
Certification No.: 481-83	2	5/5/83

Material: 3/32" 309-16 Lot: 3193

As Welded Mechanical Properties (AC)

Ultimate Tensile Strength, ksi	89.1 ✓
Elongation in (1) inch, (%)	42 ✓

As Welded Mechanical Properties (DC)

Ultimate Tensile Strength, ksi	86.5 ✓
Elongation in (1) inch, (%)	41 ✓

CLASS 1

Paul Bente
Quality Assurance Specialist

MAY 6 1983

FOR INFORMATION ONLY

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
R C King
5-19-83

RR-3464

MAGNAFLUX Quality Services

DIVISION OF MAGNAFLUX CORPORATION
6800 EAST WASHINGTON BOULEVARD
LOS ANGELES, CALIFORNIA 90040
TELEPHONE (213) 724-3811

LABORATORY NO. 43456-6-1

DATE REPORTED: 4-28-83

PURCHASE ORDER NO. 52509

SHIPPER NO. ---

SAMPLE SUBMITTED: 309-16 Weld Plates

MATERIAL SPECIFICATION: ASME SFA 5.4

TEST METHOD: ASTM E8

STOODY COMPANY

CERTIFIED TEST REPORT

IDENTIFICATION NUMBER	STRESSED DIMENSION	STRESSED AREA	YIELD STRENGTH ACTUAL LOAD POUNDS	YIELD STRENGTH POUNDS PER SQ. IN.	ULTIMATE STRENGTH: ACTUAL LOAD POUNDS	ULTIMATE STRENGTH: POUNDS PER SQ. IN.	ELONGATION INCHES	ELONGATION PERCENT	REDUCTION AREA REDUCED DIMENSION	REDUCTION AREA PERCENT	FRACTURE CODE
ROOM TEMPERATURE TENSILE TEST											
3/32" Lot 3193											
	.251	.0495	3500	70700	4410	89100	.42	42	.172	53	
(DC)	.251	.0495	3410	68900	4280	86500	.41	41	.173	52	
MAXIMUM REQUIREMENTS											
MINIMUM REQUIREMENTS						80000		30		---	

CLASS 1

Requirements shown are per P.O.

MAY 6 1983

FOR INFORMATION ONLY

YIELD STRENGTH DETERMINE AT: 0.2% Offset
ELONGATION GAGE LENGTH: 1 inches
SPEED OF TESTING: 0.05 in/min
HEAT TREATED AS FOLLOWS:
WITNESSED BY:

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
R C King
INITIALS
5/16/83

FRACTURE CODE:
(F) Flaw present.
(G) Broke outside gage mark.
(g) Broke through gage mark outside middle half of gage length.

C. McGuire
MAGNAFLUX QUALITY SERVICES

RR-3464

JOHNSTON STAINLESS WELDING RODS
10140 ROMANDEL AVENUE, SANTA FE SPRINGS, CALIFORNIA 90670
TELEPHONE (213) 946-1764

CERTIFICATION OF TESTS

Date 5-10-83

Johnston No. 33759-83
Customers Order No. F7177-12152
Item A
Mfr: Stoody

Size 3/32 Grade E309-16
Heat No. 3193
Pounds 300#

SPECIFICATION ASME SFA5.4 Sect II Part C ASME Sect III Class 1 1971 Ed. NB2130 NB2400

TEST RESULTS **CLASS 1**

WE HEREBY CERTIFY THAT THIS MATERIAL WAS PROCESSED UNDER THE AUSPICES OF OUR QUALITY CONTROL PROGRAM AND IS IN ACCORDANCE WITH SECT III OF THE ASME NUCLEAR CODE IDENTIFICATION AND VERIFICATION SYSTEM AND IS IN CONFORMANCE WITH ALL REQUIREMENTS.

Carbon	
Manganese	
Silicon	
Sulphur	
Phosphorus	
Chromium	
Nickel	
Molybdenum	
Titanium	
Columbium	
Cobalt	
Tungsten	
Aluminum	
Copper	
Iron	
Tantalum	
Tin	
Vanadium	
Hydrogen	
Nitrogen	
Oxygen	
Ferrite	
X-Ray	

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
R. C. Wang
INITIALS
5-19-83

Charpys:	As Welded	Heat Treated	As Welded	Heat Treated

Tensiles:	Yield	Tensile	Elong.	Yield	Tensile	Elong.	Red. of Area
As Welded:							
Heat Treat:							
Hardness:							
Bends:							

FOR INFORMATION ONLY

We hereby certify that the above material has been tested/has not been tested in accordance with the listed specification and is in conformance with all requirements:

ASME Quality Systems Certificate
(materials) Number QSC285
Expires on May 20, 1983

Helen Mateus
Quality Control

State of California
County of Los Angeles ss.

On _____, before me, the undersigned, a Notary Public and for said State, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same.
WITNESS my hand and official seal.

(Notary) Signature _____
(Seal) My commission expires _____

STOODY COMPANY

INDUSTRY, CALIFORNIA

Rn-3464

CERTIFIED MATERIAL TEST REPORT

To: Johnston Stainless Welding

10140 Romandel Ave.

Santa Fe Springs, CA 90670

Date May 5, 1983

Certification No. 481-83

CLASS 1

Customer P. O. No. 15581 Item No. 1

Stoody Product Name 3/32" Stoody 309-16 Stainless Electrode

Specification ASME Section II Part C, SFA5.4 and Section III NB2130 NB2400 Classification E309

Lot No. 3193 Stoody Order No. 68593 Weight 300 lbs.

CHEMICAL ANALYSIS – PERCENT BY WEIGHT

Actual Chemical Analysis of Undiluted All-Weldmetal Deposit

C	Mn	Si	Cr	Ni	Mo	Cb+Ta	P	S
0.08	1.24	0.57	23.82	12.62	<0.01	0.04	0.011	0.009
		Co	V	Ti	Cu			
		0.03	0.03	0.03	0.04			

Ferrite per Schaeffler Diagram 8%; per Magne Gage 8FN

Remarks: We certify that the above material is in conformance with the applicable requirements of Section II Part C and Section III, Nuclear Power Plant Components of the ASME Boiler and Pressure Vessel Code, 1971 Edition through Winter 1973 Addenda.

Quality System Certificate (Materials) No. QSC-304 expires November 18, 1983.

FOR INFORMATION ONLY

MAY 8 1983

PULLMAN POWER PRODUCTS PO#: F7177-12152
JOHNSTON STAINLESS SHIPPER#: 33759-83
DATE SHIPPED: 5-10-83
ITEM A

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
R C King

STOODY COMPANY

By _____
Paul Bente
Quality Assurance Specialist

5069

STOODY COMPANY

RR. 3464

CONTINUED	PAGE	DATE
Certification No.: 481-83	2	5/5/83

Material: 3/32" 309-16 Lot: 3193

CLASS 1

As Welded Mechanical Properties (AC)

Ultimate Tensile Strength, ksi	89.1 ✓
Elongation in (1) inch, (%)	42

As Welded Mechanical Properties (DC)

Ultimate Tensile Strength, ksi	86.5 ✓
Elongation in (1) inch, (%)	41

Paul Bente
Quality Assurance Specialist

FOR INFORMATION ONLY

MAY 6 1983

A1

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
D C King
INITIALS
5-14-83

RR-3464

MAGNAFLUX Quality Services

DIVISION OF MAGNAFLUX CORPORATION
6800 EAST WASHINGTON BOULEVARD
LOS ANGELES, CALIFORNIA 90040
TELEPHONE (213) 724-3811

LABORATORY NO. 43456-6-1

DATE REPORTED: 4-28-83

PURCHASE ORDER NO. 52509

SHIPPER NO. ---

STOODY COMPANY

SAMPLE SUBMITTED: 309-16 Weld Plates

MATERIAL SPECIFICATION: ASME SFA 5.4

TEST METHOD: ASTM E8

CERTIFIED TEST REPORT

			YIELD STRENGTH		ULTIMATE STRENGTH:		ELONGATION		REDUCTION AREA		
IDENTIFICATION NUMBER	STRESSED DIMENSION	STRESSED AREA	ACTUAL LOAD POUNDS	POUNDS PER SQ. IN	ACTUAL LOAD POUNDS	POUNDS PER SQ. IN.	INCHES	PERCENT	REDUCED DIMENSION	PERCENT	FRACTURE CODE
ROOM TEMPERATURE TENSILE TEST											CLASS 1
3/32" Lot 3193											
	.251	.0495	3500	70700	4410	89100	.42	42	.172	53	
(DC)	.251	.0495	3410	68900	4280	86500	.41	41	.173	52	
			Requirements shown are per P.O.								
MAXIMUM REQUIREMENTS											
MINIMUM REQUIREMENTS			---			80000		30		---	

MAY 6 1983

FOR INFORMATION ONLY

YIELD STRENGTH DETERMINE AT: 0.2% Offset

ELONGATION GAGE LENGTH: 1 inches

SPEED OF TESTING: 0.05 in/min

HEAT TREATED AS FOLLOWS:

WITNESSED BY:

APPROVED
PULLMAN POWER PRODUCTS
Q.A.
P.G.&E. Diablo Canyon Project
R.C. Kung
INITIALS
5-19-83

FRACTURE CODE:

(F) Flaw present.

(G) Broke outside gage mark.

(g) Broke through gage mark or outside middle half of gage length.

By: C. McGuire
MAGNAFLUX QUALITY SERVICES

Original

THE HOWARD P. FOLEY COMPANY

NONCONFORMANCE REPORT

Page 1 of 2

NUMBER: 8802-824 Rev. 1

DESCRIPTION: QUALIFICATION/CERTIFICATION OF THE HOWARD P. FOLEY COMPANY / CATARACT ENGINEERING and CONSTRUCTION INSPECTION PERSONNEL

ATTACHMENTS Yes [X] No [ ]

DATE: 6-6-83

HOLD TAG # REMOVED

BY _____ DATE _____

REF. HPF/IR NUMBER: N/A

UNIT I [X] UNIT II [X] /LOCATION VARIOUS

CLASS I [X] NON-CLASS I [ ]

INSPECTION CRITERIA: DRAWING [ ] SPECIFICATION [ ] PROCEDURE [X]

DOCUMENT TITLE AND NUMBER: QCP-6A, Rev. 0

DESCRIPTION OF NONCONFORMANCE: (Including Cause)

H.P. Foley's procedure for certification of Quality Control personnel (QCP-6A) was approved and has been in effect since Dec. 7, 1982. Contrary to this procedure, numerous Quality Control personnel have been performing and documenting Class I inspections prior to the issuance of the required certification in their associated work areas.

(Continued on Page 2)

R. Mach 6/6/83
INITIATED BY DATE

Robert A. Carter 6/6/83
Q.C. SUPERVISOR REVIEW DATE

DISPOSITION:

1) Contact previous employers of applicable inspectors to determine experience and levels of Certification.
2) Evaluate previous experience and education to determine appropriate level of certification for each inspector.

(Continued on Page 2)

J R Wilson 6/6/83
DISPOSITION BY DATE

J R Wilson 6/6/83
QUALITY REVIEW DATE

Thomas M. Russell 6-30-83
P.G.& E. CO. DATE

DISPOSITION ACCOMPLISHED

Close to File (date) 11-11-83

V. A. Carney 11-11-83
VERIFIED BY DATE

J R Wilson 11/11/83
Q.C. SUPERVISOR DATE

HPF/NCR 5-20-83

FOR INFORMATION ONLY

D-22

Original

THE HOWARD P. FOLEY COMPANY
NONCONFORMANCE REPORT - CONTINUATION SHEET

NO. 8802-824 Rev 1

CONTINUATION OF: DESCRIPTION OF NONCONFORMANCE ☒
PROPOSED DISPOSITION ☐
DISPOSITION ACCOMPLISHED ☐

PAGE 2 OF 2

DATE 6-6-83

DESCRIPTION OF NONCONFORMANCE: (Including Cause) (Continued from Page 1)

Between 12-7-82 and 3-10-83, it was also noted that Level I inspection personnel did not require a Level II co-signature (Ref. Memo Dated 3-9-83). This Nonconformance encompasses both the H.P. Foley direct inspection personnel and the sub-contracted Cataract personnel (Ref. P.G.& E. Audit 83043A for previous review of Cataract personnel). Due to the two distinctions (Foley/Cataract) the disposition to this Nonconformance should be in two sub-catagories; one for H. P. Foley inspection personnel and the second for Cataract inspection personnel.

