TEST REQUIREMENTS FOR PIPELINES MAINS SERVICES
INSTRUMENT LINES AND OTHER GAS FACILITIES

DESIG PRESSURE (D P)		30% OR MORE		PRETESTED PIPE FOR EMERGENC USE (SEE OTE 7	UNDER 30% SMYS AND OVER 100 PSIG	100 PSIG OR LESS (INCLUDING LOW PRESSURE)	PLASTIC SEE NOTE 2
		IPELINE INCLUDING F BRICATED U ITS TESTED I PL CE	FABRICATED UNITS, SHORT SECTIO S OF PIPE SEE OTE 6		INCLUDING F BRICATED UNITS AND SHORT SECTIONS OF PIPE		
TYPE OF TEST		STRE GTH	STRENGTH	STRE GT	LEAK	LEAK	LEAK
TEST EDI		ATER AIR INERT G S OR G S SEE OTES 2 AND 6	WATER AIR INERT G S OR G S SEE NOTES 2 D 6	WATER	TER IR INERT G S, OR GAS SEE OTES 1,2 ND 6)	AIR OR G S SEE NOTE 6	IR OR G S SEE OTE 6
MAXIMU TEST PRESSURE (SEE NOTES ND 2		100% SMYS OR FACTORY TEST PRESSURE OF FITTI G SEE NOTES 3 AND 5)	100% SM S OR FACTOR TEST PRESSURE OF FITTI G SEE NOTES 3 A D 5	100% SMYS	SEE NOTES 3 ND 14	110 PSIG	3 X DESIG PRESSURE
INIMU TEST PRESS RE		1 5 X DESIGN PRESSURE SE OTES D 5	5 DESIG PRESS RE SEE OTES D 5	90% S S ECOMME DED	5 X DESIG PRESSURE SEE OTE	00 PSIG	00 PSIG OR 1 5 MAOP WHIC E ER IS GREATER
DURATION OF TEST		8 OURS I I UM SEE NOTE 7	OURS MINIMUM SEE OTE 7)	4 OURS MI IMU	HOUR MINIMUM (SEE NOTE 17)	5 I UTES	5 MINUTES (SEE OTE 9)
TEST RECORDS REQUIRED (SE NOTE 5)	FORMS REQUIRED	COMPLETED STRE GT TEST PRESS E REPORT	CO P ETED STRE GT TEST PRESSURE REPORT	COMP ETED STRE GT TEST PRESS RE REPORT	COMPLETED STRENGT TEST PRESSURE REPORT	COMPLETE BO O D FORM OR GAS SER ICE RECORD FOR	COMPLETE BOX ON O FORM OR G S SERVICE RECORD FORM
	TEST CH RT	YES (SEE NOTE 1	YES (SEE NOTE 1)	YES (SEE NOTE 1)	NO (SEE NOTE 3	NO (SEE OTE 13)	NO (SEE NOTE 13)

NOTES

( ) MAXIMUM TEST PRESSURE PERMITTED EXPRESSED AS PERCENT OF SM S

	C SS OC 10	2	3	
IR OR I ERT GAS SEE OTE 0	80	75	50	40
N TURAL G S	80	30	30	30
W TER	00	100	100	100

(2) SAFETY HEN TESTI G WITH AIR INERT GAS OR NATURAL GAS T E PRESSURE SHALL BE HELD AT ABOUT 100 PSIG AND OBSERVED FOR LE GE BEFORE RAISING TO THE REQUIRED TEST PRESSURE

(3) MAXI UM TEST CAPABILITIES OF FITTINGS SUCH AS V VES AND ELBO S MUST BE DETERMINED BEFORE TESTING (SEE PARAGRAPH 22)

T E I IMUM TEST PRESS RE S OT BE ESS T 5 TI ES T E DESIG PRESS RE IN CL SS 2 3 D LOC TIO S AND NOT LESS THAN 1 25 TI ES THE DESIGN PRESSURE IN CLASS LOCATION THE ONLY EXCEPTION IS FOR TR NSMISSION LI ES WHERE TESTING TO 1 5 TI ES THE DESIGN PRESSURE CREATES PROBLEMS DUE TO LI IT TIO S IMPOSED BY ALVES SEE NOTE 3 ND WHERE T E FUTURE OP TO BE ESTABLISHED IS BELOW THE DESIG PRESSURE THE MINIMUM TEST PRESSURE MA T E BE LI I ED TO 5 TI ES T E OP WIT T E PPRO OF THE G S S STE DESIG DEP RT E T

