1.0 GENERAL

1.1 A welder qualified under this standard may perform arc welding on all API 5L, 5LX, ASTM A53 or A-106 grades on pipe up to and including X60. This would include all natural gas lines designed to operate at stress levels of 20% or more of the specified minimum yield strength to comply with CPUC General Order 112 (latest edition).

1.2 The standard definitions contained in API Standard 1104, latest edition referenced in Appendix "A" of General Order 112 (latest edition) shall apply to this standard.

2.0 QUALIFICATION TEST

2.1 Before any production welding is performed on pipelines or components designed to operate at over 20% of SMYS, welders shall be qualified under this section. The weld shall meet the visual inspection requirements of Par. 4, Standard D-40 and shall also be qualified by either the radiographic testing requirements of Section 2.0, Standard D-31, (for butt welds only), or the destructive testing requirements of Section 3.0 and/or 4.0, Standard D-31.

2.1.1 The test shall be made on steel pipe - 12-3/4" O.D. x 0.375" or greater wall, any grade.

2.1.1.1 Butt weld - The welder shall make a butt weld in the fixed position with the axis of the pipe either in the horizontal plane or inclined from the horizontal plane at an angle not exceeding 45° (see Page 4).

2.1.1.2 Branch Connection - The welder shall lay out, cut, fit, and weld a full size branch on pipe connection. The weld shall be made with the run pipe axis in the horizontal position and the branch pipe axis extending vertically downward from the run (see Page 5).

2.2 Scope of Qualification

2.2.1 A welder who has successfully completed the qualification tests under Section 2.1.1 shall be qualified to weld on natural gas pipelines designed to operate at any stress level, in all positions, on all wall thicknesses, joint designs, including fillet welds, and fittings on all pipe diameters and all grades of pipe if the essential variables in Section 2.3 remain unchanged. Qualification under Section 2.1.1 by destructive testing is required

REGISTERED PROFESSIONAL ENGINEER CHARLES I. TATEOSIAN No. 10689 MECHANICAL STATE OF CALIFORNIA

APPROVED BY		REV.	DATE	DESCRIPTION	GM	DWN.	CHKD.	SUPV.	APVD.
LWH	RCB	3	3-3-84	REVISED PARA. 1.1, 1.2, 2.1.1, 2.4.1 & FORM 75-292					RTA/PAL
PAL	PCH	2	6/79	Revised Para. 2.6				RTA	PAL
RLH	CJT	1	10/17/77	Added Form 75-292 & Para. 2.6				RTA	PAL
PEL-TET	JAF	0	1/20/77	Issue for Use				LWH	PAL

GM	
SUPV.	
DSGN.	
DWN.	
CHKD.	
O.K.	
DATE	11/18/76
SCALE	

PIPING - DATA SHEET
ARC WELDER QUALIFICATION FOR
OVER 20% OF SMYS
GAS STANDARD
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

B/M	
DWG. LIST	
SUPSDS	
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SHEET NO.	1 of 3 SHEETS
	REV.
086577	3
MICROFILM	

62-1804 Rev 7-75

before welding compressor station piping or components.

2.3 If any of the following essential variables are changed, the welder must be requalified:

2.3.1 A change from one welding process to any other welding process or combination of welding processes.

2.3.2 A change in the direction of welding from vertical up to vertical down or vice versa. (Direction of welding shall be only as allowed by Standard D-22. Refer to Pages 9 and 10, Drawings 084022 and 086462).

2.3.3 A change in filler metal from one classification group to another classification group as shown in table below:

FILLER METAL CLASSIFICATION GROUPS

GROUP	AWS SPEC.	ELECTRODE
I	A5.1	EXX 10
	A5.5	EXX 11
II	A5.5	EXX 16
		EXX 18

2.4 Requalification of Arc Welders

2.4.1 Welders shall be requalified no later than the last day of the 6th calendar month following the calendar month in which the last previous test was satisfactorily passed. Requalification may consist of successful passing of a radiographic examination of a production butt weld, or by repeating the butt weld test in Section 2.1. If the 6th month expires before requalification, an entire qualification test (Section 2.1) must be repeated.