NOTE: Original NCR 8802-824 was inadvertantly misplaced.

DISPOSITION INCLUDING MEANS TO PREVENT RECURRENCE: (Continued from Page 1)

3) Reinspect 10% of work of inspectors which cannot be certified to determine acceptability and document results.

4) Through interviews with inspection supervision determine competence and performance level of inspectors whose certifiability is questionable. (See items 2 & 3 above)

5. It is not required that a Level I acceptance or rejection be cosigned by a Level II when no evaluation of results is required.

6) Future screening of potential inspectors will be performed by H. P. Foley's QA Department prior to employment to determine the appropriate level of certification.

Close to File (date) 11-11-83

FOR INFORMATION ONLY

HPF TNCR

PACIFIC GAS AND ELECTRIC COMPANY

245 MARKET STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587
P. O. Box 177
Avila Beach, California 93424
(805) 595-2324

June 14, 1983

H. P. Foley Company
P. O. Box 327
Avila Beach, California 93424

Attention: Paul Bourque
Nuclear Project Director

Diablo Canyon Project
Specification 8802
Welder Qualification and
Production Welding
Superstrut

Gentlemen:

In regards to your questions referencing Specification 8802, Paragraph 6.1, the H. P. Foley Company shall be required to meet the following requirements:

A. The H. P. Foley Company shall meet the requirements of AWS D1.1-75.

B. AWS D1.1-75 does not specify subgrades of A570 material, (i.e. A570 grade A-E, reference section 8) AWS has stated that A570 grade C is considered a material which is prequalified based on its weldability, therefore, you are to consider A570 grade C as part of the group 1 material.

C. Dr. Moss Davis (AWS) agrees that flared single level groove welds shall be considered fillet welds which are prequalified under provisions of AWS D1.1-75.

D. AWS D1.1-75 has no provisions for practical testing of partial penetration flared V-groove welds, therefore, we consider them to be a reasonable facsimile of a partial penetration V-groove weld, which is prequalified.

Due to our concern for meeting the minimum effective throat for this joint configuration, we request the H. P. Foley Company to perform the attached weld test.

DCC 1102

D-23

We request that the H. P. Foley Company revise QCP-5A revision 9, when the test has been completed and accepted.

Sincerely,

D. A. Rockwell
Assistant Project Superintendent

Attachment: Weld Test

PROJECT DIRECTOR'S ROUTING:
Original: File
Copies:
___ P. BOURQUE, Proj. Dir.
✓ S. MOSES, Sr. Proj. Mgr.
✓ G. BROWN, Night P.M.
___ R. WILSON, Qual. Dir.
___ F. LEE, Sched. Mgr.
✓ C. NEEDHAM, Eng. Mgr.
___ J. ROBISON, Asst. P.M.
✓ D. GOGGIN, Struc. Mgr.
___ _____
___ _____
Action By: Wilson/Needham
Date Due: _____

DCC 1302

PARTIAL PENETRATION FLARED V-GROOVE WELD TEST

H. P. Foley Company is required to perform the following production tests to meet qualification requirements for partial penetration flared V-groove welds.

1) Test material shall be "Unistrut" or "Superstrut" made of ASTM 570 grade C material.

2) Test assemblies shall be a minimum of 6" length.

3) Welding shall be done in the flat position (IG).

4) Each classification and diameter of electrodes used in production shall be tested.

5) Test assemblies shall be sectioned in three locations; cut a mid length and one inch from the ends. The one inch ends shall be discarded.

6) Acceptance of the test assemblies is based on obtaining a 1/8" minimum effective throat on all cut surfaces.

To: All Q.C. Inspectors

From: L.R. Wilson

Subject: Existing Work

July 11, 1983

The purpose of this memorandum is to clarify The Howard P. Foley Company's responsibilities relative to the existing facility.

Diablo Canyon has been under construction or modification since 1968. At that time 10CFR50 had not been enacted, the ANSI standards were not conceived and the commercial nuclear industry was in it's infancy. The facility has been constructed to various editions of the codes, all of which have different acceptance criteria than the codes in use today.

The early construction was conducted and inspected in accordance with an approved PSAR and Quality Assurance program which was designed to provide assurance that the work in place was accomplished in accordance with the design criteria. There is no evidence to indicate that the existing facility does not meet the design criteria that it was constructed to.

FOLEY
ELECTRICAL CONTRACTORS

THE
HOWARD P. FOLEY
COMPANY

The Howard P. Foley Company is currently performing modifications to the facility. Our contractual responsibility is obviously limited to the work which we are performing and does not extend to previous work which has been performed by others.

We do not want to dilute our efforts at fulfilling our Contractual responsibilities to the Owner by reviewing history; however, there may be cases where, in the inspection of The Howard P. Foley Company modifications, an item of concern is noted in the existing work.

The Owner has stated that they want us to report conditions which are clearly deficient and would impair the ability of the Plant to function as designed.

In these cases we should report the concern to the Owner. You are expected to utilize your professional judgement and experience when evaluating existing conditions and avoid reporting trivia that does not affect the safe and reliable operation of the plant.

Rick Wilson
Quality Director

D-24

To: All Q.C. Inspectors

From: L.R. Wilson

Subject: Existing Work

July 11, 1983

The purpose of this memorandum is to clarify The Howard P. Foley Company's responsibilities relative to the existing facility.

Diablo Canyon has been under construction or modification since 1968. At that time 10CFR50 had not been enacted, the ANSI standards were not conceived and the commercial nuclear industry was in it's infancy. The facility has been constructed to various editions of the codes, all of which have different acceptance criteria than the codes in use today.

The early construction was conducted and inspected in accordance with an approved PSAR and Quality Assurance program which was designed to provide assurance that the work in place was accomplished in accordance with the design criteria. There is no evidence to indicate that the existing facility does not meet the design criteria that it was constructed to.

FOLEY
ELECTRICAL CONTRACTORS

THE
HOWARD P. FOLEY
COMPANY

The Howard P. Foley Company is currently performing modifications to the facility. Our contractual responsibility is obviously limited to the work which we are performing and does not extend to previous work which has been performed by others.

We do not want to dilute our efforts at fulfilling our Contractual responsibilities to the Owner by reviewing history; however, there may be cases where, in the inspection of The Howard P. Foley Company modifications, an item of concern is noted in the existing work.

The Owner has stated that they want us to report conditions which are clearly deficient and would impair the ability of the Plant to function as designed.

In these cases we should report the concern to the Owner. You are expected to utilize your professional judgement and experience when evaluating existing conditions and avoid reporting trivia that does not affect the safe and reliable operation of the plant.

Rick Wilson
Quality Director

D-25

G/G

PG&E
Quality Assurance 76-675 a
Rev. 1/83

OPEN ITEM REPORT

Sheet 1 of 2

1 IDENTIFICATION: NUMBER 83 – 128 (Year – Sequence) AUDIT NO. 832916A ☐ N/A

INSTRUCTIONS FOR COMPLETING ON BACK OF THIS FORM

2 Reference Requirement(s): H.P.Foley Proc. 17 & ANSI N45.2.9 | Project or Plant(s): Diablo Canyon Power Plant

3 Item or Activity: Maintenance of QA Records - Crit. VI & XVII | Responsible Department: H. P. Foley

4 PROBLEM

Description of Problem: Numerous closed out work request packages are stored in the H. P. Foley vault. No duplicate storage for these records is available. Fire resistant cabinets are provided for storage of a large number of these packages; however, many records are stored in pasteboard boxes temporarily until additional fire (continued)

Suggested Resolution (optional): Provide fire resistant cabinets for storage of the affected records promptly.

5 Initiated by: H. R. Booth | Supervisory Approval: R. T. Twiddy | Date: 8/9/83

TO BE COMPLETED BY RESPONSIBLE DEPARTMENT WITHIN 15 WORKING DAYS OF ITEM 5 DATE

6a ☒ ~~NCR~~/Problem Report Number: MVA E-2677

6b ☐ Problem has been resolved as described in item 7.

6c ☐ Issued to Track Supplier Audit Finding Reports.

6d ☐ For Quality Assurance Department use only:

Assigned to | By | Date

7 RESOLUTION

Action Taken

8 Approved by: [signature] | Date: 10-3-87 | Scheduled Corrective Action Date: 11/22/83

RETURN TO QUALITY ASSURANCE DEPARTMENT

9 VERIFICATION

Assigned to: MSL ☐ N/A | Supervisory Approval: R. T. Twiddy | Date: 8/9/83

10 Results of Investigation/Comments

The Resolution and Corrective Action are Verified as being complete | Date: / /

11 Supervisory Approval | Date: / /

DISTRIBUTION (Other Departments to receive information copy when originated – check below)

☐ V. P., Nuclear Power Generation
☐ Manager, Nuclear Plant Operations
☐ Project Manager
☒ Manager, Quality Assurance
☐ Chief, Engineering Research
☐ Manager, Materials
☐ Plant Mgr. and/or Plant Supt.
☐ Authorized Inspector (for ASME items)
☐ Engineering
☒ Station Construction
☒ Contractor HPF.
☐ Other

D-26

4 - Problem, continued

resistant cabinets are available. It is understood that 10 additional cabinets are on order.

Personnel QA record files are stored in J. Thompson's office (no duplicate storage) in non-fire resistant cabinets.

Current storage of the above described records does not meet requirements of H. P. Foley QA Procedure 17, paragraph 3.6.

PACIFIC GAS AND ELECTRIC COMPANY
ENGINEERING DEPARTMENT

DISCREPANCY REPORT

Control Number
(8)(5) - (0)(4)(1) - (5)

PROJECT OR PLANT(S): Diablo Canyon Unit No. 1 & 2

ORGANIZATION AFFECTED: Pipe Support Design Engineering

INDIVIDUAL RESPONSIBLE FOR RESOLUTION: G.V.Cranston Project Eng.

SUBJECT (ITEM/ACTIVITY): Weld Design, Installation & Inspection

REFERENCES: AWS, AISC, M-9, Pullman Weld Proceedures

DISCREPANCY: See attached sheets (5)

PROPOSED ACTION: Make necessary changes in Design Guides and ESD 223 and Pullman Weld Proceedures to bring them up to AWS requirements for pre-qualified partial & full penetration welds.

SCHEDULED COMPLETION:

Initiated by: Charles A. Stokes Date: 10/5/83

Approved by: M C Ryder Date: 10/7/83

ACTIONS TAKEN: The Diablo Canyon Project has no commitment to observe welding requirements of AWS. The items identified by this discrepancy report duplicate an investigation conducted by General Construction (continue on Page 5 0

CLOSED
Approved by: [illegible] Date: 10-7-83

Concur* GG Date: 10/7/83
Chief, Engineering Quality Control

* Only required if initiated by EQC.

FOA 84-210-27

WELD PROCESS CONCERNING WELD DESIGN, DRAWING DOCUMENTATION, INSTALLATION AND QC INSPECTION.

C.C. STOKES, 10/4/83—Rewritten from 7/5/83 paper.

1. FLARE BEVEL AND FLARE-V GROOVE WELDS DESIGN

Bechtel San Francisco Office-Per Dan Curtis by phone AWS table 2.3.1.4 applied to radius of tube steel obtained from table in a paper entitled "A Designers Guide to Welded Joints" written by: Mark Michaels of maximum outside corner radii 'table 3.3'.

Note: The word maximum radii. This is not good engineering practice. The conservative approach dictates that the minimum radii be used to ensure the safety of the weld joint. It should also be noted that Mark Michaels paper on the design of welded joints has, to my knowledge never been approved by the Engineering Department and issued as a control document to engineering for use on Diablo Canyon.

Bechtel Site-Per a handbook supplied by the tube manufactures institute, all tubing manufactured in the U.S.A. is made or rolled with a radius of 2t to 3t for all sizes. Having assumed 2t to be the minimum, all calculations were made to AWS. table 2.3.1.4 using 2t = R.

Per site investigations, Jeff Van Klompenburg, Ken Palmer and myself discovered some tubing on site (Diablo Canyon) has a minimum radius of 1½ t. Therefore, all welds of this type per this design group are not conservative.

Westinghouse-Through review of drawings issued, their designs are also in question.