5 IT IS T E INTE T TO TEST ALL FACILITIES DESIG ED TO OPER TE T 50% OR MORE OF S S TO A I IMUM OF 90% OF SM S D AS C OSE TO 100% OF S S S PR CTICA FOR F CILITIES OPER TI G T O ER 0% BUT LESS T 50% OF S S CO SIDER TION SHOULD BE GIVEN TO TESTING TO O ER 90% OF SMYS IF THERE IS A POTE TIAL FOR THE LOCATION TO CHA GE TO A CLASS 4 RE I THE FUTURE HO EVER SUCH TESTING IS NOT A ALTERN TIVE FOR CONSTRUCTION OF NEW OR REPLACE ENT FACILITIES TO MEET E PECTED CLASS LOC TIO REQUIREME TS (SEE PARAGRAP 9 OF T IS ST NDARD)

(A L F CILITIES DESIG ED TO OPERATE AT 30% OR MORE OF SM S SHALL BE TESTED S A UNIT FOR A MI IMU OF EIG T HOURS AFTER INSTALLATION EXCEPT FOR FABRICATED U ITS OR S ORT SECTIONS OF REPLACE ENT PIPE FOR WHICH A POST INST LL TIO TES IS I PR CTIC L F BRIC TED U ITS FOR IC A POST I ST TIO TEST IS IMPR CTIC L SHALL BE TESTED FTER COMP ETION ND BEFORE INSTALL TION FOR A MINIMUM OF FOUR HOURS THIS TEST IS REQUIRED E EN THOUGH PRETESTED PIPE WAS USED TO FABRIC TE THE U IT S ORT SECTIO S OF REPL CEMENT PIPE S ALL BE TESTED FOR A MINIMUM OF FOUR HOURS PRIOR TO INST LL TION FOR G S STANDARD A 34 THE FOLLOWING DEFENITIONS SHALL APPLY

SHORT SECTIO OF PIPE IS DEFINED AS A SINGLE PIECE OF PIPE CONT INING NO G)RT WELDS

) A FABRICATED UNIT IS AN ASSEMBL OF T O OR MORE FITTINGS AND/OR PIECES OF PIPE JOINED TOGETHER WHERE ORE THAN 40 FEET OF IPE IS I C DED I T E NIT T ERE S ALL BE F EIGHT HOUR TEST

7 TESTI G EMERGENCY PIPE

T E LOCATIO CLASS DESIGN FACTOR PRESENT MAOP OF FACILITY MAOP TO BE EST BLISHED BY THIS TEST DESIGN PRESSURE THIS SECTIO FUT RE DESIGN PRESSURE D Y OF SMYS T DESIG PRESSURE S OULD NOT BE SPECIFIED ON THE STRE GT TEST P ESS RE REPOR FOR E E ERGE C PIPE SI CE IT IS D K O T E IME OF T E TEST ERE T E PIPE I BE I ST LED

(b) IT IS RECOM E DED T T LL E ERGENC PIPE BE TESTED TO A MINIMU OF 90% OF S YS FOR INI UM OF FOUR OURS T E EMERGE C PIPE TEST INFORMATIO FORM SEE PPENDIX H I SHALL BE COMPLETED SUBSEQUE 1 TO THE STRENGTH TEST AND TT CHED TO THE STRE GT TEST PRESSURE REPORT

OR EMERGE C RE IRS SO E EXCEP IO S O T E DESIG D TES REQ I E E TS MA BE PER ITTED B T O ITH E APP O L OF THE G S SYSTEM DESIGN DEP RTMENT

8 TESTI G I STR E T LI ES

AL INSTRUMENT LINES DE OF STEEL PIPE A D SUBJECTED DIRECTLY TO MAINLINE G S PRESSURES S LL BE TESTED 1 CCORD CE ITH THE APPLIC B E TEST REQUIRE E TS I T E ABO E TABLE IT IS OT NECESS RY TO T ST TUBI G BUT AL FITTINGS A D CONNECTIO S SHOULD BE CHEC ED FOR LE KS AFTER START UP

(9 LT G T E TEST D R ION FOR PL STIC PIPE IS 5 I TES IF T E CO STR CTID SC ED E PER ITS IT IS DESIR B E TO MAINTAIN T E TEST PRESSURE FOR A LO GER PERIOD OF TIME IF THE PIPE IS OT G SSED UP ON THE SAME DAY AS THE TEST IT MUST BE RETESTED BEFORE G SSING UP