2.4.2 A requalification test, by destructive methods and in accordance with Section 2.1.1.1, may also be required if there is reason to question the welder's ability.

2.4.3 Annually, all welders who work on compressor station piping must pass a butt weld test, by destructive methods, in accordance with 2.1.1.1.

2.5 Qualification and requalification tests shall be performed under the supervision of a qualified welding inspector

This inspector shall not leave the immediate area while the testing is being performed. For the purposes of this Standard, a qualified welding inspector is a designated employee that has the experience and knowledge to judge the quality of welds. The supervisor designating the person to inspect the welding for a job has the responsibility to determine that the person is qualified. (See Standard D-40).

2.6 Retests

Welders who fail to pass the qualification test in Section 2.1 or the requalification test in Section 2.4 must:

2.6.1 Undergo further training or practice before retesting. The extent of training or practice required shall be determined by the welding inspector.

2.6.2 Pass both the "butt weld" test and the "branch connection" test outlined in Section 2.1 in order to be requalified.

2.7 Records

2.7.1 Records for all welders who have been qualified under this Standard shall be retained as outlined below.

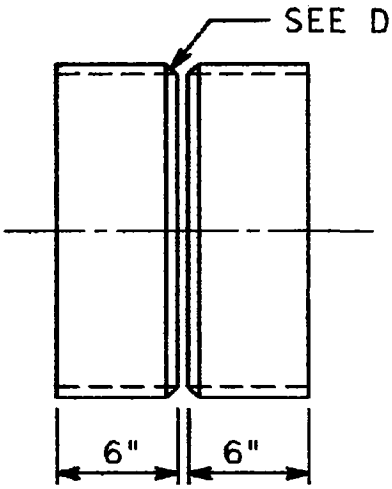
2.7.2 All Employee Qualification and Requalification records must be retained for a minimum duration of five years.

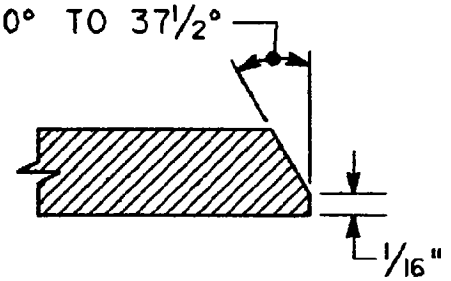
2.7.3 All Employee Qualification and Requalification records must be retained through temporary lapses in a welder's qualification.

2.7.4 The Record shall be made by filling out Form 75-292 (Gas Standard D-30.2, Page 6).

D-30.2

PAGE 4





DETAIL OF BEVEL

NOTES:

1. SPOOLS CAN BE USED FOR WELDER QUALIFICATION FOR BOTH CELLULOSE COATED (GAS STD. D-22, PG. 9) AND LOW HYDROGEN ELECTRODES (GAS STD. D-22, PG. 10).
2. REFER TO GAS STD. D-31, PAGE 13, FOR TYPE, NUMBER AND LOCATION OF BUTT WELD TEST SPECIMENS.

OPERATING INSTRUCTIONS

(TWO SPOOLS ARE REQUIRED FOR EACH TEST)

SPECIFY:

SPOOL, TEST, 12-¾" O.D., 0.375" WALL, GR. B, 6" LENGTH W/30-37.5 DEG. BEVEL ONE END. GAS STD. D-30.2, PG&E MFG.