2. PARTIAL AND FULL PENETRATION GROOVE WELDS DESIGN

Bechtel San Francisco-Per drawings supplied to field, very few if any are designed correctly. Symbols indicate complete joint welds. This is true for all joints requiring preparation. No angle for preparation has been indicated and it is not obvious that the designer is aware of the mimimum joint requirements per AWS 2.3.12 and Fig. 2.10.1. However, on joints created by natural intersection of 2 members, it is obvious that the joint in many cases is a partial per AWS and not a full penetration weld due to angle created by intersecting members being to small for a full penetration weld to be made.

2,3,1,2 ?

Bechtel Site-One group has tried to comply with AWS. requirements in designating both S and E per 2.1.3 and 2.10.3.1 table 2.10.3 and Fig. 2.10.1 and the included dihedral angle either on preparation or by natural creation of members intersecting. However, Pullman QC have continually refused to check weld per call out because ESD does not provide them with a procedure for performing verification. They have required the (E) effective throat call out to be removed.

Westinghouse-See comments for Bechtel, San Francisco.

3. SKEWED JOINT FILLET WELDS DESIGN

Bechtel San Francisco-Per drawings supplied to field and continued use of fillet all around call out instead of a specific call out adjusting the leg size for the dihedral angle adjustment. It's obvious that the dihedral angle has not been considered in the joint design or if it was, it was done incorrectly.

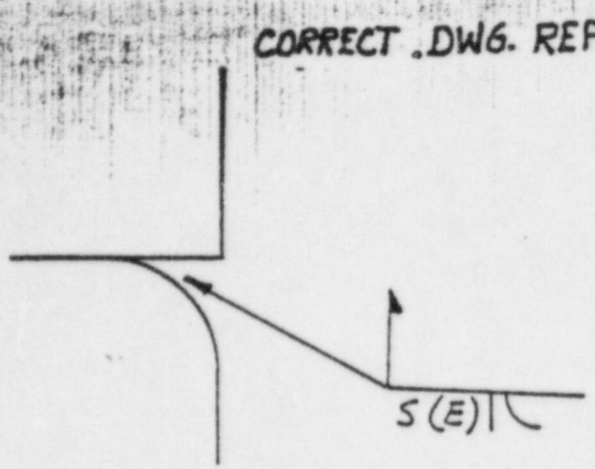
Bechtel Site-One group has tried to be consistent in adjusting the inner and outer fillet leg size based on dihedral angle so that the effective throat on all sides is the same. This allows the joint to be analyzed as though it is an equal leg fillet all around with only a leg adjustment to obtain this when welded. This is shown on drawing, so construction only has to make what is shown and not interpret what is shown using a table which is not usually at hand.

Westinhouse-See Bechtel San Francisco.

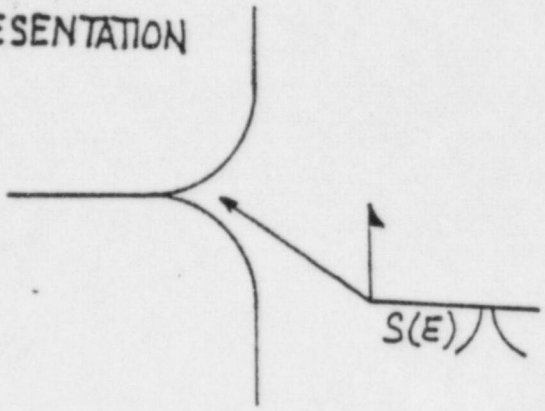
1. FLARE BEVEL AND FLARE-V GROOVE WELDS DRAWING REPRESENTATION

Bechtel San Francisco-No partial welds have been shown since S(E) have been omitted. AWS 2.1.3 and 2.10.3.1 and 2.10.3 state that (S) groove weld depth and (E) effective throat shall be specified on shop or working drawings. The hanger drawings sent to the field are both shop and working drawings. Also, M-9 states that only pre-qualified joints should be used on Diablo Canyon. Many in management contend that this job is not covered by AWS code. However, M-9 states that it is governed by AISC 7th, Ed.. In AISC section on welded joints, page 4-131, paragraph 4, AISC states that small deviations are possible per AWS code and other joint forms and welding procedures may be employed provided they are tested and qualified in accordance with AWS D1.1-72. Therefore, Diablo is governed by AWS D1.1-72.

CORRECT .DWG. REPRESENTATION



FLARE · BEVEL



FLARE-V

S=Radius of tube
E=Effective

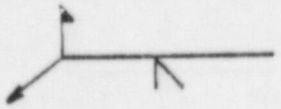
Throat per table 2.3.1.4 AWS

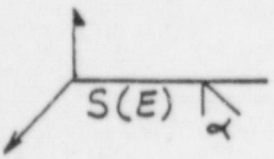
Bechtel Site-One group has complied with call outs above. However, Pullman QC per ESD 223 have required the removal of S (E) from all drawings. This was because the ESD does not provide a procedure for them to use to verify the welds above. The symbols left, after removal of S (E) indicate full penetration welds even though, QC states this is not the case.

Westinghouse-See Bechtel San Francisco.

2. PARTIAL AND FULL PENETRATION GROOVE WELDS DRAWING REPRESENTATION

Bechtel San Francisco-No partial welds are shown since S(E) call outs have been omitted along with preparation angle. Primary weld used is bevel.

Now indicated  Per AWS this is a full penetration weld.

Should show 

With consideration given to AWS section 2.3.1.3 in specifing S(E) and

Bechtel Site-One group on site has tried to comply with the above call out per AWS 2.3.1.3. However, they have meet continued resistance from QC in that the weld specs used for installation were written for piping per AWS chapter 10, Fig. 10.13.1.1A is 37½° differs from the prep angles for structural steel specified in Fig. 2.9.1 and 2.10.1, which usually indicate a minimum angle of 45°.

Westinghouse-See Bechtel San Francisco Comments.

3. SKEWED JOINT FILLET WELDS DRAWING REPRESENTATION

Bechtel San Francisco-Per Drawings are shown as fillet all around for all angles. Per AWS fillets are limited to a minimum dihedral angle of 60° and a maximum external dihedral angle of 135°. All fillet made beyond these angles are considered partial penetration welds since AWS requires a reduction of effective throat of 1/8" when angle is less than 60° and greater than 45° and ¼" reduction when less than 45° but greater than 30°. 30° is the minimum dihedral angle for structural steel except tube steel which has a minimum angle of 15°. Per ESD 223 the leg is adjusted for dihedral angle but no increase has been added to account for throat reduction required by design resulting in adequate effective throats per AISC and AWS.

Bechtel Site-One group has considered dihedral angle. To facilitate design, joint was sized assuming a constant effective throat size. After sizing effective throat requirements then using dihedral angle the 2 non 90° sides were adjusted so that the installed effective throats would be correct per design. Fillets are not called out when dihedral angles are less than 60°. Partial penetration welds are shown.

1)2)3) INSTALLATION AND QC INSPECTION

All installation has been made per Pullman's weld procedures. Per a copy obtained from Pullman QC of these procedures. These procedures as written state that they are for the installation of pipe and pipe attachments. No mention is made of their use in installation of pipe supports. All prep angles and joint details are written for pipe, no notes or modifications are indicated for their use in installing pipe support steel. QC has been supplied with these procedures and ESD 223 to inspect pipe support welds. They have been supplied no information as to the correct installation of pre-qualified joints per AISC or AWS. Furthermore, per ESD 223, they have been instructed to check some weld joints and not others.

A joint formed by flare-bevel or flare-v welds on all sides such as 2 tubes crossing does not require checking and per ESD 223 when the size of a flare-bevel or flare-v is shown, the method of weld measurement per ESD 223 does not supply the effective throat or any dimension which can be used to determine the effective throat.

Per attachment I of ESD 223, no limitation are indicated for structural or tube steel dihedral angles. AWS gives the minimum dihedral angle 30° for structural and 15° for tube steel. Also no throat increase is included to compensate for required throat reductions based on dihedral angle per AWS 2.3.1.3.

Per attachment J of ESD 223, of what use is the measurement of S ? Per AWS unless S=R. R=Radius of tube, E can not be determined through use of table 2.3.1.4. Also upon review of this attachment and table of maximum radii of tube steel in paper by Mark Michaels, it can be shown that table J was and is based upon the maximum radius and not the minimum resulting in a non-conservative design.

ACTION TAKEN: and Engineer. The resolution of this issue was monitored by Project QA. See chron No's 023208, 024230, 031964 and 033851 plus attached QA " Work plan and log" sheets in which no discrepancy was noted.

(12)

BECHTEL WORK PLAN AND LOG

1. JOB NUMBER	2. PERIOD FROM TO	3. ASSIGNED OAE
15320	6-27 TO 7-8-83	J.W. CARSON

4. ITEM NO.	5. ACTIVITY	6. REFERENCE(S)	8. DATE CMPT
#1	MONITORING ACTIVITY -		
	DESIGN DEFICIENCY TREND		
	ANALYSIS	@ADM, SEC. C. NO. 20 REV. 0	CONTINUE
#2	MONITORING ACTIVITY -		
	PREPARE/VERIFY RESPONSES		
	TO MANAGEMENT AUDIT		
	OF-317.	@ADM, SEC. B. NO. 7, REV. 5	CONTINUE
#3	MONITORING ACTIVITY -		
	FOLLOW UP ON MEMO		
	CRON-[redacted] DATED		
	6-10-83	@ADM, SEC. C. NO. 1, REV 1.	CONTINUE

NOTE: REFER TO ABOVE ITEM NUMBER WHEN MAKING ADDITIONAL COMMENTS BELOW

7. COMMENTS ON ITEMS ABOVE:

#1. NO TRENDS IDENTIFIED THIS REPORTING PERIOD.

#2. THIS MONTHS STATUS REPORT TO BE PREPARED BY P. HORNBECK.

#3 UNIT #2 IS COMPLETE WITH NO DISCREPENCIES. UNIT #1 MATERIAL TURNED OVER TO M. GUZMAN.

DCN'S REVIEWED FOR UNIT #2 - 412-8R-6716, REV. 0, 412-13SL-6718, REV. 0, 412-25SL-6881, REV. 0, 412-37SL-8112, REV. 0, 412-53SL-8254, REV. 0, 412-63SL-12121, REV. 0, 412-70SL-8673, REV. 0, 412-77SL-12124, REV. 0, 412-142SL-10135, REV. 0, 412-146R-8853, REV. 0, 413-26A-10257, REV. 0, 413-29SL-8045, REV. 0, & 414-28SL-6663, REV. 7.

9. SIGNATURE	DATE	10. REVIEWED BY	DATE
J. Carson	7-8-83		

IF ADDITIONAL COMMENT SPACE REQUIRED - USE THE BACK OF THIS SHEET - BE SURE TO REFERENCE COMMENTS BY ITEM NUMBER

BECHTEL

WORK PLAN AND LOG

1. JOB NUMBER	2. PERIOD FROM	TO	3. ASSIGNED QAE
15320	8/15/83	8/26/83	Manuel G. Guzman

4. ITEM NO.	5. ACTIVITY	6. REFERENCE(S)	8. DATE CMPT
1	monitoring [illegible] per memo CAJ-[illegible] 6/10/83) on pipe support weld requirement for AISC	QADM SECT C NO 1 REV 1	8/26/83
2.	U-Bolt calculation verification	QADM SECT C NO 1 REV 1	8/26/83
3.	Engineering Audit 3.2-4 - Design Calculation Unit 2	NQAM VI-1	continuing

NOTE: REFER TO ABOVE ITEM NUMBER WHEN MAKING ADDITIONAL COMMENTS BELOW

7. COMMENTS ON ITEMS ABOVE:

1 - Unit No 1 is complete with no discrepancies. Pipe supports REVIEWED for Unit 1 were the ff: 56N-131R REV 4, 235-136R REV 1, 12-180SL REV 0, 98-150A REV 3, 10-117SL REV 3, 2-21R REV 2, 10-28SL REV 4, 13-46SL REV 2, 99-6R REV 0.

2 - Verified that calculation 5-2 File No 52.23.1 titled all rod & U-Bolt pipe whip restraint was approved as revision 0 on 6/13/83.

3 - to be continued in the next time period.