(10 ALL TES S TO OVER 50% SMYS SHOULD BE PERFORMED WITH W TER S THE TEST MEDIUM UNLESS SUCH A TEST IS IMPRACTICAL HERE HYDROSTATIC TEST IS I PR CTICAL IR OR I ERT G S MA BE USED IT THE LIMIT TIONS SHOWN 1 OTE I B ILDINGS WITHIN 300 OF E TES SECTION MUST BE E CU TED DURING HE TEST

(11) TEST C RTS MUST BE CO PLETED ND RET INED AS OUTLINED IN A 34 PARAGRAPH 25

(12) TE PERATURE OF THER OPL STIC MATERIA MUST NOT BE MORE THAN 100 F DURI G T E TEST

(13 TABLE INDICATES TEST C ART REQUIRE ENTS FOR NEW FACILITIES TEST CHARTS ARE REQUIRED FOR LL UPRATI G JOBS REGARDLESS OF THE OPERATING PRESSURE OF T E LINE

(14) FOR FACILITIES OPER TI G T UNDER 30% SM S D OVER 00 PSIG THE MAXIMUM TEST PRESSURE IS TO BE DETER INED BY THE PRO ECT ENGINEER REASONABLE DIFFERENTIAL BETWEEN MAXIMU AND I I UM TEST PRESSURES SHOULD BE ALLOWED CONSIDERI G ELEVATIO DIFFERE TIALS D T E REQUIREMENTS OF NOTE 3

15 LL TEST RECORDS MUST BE RET INED FOR THE LIFE OF THE FACILITY

(16) TESTING USING WATER IR OR I ERT GAS IS NOT NOR ALLY PERMITTED WHERE THE TEST SECTION IS ISOLATED FROM N OPERATI G LINE O Y BY CLOSED VALVE SQUEEZE OFF EQUIP ENT OR PLUGGI G EQUIPMENT SINCE LE KAGE MAY OCCUR CREATING N UNDESIRABLE ND POTE TI LLY AZ RDOUS SITU TION IF THE TEST MUST BE PERFORMED UNDER T IS CIRCUMST NCE PRIOR APPRO AL MUST BE OBTAINED FRO T E G S S STE DESIG DEP R E T A D DDITIO L PREC UTIONS MA BE REQ IRED I ORDER TO 1 I IZE T E POSSIBILITY OF AN ACCIDENT FOR TEST LIMITATIO S ON VALVES SEE PAR GR PH 2

7 E E PIPE I ES ARE I ST LED O STREET OR IGH Y BRIDGES UNDER PER ITS FRO GO ER E T L GENCIES MORE STRI GE T TESTI G MAY BE REQUIRED BY THE GENCY THAN WOULD BE REQUIRED BY THIS GAS STANDARD FOR PIPELINES DESIGNED TO OPERATE OVER 200 PSIG AND LOC TED O C LIFOR IA STATE BR DGES THE TEST PRESSURE SHALL BE MAINTAINED FOR A MINIMUM OF 24 HOURS

(18) INSTA L TION OF A HOT TAP BRANCH CON ECTION WITH REINFORCE ENT PAD OR SLEEVE

(THE BR NCH TO HE DER WELD SHALL BE LEAK TESTED PRIOR TO T E INSTALLATION OF THE REINFORCEMENT PAD OR SLEE E FOR MINIMUM OF FIVE MINUTES THE MINIMU TEST PRESSURE SHALL BE 100 PSIG

b FTER THE REINFORCEMENT P D OR SLEE E IS WE DED IN P ACE ND PRIOR TO T PPING THE HE DER T E SSEMBLY SHALL BE HYDROST TICAL Y TESTED O LE ST 5 TI ES THE MAOP OF T E E DER 00 OT TEST ORE 6 TI ES THE OP OF THE E DER

C DD 820372 02 16/83

APPROVED BY							
PAL	JLL						
TET	JWL						
WER	EFS	1	2	ISSUED FOR USE		ISAAC	
		REV	DATE	DESCRIPTION	DWN	CHKD	APVD

GM	
SUPV	
DSGN	
DWN	/BAL
CHKD	
O K	
DATE	SCALE
11 1 82	NONE

PIPING - DATA SHEET
DESIGN AND TEST REQUIREMENTS
GAS STANDARD
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

SUPERSEDES	283621
SUPERSEDED BY	
SHEET NO 1 OF 1	SHEETS
DRAWING NUMBER	REV
284283	1
MICROFILM	

34 RE