CODE 02-2583

[270,170]840181.G24 02-10-84 RGB

APPROVED BY		REV	DATE	DESCRIPTION	GM	DWN	CHKD	SUPV	APVD
JLL	RFD	8	3-16-84	ADDED NOTE 2.					MOB-PAL
WER	KSA	7	4-4-83	REVISED NOTES, ADDED ORDERING INSTRUCTIONS					RTA-PAL
RSK	EHF	6	5-27-80	ADDED NOTES 1 & 2					RTA-PAL
	EFS	5	11-30-77	CHANGED STD. PAGE NO. FROM PAGE 3					RTA-PAL

GM DEPT. OF G.O.
SUPV
DSGN
DWG
CHKD
O K
DATE 1-4-65
SCALE NONE

PIPING - DATA SHEET

BUTT WELD TEST SPOOLS FOR WELDERS WORKING ON PIPE LINES OPERATING AT HOOP STRESSES OF MORE THAN 20% OF THE SPECIFIED MINIMUM YIELD

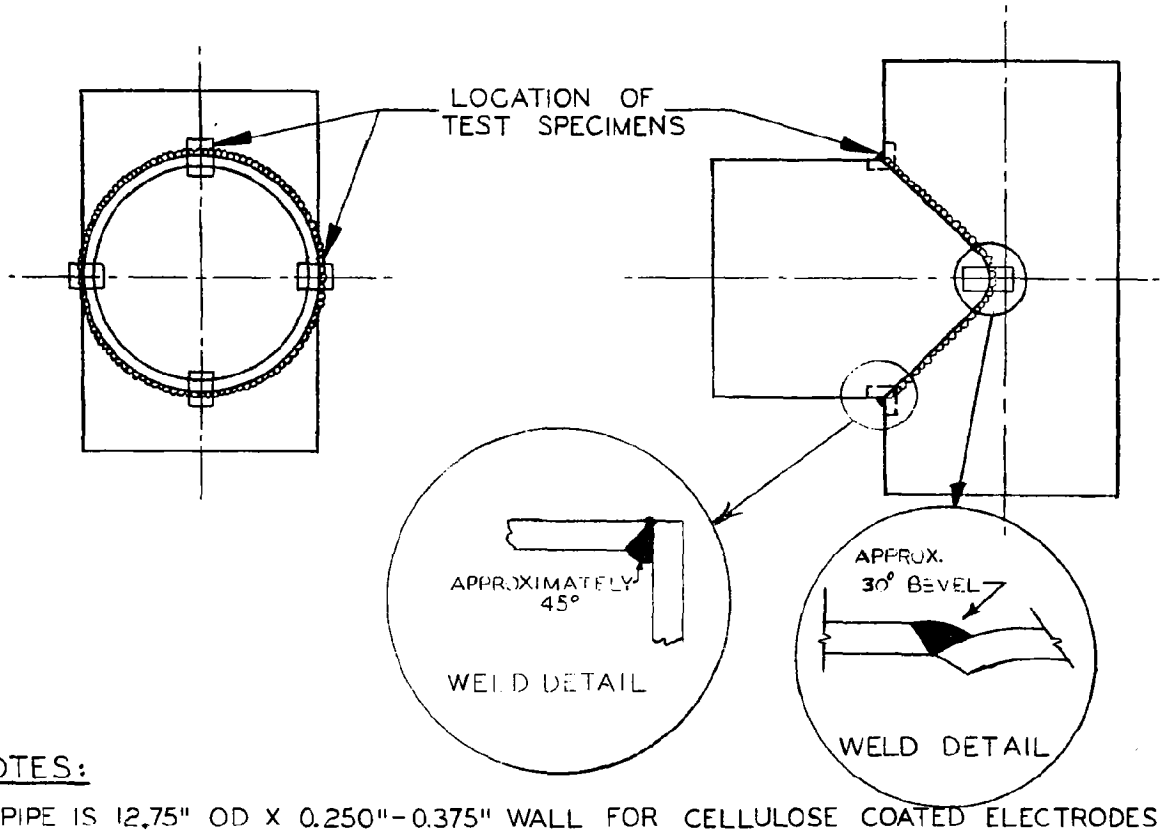
GAS STANDARD

PACIFIC GAS AND ELECTRIC COMPANY

SAN FRANCISCO, CAL.