9. SIGNATURE	DATE	10. REVIEWED BY	DATE
Manuel G. Guzman	8/31/83	M. J. Jacobson	9-1-83

IF ADDITIONAL COMMENT SPACE REQUIRED—USE THE BACK OF THIS SHEET—BE SURE TO REFERENCE COMMENTS BY ITEM NUMBER

SFP 20879 Rev (11/76)

INTEROFFICE CORRESPONDENCE

DATE	September 20, 1983
TO	WPS Manual Holders
FROM	H.W. Karner, QA/QC Manager
SUBJECT	GENERAL WELDING STANDARD.

What individual WPS was used for flare bevel joint prior to issuance of the GWS in Sept 1983 It was issued by Pullman on 8/29/83

~~Recently (September 8,~~ 1983) a new section entitled "General Welding Standard" was added to the Welding Procedure Specification Manual.

As stated in the scope of the GWS it is to be used to supplement the individual WPS's. This means that the joint details shown in the WPS and the GWS are acceptable for use.

~~The joint details shown in the GWS are not to be used for AWS welding, namely Rupture Restraints and work to PG&E Specification 8833XR.~~

H.W. Karner

H.W. Karner
QA/QC Manager

HK:jg

FOR INFORMATION ONLY

D-28

Pullman Power Products

PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	GWS DOCUMENT NO. ISSUE DATE: 6-29-83
DIABLO CANYON NUCLEAR POWER PLANT	TO BE USED ONLY ON JOB # 7177	PAGE NO. COVER SHEET

TITLE: GENERAL WELDING STANDARDS

LATEST REV. DATE 6-29-83

APPROVAL (AS NOTED)

- ☐ Approved as to Substance
- ☐ Subject to Notations Shown
- ☐ Not Approved
- ☐ Revised Drawings Required
- ☐ Furnish Reproducibles
- ☒ Approved for Constr.

Resident Engineer _____

By _____ Date 9/8/83

PACIFIC GAS & ELECTRIC CO.
Diablo Canyon

PULLMAN POWER PRODUCTS

HEADQUARTERS AT

WILLIAMSPORT, PENNSYLVANIA

QUALITY CONTROL
DIABLO CANYON
REVIEWED & APPROVED

_____

DATE 9/8/83

REVISION	PREPARED BY	APPROVED BY	INITIALS	DESCRIPTION
6-29-83 ECC	M. MacCrae	H. Karner	HK	Initial Issue This GWS "General Welding Stanard" supplements a series of individual Welding Procedure Specifications and will be distributed as part of these specifications.

FOR INFORMATION ONLY

Pullman Power Products		GWS SECTION NO.
PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	DATE: 6-29-83
GENERAL WELDING STANDARDS	TO BE USED ONLY ON JOB# 7177	PAGE NO. 1 of 10

1.0 SCOPE

1.1 This General Welding Standard for joint details ~~supplements a series~~ of individual Welding Procedure Specifications (WPS's). Each WPS is qualified in accordance with ASME Section IX.

1.2 ~~Included in this standard are the typical joint details and their~~ allowable variations for pipe welds, pipe hanger member welds and pipe attachment welds.

1.3 This standard applies to all WPS's with the exception of AWS welding procedure specifications.

2.0 JOINT CONFIGURATIONS

2.1 Weld end preparations shall conform to one of those on the following pages, as applicable. For pipe to pipe joints. both sides shall conform to the pipe side of the applicable configuration and thickness. All welds shall be made in accordance with the position and other variables given in the applicable WPS.

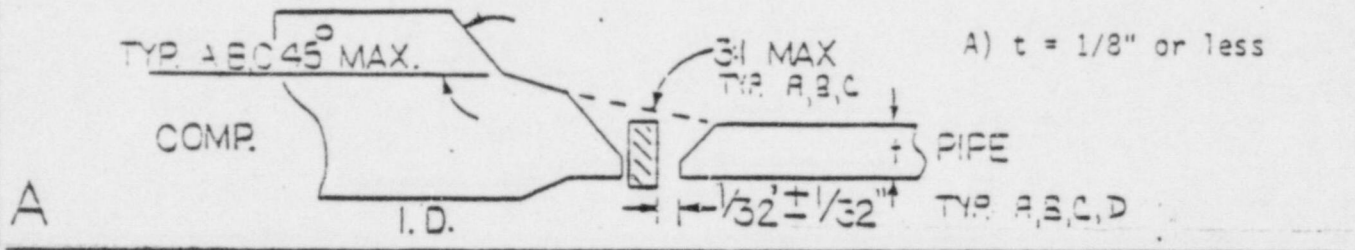
2.2 Pages 9 and 10 contain miscellaneous joint configurations that shall only be used for pipe hangers and attachment welds. within the remaining variables specified on the applicable WPS.

Pullman Power Products		GWS SECTION NO.
PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	DATE: 6-29-83
GENERAL WELDING STANDARD	TO BE USED ONLY ON JOB# 7177	PAGE NO. 2 of 10

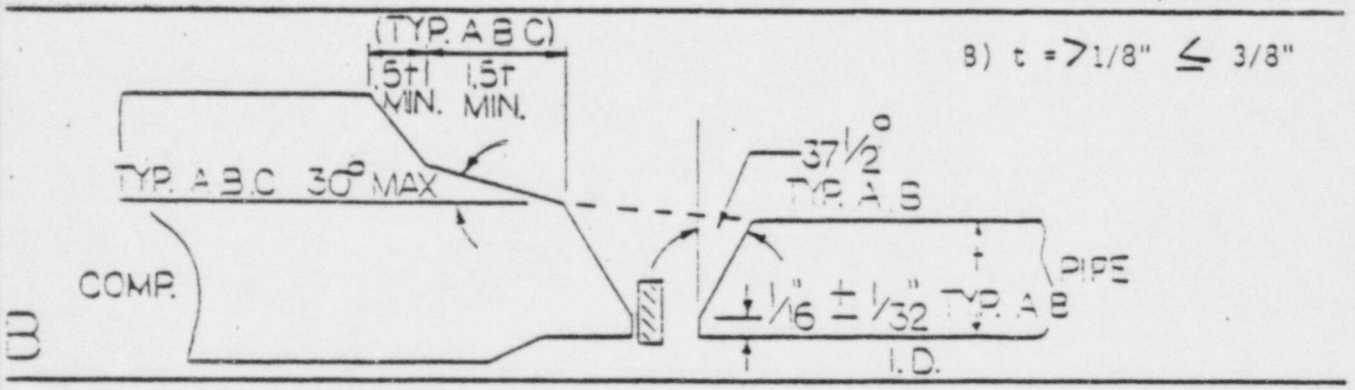
K-Insert (KI)

t = Wall Thickness
Y max = The Greater of t + .15 or 1.15t
C = Counter bore
X = 3/16" minimum

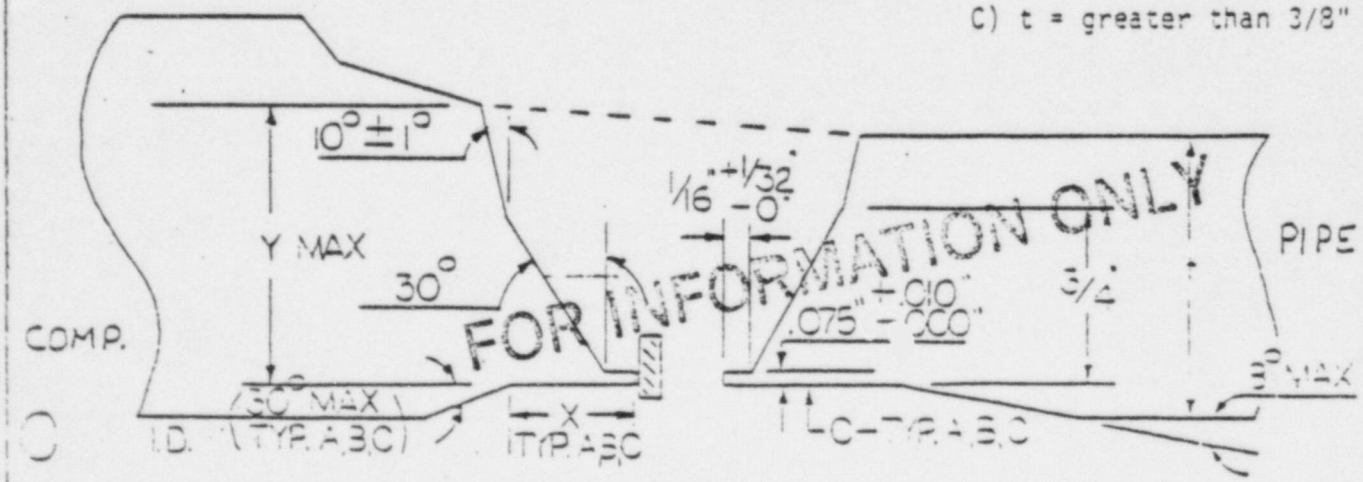
A) t = 1/8" or less



B) t = > 1/8" ≤ 3/8"



C) t = greater than 3/8"

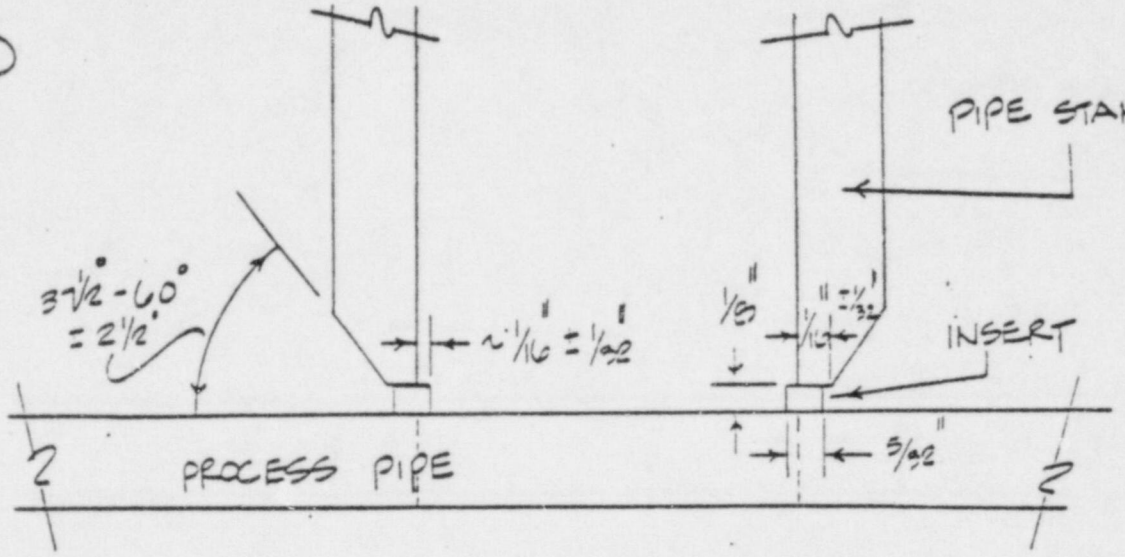


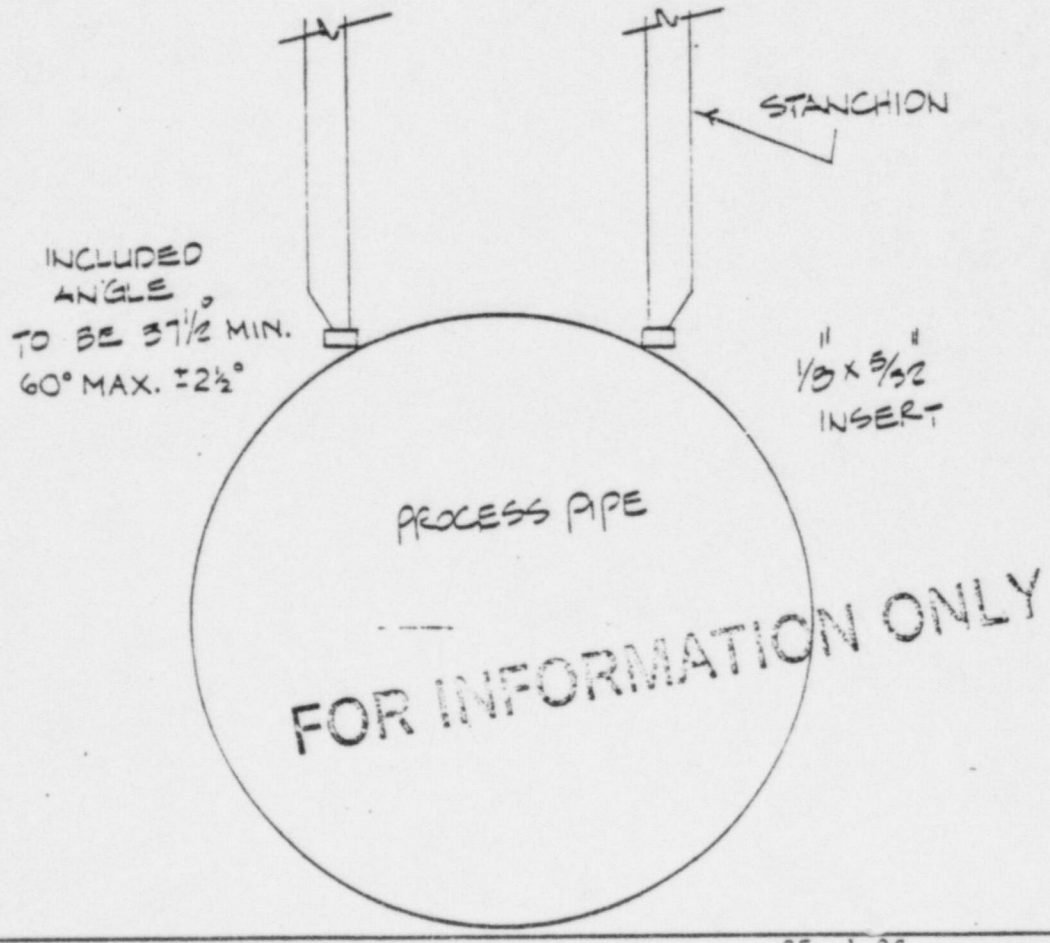
NOTES: 1) All Weld Bevel Degree Measurements are ± 2½°, except as noted.

2) The K-Insert is a standard 1/8" X 5/32" with a slight radius on the edges.

Pullman Power Products		GWS SECTION NO.
PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	DATE: 6-29-83
GENERAL WELDING STANDARD	TO BE USED ONLY ON JOB# 7177	PAGE NO. 3 of 10

D



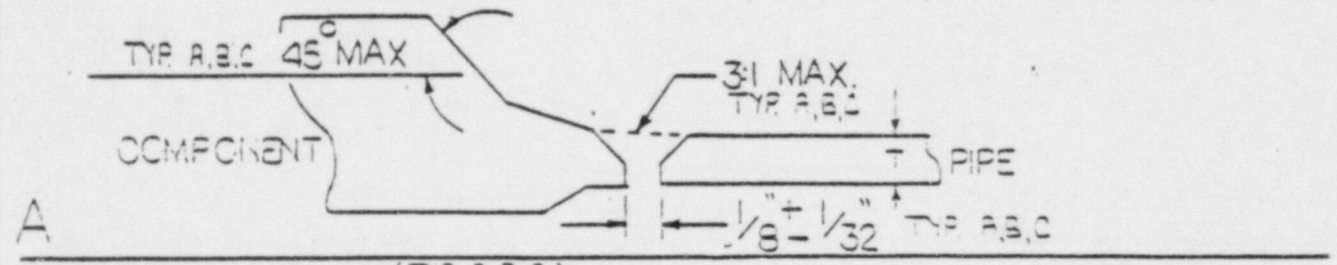


Pullman Power Products		GWS SECTION NO.
PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	DATE: 6-29-83
GENERAL WELDING STANDARD	TO BE USED ONLY ON JOB# 7177	PAGE NO. 4 of 10

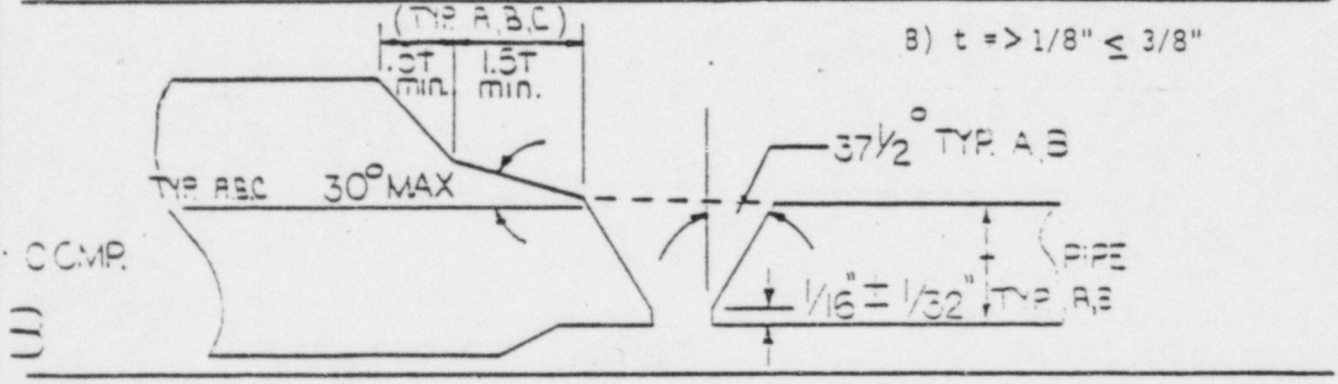
Open Butt (OB)

t = Wall Thickness
Y max = The greater of t ± .15 or 1.15t
C = Counter bore
X = 3/16" minimum

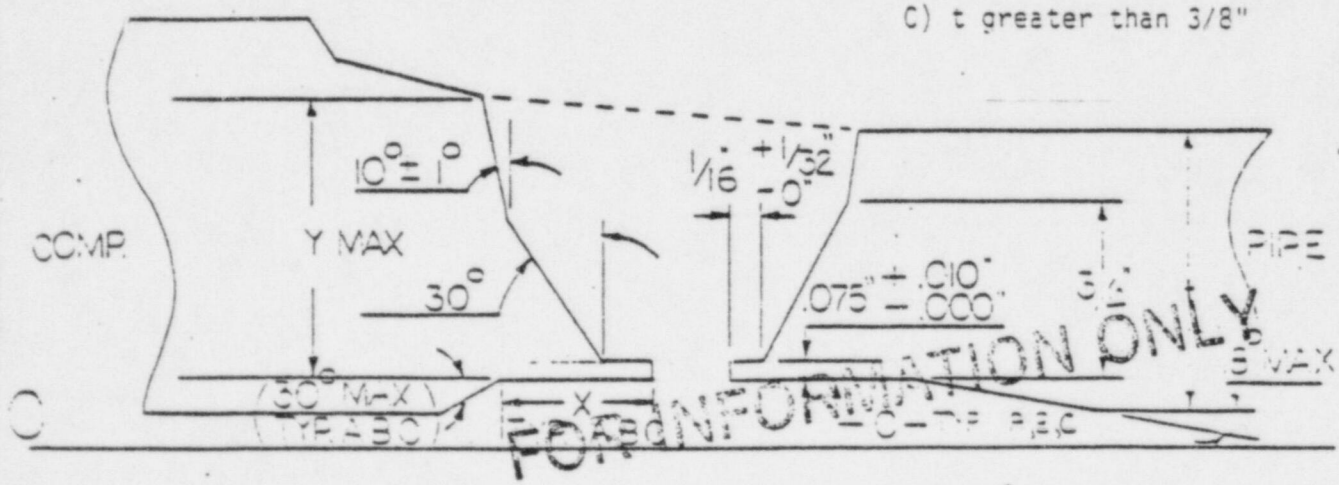
A) t = 1/8" or less



B) t => 1/8" ≤ 3/8"



C) t greater than 3/8"

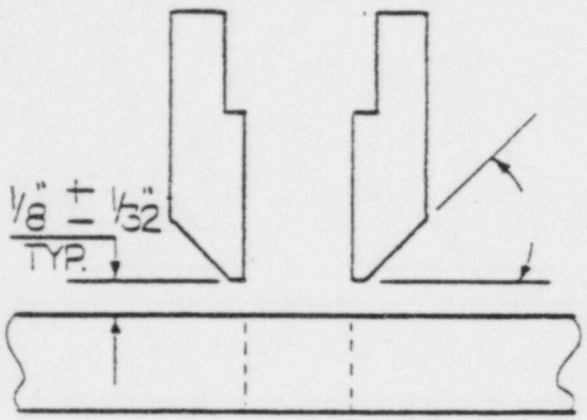


NOTES: 1) All Weld Bevel Degree Measurements are ± 2½°, except as noted.
2) If E7018, E8018 or E9018 are used for the root, the backside must be removed to sound metal and rewelded.

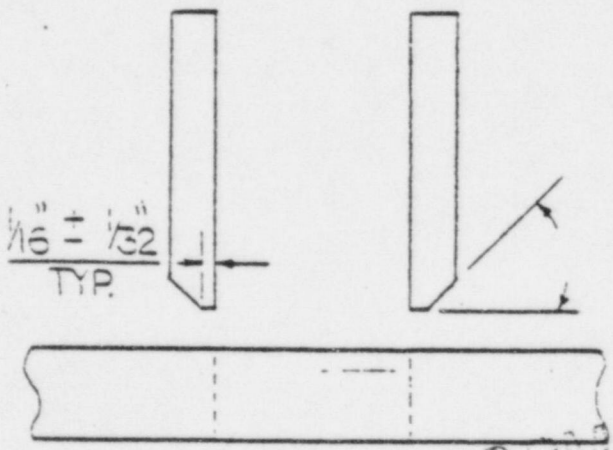
Pullman Power Products		GWS SECTION NO.
PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	DATE: 6-29-83
GENERAL WELDING STANDARD	TO BE USED ONLY ON JOB# 7177	PAGE NO. 5 of 10

OPEN Butt (Continued)

D. Branch Connections and stanchions



37½° min
60° max ±2-1/2°



37½° min
60° max ±2-1/2°

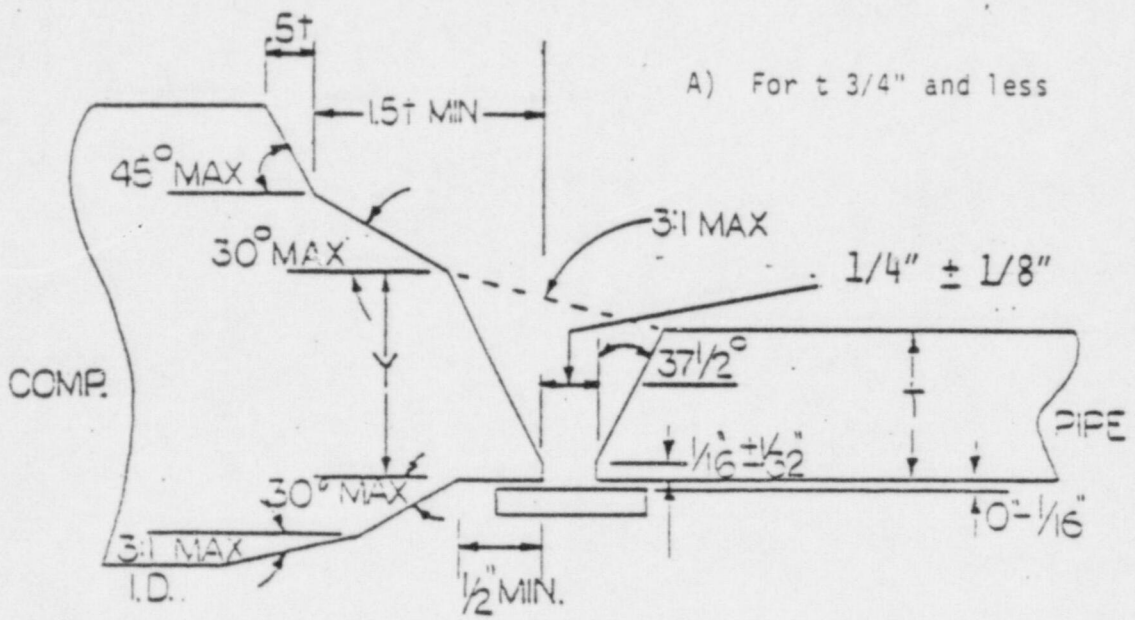
NOTE: 1) If E7018, E8018 or E9018 are used for the root the backside must be removed to sound metal and rewelded.