B/M
DWG LIST
SUPSDS 083466 SH 5
SUPSD BY
SHEET NO OF SHEETS
DRAWING NUMBER 084023
REV 8
MICROFILM

S1804



NOTES:

1. PIPE IS 12.75" OD X 0.250"-0.375" WALL FOR CELLULOSE COATED ELECTRODES AND 0.375" WALL OR GREATER FOR LOW HYDROGEN ELECTRODES. ANY GRADE LISTED IN PARAGRAPH 1.1 MAY BE USED.
2. WELDER MUST LAYOUT, CUT, FIT AND WELD BRANCH FITTING CONNECTION. A FULL HOLE IS TO BE CUT IN THE RUN.
3. THE WELD IS TO BE MADE WITH THE RUN PIPE AXIS FIXED IN THE HORIZONTAL POSITION, AND THE BRANCH PIPE AXIS EXTENDING VERTICALLY DOWNWARD FROM THE RUN.
4. WELD MUST MEET VISUAL TESTING REQUIREMENTS OF SECTION 6.3.
5. FOUR NICK BREAK SPECIMENS ARE REQUIRED. TEST NICK BREAK SPECIMENS FROM LOCATIONS INDICATED. SPECIMENS SHALL MEET REQUIREMENTS OF STANDARD D-31. PREPARE AND BREAK SPECIMENS AS SPECIFIED ON DWG. 084024 (STD. D-31, PAGE 14).

TEST WELD FOR ARC WELDERS QUALIFICATION FOR FACILITIES OPERATING AT OVER 20% OF SMYS.

APPROVED BY [redacted]

CHG.	DATE	DESCRIPTION	GM	BY	CH.	APPD.
3	5-27-80	REVISED NOTE 1				
2	10-19-79	ADDED WELD DETAILS		JH	[redacted]	
1	11-30-77	Changed Std. Page No. from Page 4				

GM
SUPV.
DSGN.
DR. [redacted]
CH.
O. K
DATE 6-25-75
SCALE —

PIPING - DATA SHEET
BRANCH WELD TEST
GAS STANDARD

PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

B/M
DRAWING LIST
SUPERSEDES 084029 & 085749
SUPERSEDED BY
SHEET NO. SHEETS
CHANGE
086406 3

PRINTED ON DIEPO NO. 1000H CLEARPRINT 8-74

ARC WELDER QUALIFICATION TEST FOR PIPING SYSTEMS OPERATING AT HOOP STRESSES OF 20% OR MORE OF SPECIFIED MINIMUM YIELD STRENGTH

☐ PASSED. DATE LAST TESTED:_____ DATE:_____

☐ FAILED. FURTHER TRAINING REQUIRED _____

WELDER: _____ S.S.NO.: _____

PIPE DIA._____ PIPE SPEC._____ GRADE_____ WALL THICKNESS _____

☐ EXX10 ☐ MICRO WIRE ☐ BUTT TESTER:_____ (P.G.&E.)

☐ EXX18 ☐ OTHER_____ ☐ BRANCH WELD POSITION:_____

ELECTRODE MATERIAL: ELECTRICAL: WELDING:

BEAD	MFG. & AWS CLASS	DIA.	POLARITY	AMPS	VOLTS	DIRECTION
1ST BEAD						
2ND BEAD						
OTHER BEADS						

TENSILE TESTS:

SPECIMEN	WIDTH	THICKNESS	AREA-SQ. IN.	LOAD-LB.	STRESS-PSI	REMARKS
1						
2						
3						
4						

FACE BEND OR SIDE BEND:

SPECIMEN	LOCATION	NO. CRACKS	MAX. DIMENSION	LOCATION	REMARKS
1					
2					

ROOT BEND OR SIDE BEND:

1					
2					

NICK BREAK:

SPECIMEN		GAS POCKETS			SLAG INCLUSION				
NO.	LOCATION	NO.	MAX. SIZE	BETWEEN	NO.	LENGTH	BETWEEN	FUSION	REMARKS
1									
2									
3									
4									

CONTRACTOR:_____ PROJECT:_____