SF 1.0

Pullman Power Products		GWS SECTION NO.
PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	DATE: 6-29-83
GENERAL WELDING STANDARD	TO BE USED ONLY ON JOB# 7177	PAGE NO. 6 of 10

Backing Ring (BR)

t = Wall Thickness
Y = The Greater of t ± .15 or 1.15t



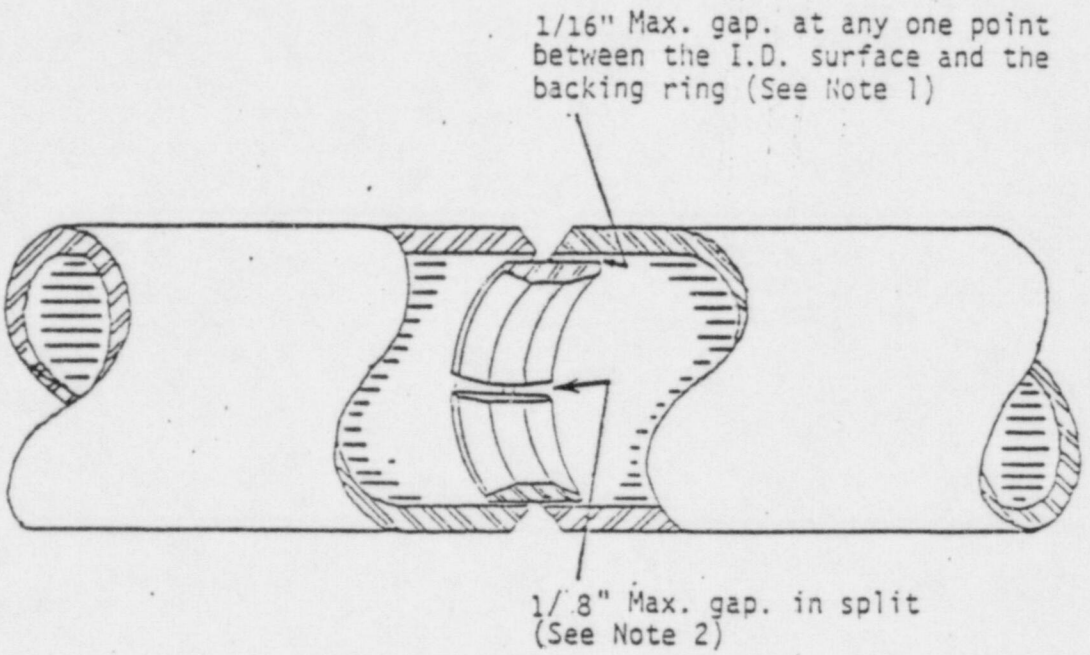
A) For t 3/4" and less

NOTES: 1) All Weld Bevel Degree Measurements are ± 2½°.

FOR INFORMATION ONLY

Pullman Power Products		GWS SECTION NO.
PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	DATE: 6-29-83
GENERAL WELDING STANDARD	TO BE USED ONLY ON JOB# 7177	PAGE NO. 7 of 10

Backing Ring (BR) (Cont'd)



NOTES:

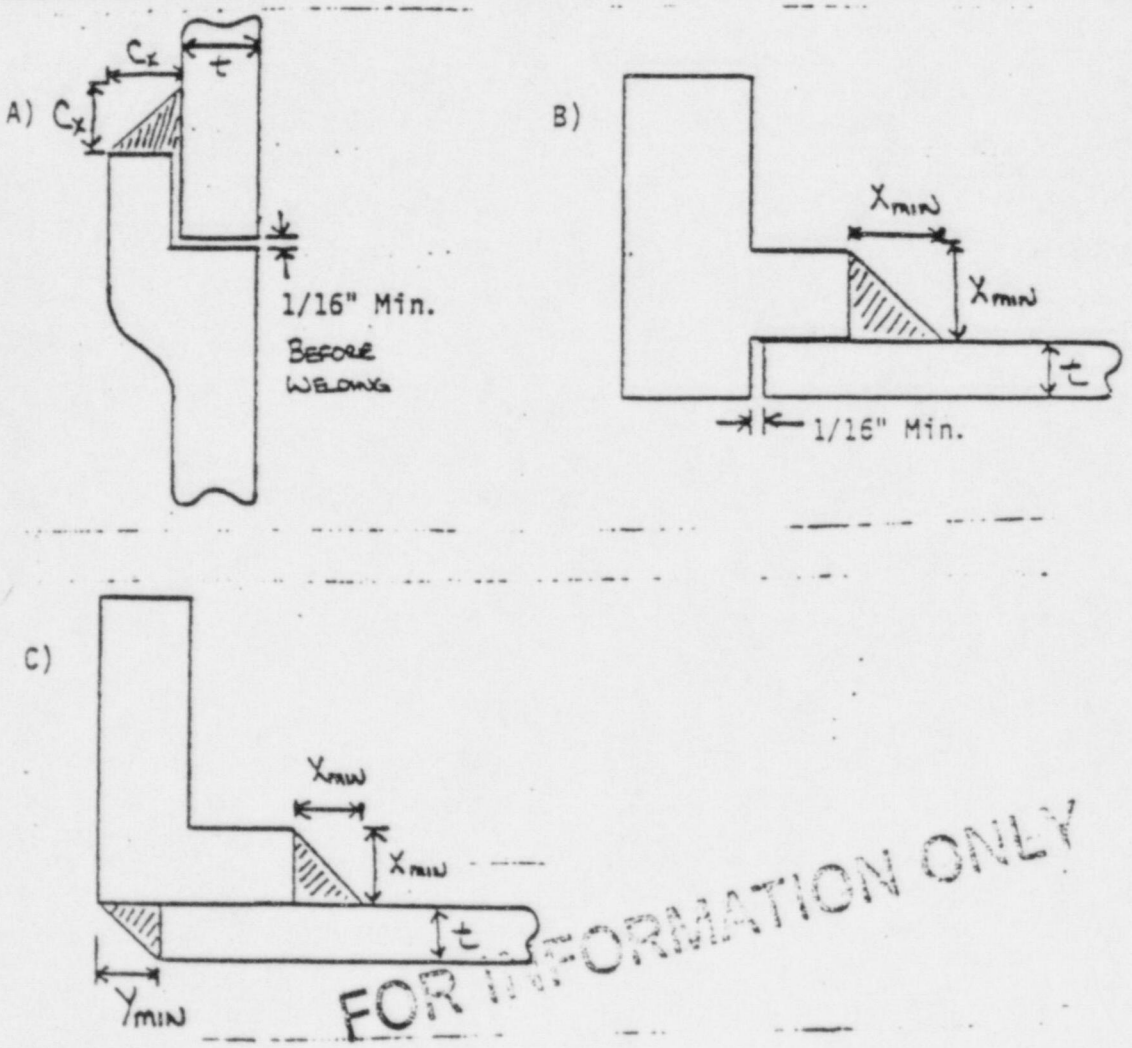
1. A uniform mismatch of 1/32" max. all around the joint, is acceptable.

2. If this dimension cannot be held, a flanged ring should be used and cut to fit, or multiple rings may also be used. If multiple rings are used junction point must be seal welded and ground clean prior to final fit-up; 1/8" Max. gap in split still applies - it also must be seal welded and ground clean prior to final fit-up.

Pullman Power Products		GWS SECTION NO.
PREPARED BY: R. G. Fink	APPROVED BY: R. G. Fink	DATE: 6-29-83
GENERAL WELDING STANDARD	TO BE USED ONLY ON JOB# 7177	PAGE NO. 8 of 10

Socket & Fillet Welds

t = Minimum Wall
X Min = the smaller of 1.4 t or thickness of hub but not less than 1/8"
Cx = 1.25 t but not less than 1/8"
Y Min = The smaller of t or 1/4"

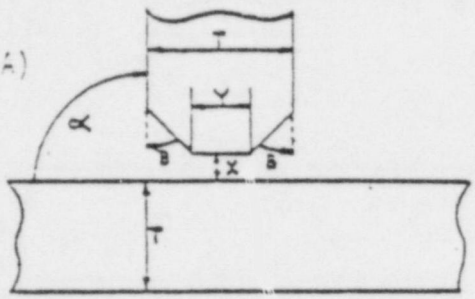


Pullman Power Products		GWS SECTION NO.
PREPARED BY: M. MacCrae	APPROVED BY: H. Karner	DATE: 6-29-83
GENERAL WELDING STANDARD	TO BE USED ONLY ON JOB# 7177	PAGE NO. 9 of 10

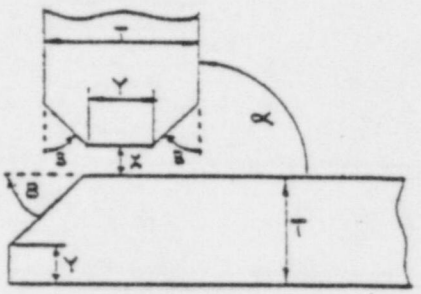
Pipe hanger member welds and pipe attachment welds - The parameters of the joint configurations below may vary as follows:

T = a) Maximum qualified thickness of WPS
    b) Unlimited for fillets
= B = 0 - 90
X = 0 - 3/16
Y = 0 - T Based on Full or Partial Pen Requirements

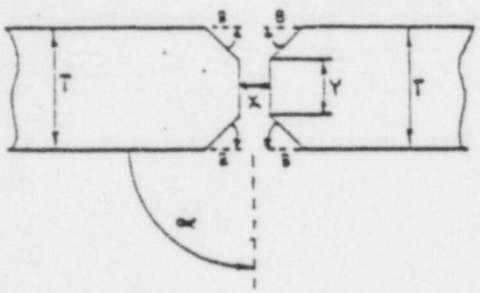
A)



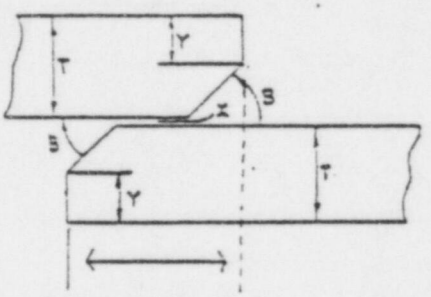
C)



E)



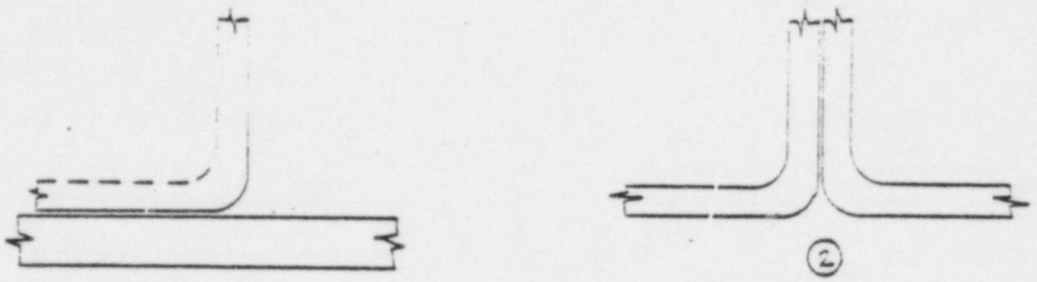
D)



As specified by design

NOTES: 1) The actual beveled area may be prepared as a:
A. Straight Bevel
B. Double Bevel
C. J-Bevel
D. U-Bevel
E. Flanged (T Bead)
F. Other within above limits
G. For welds with backing X shall be 0-3/8"

E. Flare Bevel (2), partial penetration weld (tube steel, flange ends, angle iron, etc.)



NOTE: 1. No weld edge preparation is required.
2. Maximum Reinforcement to be specified by design if not noted Finish to be Flush.

037390

INTEROFFICE MEMORANDUM

Diablo Canyon Project

PACIFIC GAS AND ELECTRIC COMPANY
BECHTEL POWER CORPORATION

To R.D. Etzler

From G.V. Cranston

Of SFPD/Project Engineering

At 221/15/B1 Extension 8-1658

Date November 17, 1983

File No. 929, CA-2

Subject Welding on Two Parallel Sides of Structural Tube

ATTENTION: D.A. Rockwell

The weld symbol shown in Sketch No. 1 of the attachment has often been used with the welding of structural tubing. This weld should be interpreted to include the corners of the structural tubing as shown in the Sketch No. 2 of the attachment.

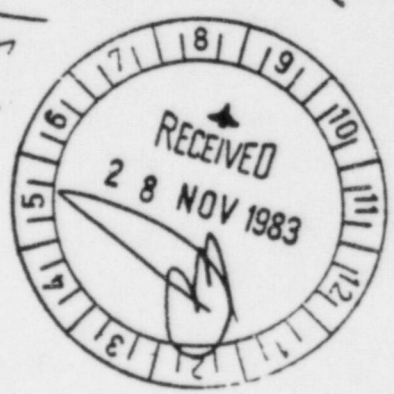
For pipe supports already constructed with such welds and for which as-built drawings have not yet been issued, please mark on the as-built drawings the actual weld lengths L_1 and L_2 as shown on Sketch No. 3 of the attachment.

As built drawings issued after November 28, 1983, without reference to weld length, will be interpreted as if the welds include the corners of the structural tubing. Please note that this is not a retroactive requirement. Pipe support as-builts issued before November 28, 1983, which may be affected by this symbol interpretation, will be evaluated by Engineering on a case-by-case basis and, if needed, additional as-built information will be requested.

Please acknowledge receipt of this welding clarification by November 28, 1983.

10.6

G.V. Cranston
Project Engineer
Unit 2



Response Required: Yes
Response Due Date: November 28, 1983
HSAmin/SCSaha:bjm
Attachments: Welding Details (One Sheet)

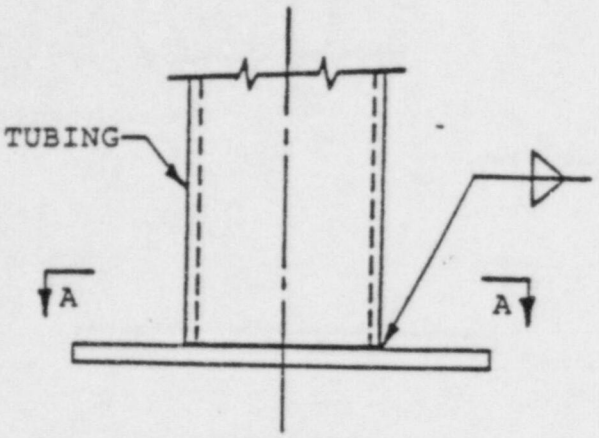
cc: PGAntiochos (w/a)
EHJadelrab (w/a)
MELeppke (w/a)
JALongworth (w/a)
LMangoba (w/a)
WManegold (w/a)
JRManning (w/a)
VPMercado (w/a)
TQuan (w/a)
JWShryock (w/a)
GThomas (w/a)
PWerts (w/a)

D-

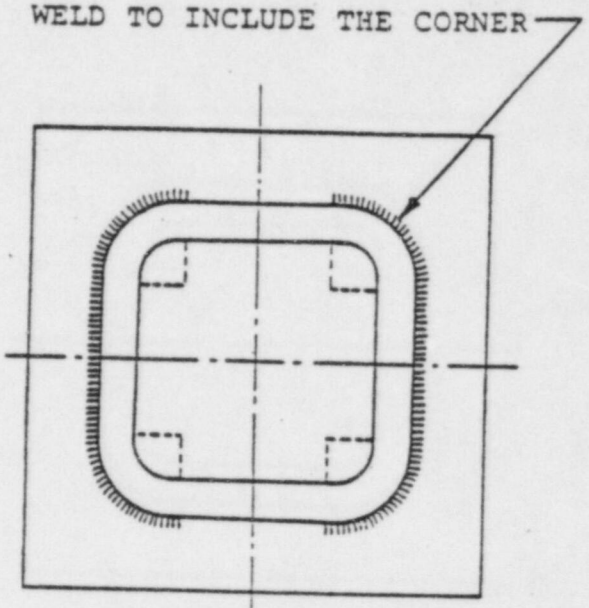
DCC 003929

[42MemoM1]

ATTACHMENT

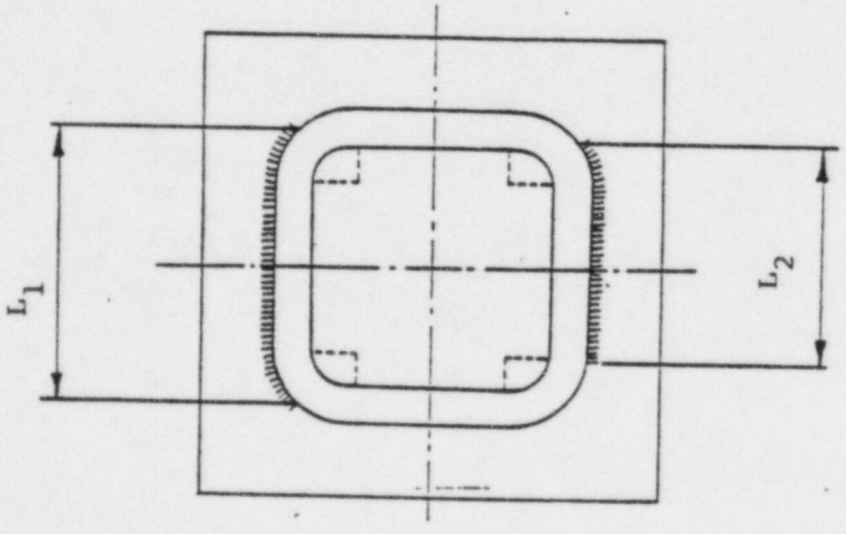


ELEVATION
SKETCH#1



SECTION A-A
SKETCH #2

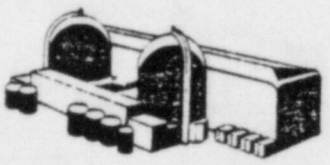
FOR EXISTING WELDS, THE AS-BUILT SHALL SPECIFY THE ACTUAL WELD LENGTH L_1 & L_2



SECTION A-A
SKETCH #3

INTEROFFICE MEMORANDUM

Diablo Canyon Project



PACIFIC GAS AND ELECTRIC COMPANY
BECHTEL POWER CORPORATION

To M. Leppke

Date December 5, 1983

From D.J. Curtis

File No. 925

Of Onsite Project Engineering Group

Subject Weld Inspection

At Jobsite Extension 3064

This memo is to document our conversation this morning. Per conversations with H. Karner, Pullman Power Products QA/QC Manager, and K. Palmer (PTGC) ESD 223 Sections 1.1.1, 4.1, 6.1.4.1 and 6.8.2.3, and the weld processing sheets, Pullman QC Reverifications are made of weld sizes by Pullman Power Products during the as-building process.

Thank you,

D.J. Curtis

DJCurtis/jb

Reply Requested: No

Attachments: None

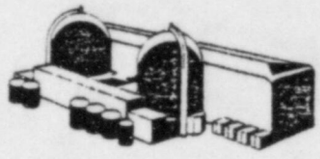
cc: H. Karner (PPP)
K. Palmer (GC)
L. Mangoba (OPEG)
S. Chitnis (SFHO)

SPE - 0426

D - 30

INTEROFFICE MEMORANDUM

Diablo Canyon Project



PACIFIC GAS AND ELECTRIC COMPANY
BECHTEL POWER CORPORATION

To M. Leppke

From D.J. Curtis

Of Onsite Project Engineering Group

At Jobsite Extension 3064

Date December 5, 1983

File No. 925

Subject "A Designers Guide to Welded Joints" by M. Michaels

This memo is to document our conversation this morning. Per that conversation I confirmed to you that Mark Michaels paper entitled "A Designers Guide to Welded Joints" was not used as a design document and had a very limited distribution.

Mark Michaels originally prepared this paper as a training exercise. It's purpose was to increase his welding knowledge. It had been submitted to Engineering (SFHO) for approval and possible incorporation into a contemplated support manual that was being considered in September of 1982. This draft paper was not approved by Engineering due to some irregularities that had been identified in the paper and distribution of the paper was not made.

Thank you,

D.J. Curtis

DJCurtis/jb

Reply Requested: No

Attachments: None

cc: S. Chitnis (SFHO)
L. Mangoba (OPEG)
V. Juneja (SFHO)

SPE -0425

D-31

ORIGINAL

CORRECTIVE ACTION REQUEST No. 004

ISSUED TO: Howard P. Foley Company

Rick Wilson
Responsible Production
Management & Discipline

ISSUED BY: J. Rothstein, QA Supervisor
H.P. Foley Q.A. Personnel Title

01-11-84
Date Initialed

02-11-84
Date Response Due

REQUIREMENT: (State Document, Section and Paragraph and Requirement Violated)
QP-5422-6 REV. 0, Paragraph 5.6 ..."Certification form, HPF/QC (Exhibit B) shall be used to document the type of certification for each individual."
QCP-6 REV. 4, Paragraph 4.2.5.2 "Personnel certifications shall be documented..."

DEFICIENCY: (State Deficiency, Items Involved, etc.)
Contrary to the above requirement, inspection personnel were not issued written certifications prior to performing inspection activities.

RECOMMENDED CORRECTIVE ACTION:
Review and evaluate personnel to determine if they were certifiable under the procedure in effect at the time.

J R Wilson 1/11/84
Q.D. Approval for Issuance Date

J R Wilson 1/11/84
Representatives Acknowledgement Date

MANAGEMENT RESPONSE: (State cause of deficiency and Corrective Action)
Review of personnel records indicated that during this time frame of the newly imposed procedure requirements for written certifications, the written certifications apparently lagged behind the actual time of qualification, (CONTINUED ON PAGE 2)

Date Corrective Action to be Completed N/A JRWilson

Approved Not Approved

Jon Rothstein 1/11/84
Representative Responding Date

J R Wilson 1/11/84
Q.D. Review Date

IMPLEMENTATION OF CORRECTIVE ACTION ____Satisfactory Unsatisfactory

COMMENTS: INFO...

HPF/CAR

THE HOWARD P. FOLEY COMPANY

ORIGINAL

CORRECTIVE ACTION REQUEST
CONTINUATION SHEET

NO. 004

DEFICIENCY
RECOMMENDED CORRECTIVE ACTION
MANAGEMENT RESPONSE
IMPLEMENTATION OF CORRECTIVE ACTION

PAGE 2 OF 2

DATE 01-11-84

MANAGEMENT RESPONSE: (CONTINUED FROM PAGE 1)

and in some cases were never issued, however the ultimate responsibility for keeping personnel informed of Quality Requirements rested with the supervision directly responsible for the individual. Personnel newly hired were advised of all the Quality Requirements pertinent to their intended area of activity prior to their beginning work. Also, re-evaluation of personnel records revealed that the personnel were certifiable in accordance with the procedures in effect at that time prior to performing inspection activities.

No Corrective Action is required. Current procedures are being strictly adhered to and documentation is in order.

Inspector	Dates of Employment	Education	Experience	Certifications Issued/Date
J. Nighswanger	4-1-81 to 1-22-82	High School	5-73 - 12-79 Inspector, Continental Can	Civil No Level 6-2-81 Elect. No Level 11-6-81
S. Ryan	9-3-78 to present	High School AAS, Welding Tech.	9-78 - 5-80 Q.C.Inspector, H.P.F. 5-80 Present Mechanical Inspector, H.P.F.	PT Level I 5-21-81 PT Level II 11-3-81 Civil No Level 4-20-81 Mech. No Level 4-21-81
R. Simas	4-6-81 to 9-20-82	High School AAS, Welding Tech.	6-75 - 8-75 Welder, Caetana Co. 4-77 - 9-79 Machinery maintenance, United Lumber Co.	Mech. No Level 6-3-81
G. Stephen	8-3-78 to 7-11-80	High School	2-77 - 7-77 Q.C. Inspector, Chemtrol Corp. 10-77 - 7-78 Q.C. Inspector, Tech-Sil Corp.	None
A. Twiddy	4-28-81 to 9-7-83	High School	6-80 - 11-80 Maintenance Asst. Crstwood Manor 1-79 - 5-79 Laborer, Ross Co. 6-78 - 9-78 Painter, PG&E	Mech. 7-6-81 Civil 7-20-81 Mech.Weld 7-7-82
O. Vogt	7-17-77 to 8-11-80	High School	1-75 - 10-76 Q.C. Inspector,S&Q 3-74 - 10-74 Q.C. Inspector,PDM 10-68-12-73 Q.C. Director, San Bernadino Materials Co. 7-65 - 10-68 Quality Eng., Aero Jet Co. 1958-1965 Q.C. Inspector,Aero Jet Co.	PT Level II 4-17-78

INFORMATION ONLY

Inspector	Dates of Employment	Education	Experience	Certifications Issued/Date
R. Boase	11-27-78 to 10-8-80	High School	1939-1972 Aircraft Technician & Testing - Assume 10% of time spent for testing & examination. 33-3.3 years related experience	None
R. Churchman	5-12-80 to 8-23-82	High School	1975-1979 Residential remodeler plumbing and electrical.	Mechanical - No Level 4-20-81 Civil - No Level 4-21-81
L. Clover	9-30-76 to 8-15-77 2-20-78 to 9-6-79	High School B.S. Degree	8-76 - 2-78 Field Clerk, HPF 2-78 - 7-79 Q.C. Inspector, HPF	None
H. Easton	9-24-80 to 5-28-81	High School B.S. Degree	8-78 - 10-79 Asst. Field Eng., L.K. Comstock 8-76 - 8-78 Laborer, Howard Elect.Co. 6-75 - 12-75 Eng. Clerk, NPS Const. Co.	Mech No Level 4-20-81 Elec No Level 4-21-81
K. Moses	2-4-80 to 5-6-80	High School	N/A	Performed no independent inspection (Trainee)

DATE OF:
01-04-84

SUPPLIER NAME AND LOCATION	DATE OF QUALIFICATION	PRODUCT(S) OR SERVICE(S) QUALIFIED FOR:	DATE OF EXPIRATION	COMMENTS
A&G Engineering Co., Inc. 4640 East LaPalma Ave. Anaheim, Calif. 92806	7-18-83	Manufacturer of ferrous and non-ferrous bolting at this location only.	6-11-85	
Alloy Rods/Chemtron Corp. Wilson Ave. Hanover, PA. 17331	7-20-83	Manufacturer of ferrous and non-ferrous welding and brazing material at this location only.	9-8-84	
Anchor Packing Co. 22600 S. Avalon Carson, Calif.	7-18-83	Anchortite gasket material.	Upon Notification by P.G.& E.	
Allied Nut & Bolt King of Prussia, PA.	8-15-83	Studs, Nuts and Bolts.	Upon Notification by P.G.& E.	

SUPPLIER NAME AND LOCATION	DATE OF QUALIFICATION	PRODUCT(S) OR SERVICE(S) QUALIFICATION	DATE OF EXPIRATION	COMMENTS
Bethlehem Steel Bethlehem, PA.	10-12-83	Structural Steel	Upon Notification by P.G.& E.	
Bethlehem Steel Sparrows. Point. MD.	10-12-83	Carbon Steel Plate. Low Alloy Steel Products.	Upon Notification by P.G.& E.	
Bethlehem Steel Steeltown. PA.	10-12-83	Reinforcing Steel.	Upon Notification by P.G.& E.	
Cajon Company 9760 Shepard Rd. Macedonia. OH. 44056	7-18-83	Manufacturer of ferrous and non-ferrous seamless tubular products at this location.	8-31-84	
Cajon Company 32550 Old South Miles Rd. Solon. OH. 44139	7-18-83	Machining and Receiving Inspection.	8-31-84	
Cardinal Industrial Products 7877 Oquendo Las Vegas, Nev. 89117-7089	10-12-83	Structural Steel Bolting Material.	Upon Notification by P.G.& E.	
Chaparal Steel P.O. Box 225056 Dallas, Texas 75202	7-7-83	Structural Steel Plates and Shapes.	8-31-84	

SUPPLIER NAME AND LOCATION	DATE OF QUALIFICATION	PRODUCT(S) OR SERVICE(S) QUALIFIED FOR:	DATE OF EXPIRATION	COMMENTS
Coast Welding Supply 916 West Betteravia Rd. Santa Maria, CA. 93454	10-14-83	Receive, handle storage, shipment control, material identification, and minimum record keeping.	Upon Notification by P.G.& E.	
Crawford Fitting Co. 29500 Solon Rd. Solon, OH. 44139	7-18-83	Ferrous and non-ferrous seamless tubular products. Storage and receiving insoection at 31400 Aurora Rd. Solon, OH. 44139	8-31-84	
Dragon Valves 13457 Excelsior Ave. Norwalk, Calif.	7-18-83	Stainless Steel Globe Valves.	5-6-84	
Ducommon Metals Co. 4890 So. Alameda St. Los Angeles, CA. 90051	6-8-83	Supplier of ferrous structural shapes, seamless & welded without filler metal tubular products at this location only.	1-10-86	
Durkee Testing Lab 1520 W. 178th St. Gardena, Calif. 90247	8-12-83	Testing of materials.	Upon Notification by P.G.& E.	
Foremost Threaded Products 19875 E. Walnut Industry, CA. 91748	10-5-83	Bolting Material.	Upon Notification by P.G.& E.	

SUPPLIER NAME AND LOCATION	DATE OF QUALIFICATION	PRODUCT(S) OR SERVICE(S) QUALIFIED FOR:	DATE OF EXPIRATION	COMMENTS
Hilti Fastening Systems Tulsa, Okla.	8-31-83	Anchor bolts, wedge anchors, with letter of compliance from Tulsa, Okla.	Upon Notification by P.G.& E.	
Imperial Clevite Co. (Imperial Eastman) 6565 West Howard St. Chicago, Ill. 60648	8-9-83	Tubular products.	Upon Notification by P.G.& E.	
Earle M. Jorgenson Co. 10650 S. Alrmede St. Los Angeles, Calif. 90054	7-7-83	Structural Steel Plates and Shapes.	4-15-86	
Krautkramer - Branson 6924 Canby Ave. Reseda, Calif.	9-9-83	Calibration of ultrasonic testing equipment.	Upon Notification by P.G.& E.	
Lincoln Electric Co. 22801 St. Claire Ave. Cleveland, OH. 44117 and 6500 Heisley Rd. Mentor, OH. 44060	7-25-83	Manufacturer of ferrous Welding Material.	5-6-84	

SUPPLIER NAME AND LOCATION	DATE OF QUALIFICATION	PRODUCT(S) OR SERVICE(S) QUALIFIED FOR:	DATE OF EXPIRATION	COMMENTS
Meadco Metals 31626 Hayman St. Hayward, Calif. 94544	7-7-83	Manufactured Sheet Shapes and Parts.	Upon Notification by P.G.& E.	
Metallurgical Testing Corp. 15750 Salt Lake Ave. City of Industry, Ca. 91749	12-21-83	Testing of Materials.	Upon Notification by P.G.& E.	
Midland-Ross Metal Framing Division 802 Eisenhower Dr. North Goshan, ID. 46526	8-22-83	Superstrut.	7-1-84	
National Air Balance of San Francisco 170 South Spruce Ave. So. San Francisco, Ca. 94080	12-13-83	Testing, Balancing, Adjusting of HVAC Systems.	Upon Notification by P.G.& E.	
NDT Electronics 717 Benecia Rd. Vallejo, Ca. 94590	9-9-83	Calibration of ultrasonic testing equipment.	Upon Notification by P.G.& E.	
Pittsburgh - Des Moines 120 Grand Ave. Neville Island Pittsburgh, PA. 15225	8-18-83	Stainless steel, nion alloy, plate, sheets, strips, and bars.	Upon Notification by P.G.& E.	

SUPPLIER NAME AND LOCATION	DATE OF QUALIFICATION	PRODUCT(S) OR SERVICE(S) QUALIFIED FOR:	DATE OF EXPIRATION	COMMENTS
Raychem Corporation 300 Constitution Menlo Park, Calif. 94025	7-12-83	Thermofit Sleeve and Floater Sleeve material.	Upon Notification by P.G.& E.	
R.E.C. Corp. Two Sheraton Plaza New Rochelle, N.Y. 10801	8-3-83	Manufacturer of ferrous and non-ferrous bolting material at this location only.	10-22-85	
Sandvik, Inc. Specialty Steel Interstate 81 & Waverly Scranton, PA. 18501	8-8-83	Manufacturer of ferrrous and non-ferrous seamless and welded without filler metal tubular products and welding at this location only.	6-11-85	
Teledyne McKay Welding Products Division 850 Grantley Rd. York PA. 17405	7-18-83	Manufacturer of ferrous and non-ferrous welding material at this location only.	7-16-85	
Texas Bolt Co. c/o Glasses & Assoc. 5677-B San Diego El Cerrito, Calif.	8-9-83	High strength Bolts, Nuts and Washers.	Upon Notification by P.G.& E.	
Tubesales 2211 Tubeway Los Angeles, CA. 90040	8-17-83	Stainless steel tubing ASTM A-213, grade TP316.	Upon Notification by P.G.& E.	
Tube Turns Div. of Chemetron Corp. 2900 West Broadway Louisville, KY. 40211	8-8-83	Manufacturer of ferrous & non-ferrous seamless & welded without filler metal tubular products at this location only.	1-8-85	

SUPPLIER NAME AND LOCATION	DATE OF QUALIFICATION	PRODUCT(S) OR SERVICE(S) QUALIFIED FOR:	DATE OF EXPIRATION	COMMENTS
U.S. Steel Corp. Homested Works Homested, PA. 15120	8-12-83	Manufacturer of ferrous structural shapes at this location only.	1-5-85	
United States Steel Corp. Gary Works One North Broadway Gary, IN 46402	8-12-83	Manufacturer of carbon & low alloy structural steel shapes, bar & plate at this location only.	Upon Notification by P.G.& E.	

Date	PO#	Vdor	Item
~~3-25-83~~	~~54400~~		
~~3-25-83~~	~~54404~~		
3-29-83	54418	Amfac Electrical	electrical tape
3-26-83	54415	Coast Welding Supply	angle
3-25-83	54416	" " "	washers
3-25-83	54417	" " "	bolts & nuts
3-26-83	54418	" " "	alloy rods
3-28-83	54448	" " "	sump pumps
3-26-83	54461	" " "	charpy charges
3-28-83	54497	Raychem Corporation	termination kit
4-22-83	54990	Anderson Industrial Supply	1/4" NPT AMETEK #P500
4-25-83	54996	Amfac Electrical	
4-25-83	54998	" "	
5-2-83	55042	Coast Welding Supply	Polar Crane 102 Channel
5-3-83	55056	Viking Drafting	Technical Support
5-3-83	55057	P.M. Drafting	" "
4-13-83	55058	Catarract Engineering	" "
4-20-83	55066	Spider	motor
4-29-83	55222	Grinnel Co.	O-Ring
4-29-83	55226	Amfac	
5-2-83	55230	Amfac	T&B Ty Rap
5-2-83	55234	McMaster-Carr Co.	Teflon sheet
5-9-83	55235	Anderson Industrial	Concrete Curing Compound
5-9-83	55456	Hopper	Paint
5-10-83	55479	Amfac	Pipe Clamps
5-11-83	55483	Anderson	S/S check valve
5-16-83	55566	Republic Supply	air relief valves
5-19-83	55572	Anderson	Pressure gauge
5-19-83	55573	"	"
5-23-83	55575	Republic Supply	Indicator valve assembly
6-3-83	55620	Three D Design	Tech. Support

29
21
15
65 PO's

89

Date	PO#	Vdor	Item
6-13-83	55836	Raychem	Thermofit sleeves
6-14-83	55840	Amfac	shrink tubes
6-14-83	55842	Ceilcote	~~Epoxy~~ Epoxy grout
7-21-83	56814	Anderson	curing Compound
7-29-83	56924	Monterey	Crystal sand (carbon)
12-30-83	59217	Anderson	pressure switch
12-13-83	59256	Coast Welding	Long Necks
1-5-84	59304	Amfac	connector

9210	Coast Welding	Welding Rod	6/13/74	
9215	Amfac	electrical parts	6/13/74	
9233	Baker Welding	Welding Rod	6/14/74	NCR 8802-709
9235	Amfac Electrical	Electrical Parts	6/17/74	
9259	W.C. Dillon Co.	Dynamometer	6/24/74	
9264	Amfac	Conduit	6/25/74	
10326	Amfac	Hydraulic Pump	4/1/75	
10342	W.C. Dillon Co	Dynamometers	4/14/75	NCR 8802-709
10349	Grayber Electric	Teflon Wire	4/30/75	
10371	Contractors Building Supply	Gauges	5/6/75	
20209	Electric Supply of Vallejo	Superstrut	5/14/75	
20219	Hilti	Oil Circuit Breaker	5/20/75	non class I
20226	(W)	Burndy	Butt Splices	6/5/75

7/31/72
to 1/5/84

21

Approved Suppliers
Historic List

D-33

FOIA-84-2,1

RIV- Release