



UO Standard S5351

ISSUING DEPARTMENT: **GD&TS**

EFFECTIVE DATE: **8-01**

UO SPONSOR: **VP - Distribution
Engineering and Planning**

REVIEW DATE: **8-05**

PAGE NO.: **1** OF **3**

TITLE: District Regulator Station Maintenance

Purpose

This standard provides requirements that establish uniform procedures for inspecting, testing, maintaining and keeping records associated with district regulator stations.

This standard does not apply to regulator stations that are major control facilities (defined as facilities under the jurisdiction of California Gas Transmission (CGT) Standard 4431, "Operation and Maintenance Instructions Requirements for Major Gas Facilities," issued 10-99.

This standard supports UO Policy 3-7, "Gas and Electric Maintenance and Operation," issued 4-14-93, and complies with the requirements stated in the *Code of Federal Regulations*, 49 CFR, Part 192.

This standard supersedes CES/GS/CS Standard D-S0351, "District Regulator Station Maintenance," issued 10-94, and all previous instructions, oral or written, that may be contrary to this standard.

Safety

Failure to perform the required maintenance could pose a risk to public safety in the event of equipment failure.

Implementation Responsibilities

The vice president of Engineering and Planning (E&P) is responsible for approving, revising and distributing this standard.

Compliance

The director of Gas Distribution and Technical Services (GD&TS) and the Operations, Maintenance and Construction (OM&C) directors are responsible for establishing and maintaining procedures to comply with this standard.

The director of GD&TS is authorized to modify the standard's attachments, as needed, or approve variances to the attachments, on an exception basis.

Definition of Terms **District Regulator Station:** A facility within the transmission or distribution system that contains pressure control devices and appurtenances that limit and control pressures to a distribution main serving more than two services.

HPR-type District Regulator Station: A district regulator station that uses non-pilot-operated regulators (i.e., Fisher 627, Reliance Model 10 and 20 HPR, Sprague 041, etc.).

For Cause: When the regulator, the overpressure protection device and/or the pilot control loop are suspected of not being in good operating condition.

Date Issued/Updated

Effective: August 2001
Review Date: August 2005

Signed,

Shan Bhattacharya
 Vice President
 Engineering and Planning

Reference Documents 49 CFR, Part 192, *Code of Federal Regulations*

Code of Safe Practices, 1997 Edition, Pacific Gas and Electric Company, Safety, Health and Claims Department

 California Public Utilities Commission (CPUC) General Order 112-E, “Rules Governing Design, Construction, Testing, Maintenance and Operation of Utility Gas Gathering, Transmission and Distribution Piping Systems”

 National Pollutant Discharge Elimination System, General Permit CAG990002

 UO Standard D-S0446, “Vault Inspection Procedure”

 UO Standard D-S0456, “Recording Pressures in Distribution Systems”

 CGT Standard 4431, “Operation and Maintenance Instructions Requirements for Major Gas Facilities”

CGT Standard 4432, "Station Inspection, Testing, and Maintenance Procedures"

CES/GS/CS Standard D-S0213, "Work Procedures in Confined Spaces"

Gas Standards and Specifications (GS&S) F-11, "Valve Lubrication and Maintenance Requirements"

GS&S H-14, "Gas Regulator Systems Typical District Regulator Sets"

GS&S H-70, "Pressure Relief Devices"

Attachments/Exhibits This standard includes the following attachments:

Attachment 1: Inspection, Testing and Maintenance Requirements of District Regulator Stations

Attachment 2: Testing and Maintenance Instructions for District Regulator Stations

Attachment 3: Regulator Station Maintenance and Data Forms

Attachment 1

Inspection, Testing and Maintenance Requirements of District Regulator Stations

Purpose

The purpose of Attachment 1, "Inspection, Testing and Maintenance Requirements of District Regulator Stations," is to provide procedural details for inspecting, testing and maintaining district regulator stations.

Inspection Schedules

District regulator stations shall be inspected according to the following schedules.

1. HPR-type district regulator stations
 - A. Class A Inspection at least once each calendar year not exceeding 15 months.
 - B. Class B Inspection for cause.
2. All other district regulator stations
 - A. Class A Inspection at least once each calendar year not exceeding 15 months.
 - B. Class B Inspection once in the next calendar year after initially placing the station in operation and every 8 years thereafter, except for cause.
 - C. Any work involving cutting and welding of piping downstream of the station filter and upstream of the regulation equipment will require a Class B Inspection during the next calendar year after the work is done.
 - D. Class B inspection on relief valves once in the next calendar year after initially placing the station in operation, and for cause thereafter.
3. An annual "anniversary month" shall be established for the inspection and maintenance of each regulator station covered by Paragraphs 1 and 2 of this section and Paragraph 1 of the "Pressure Relief and Pressure Limiting Equipment" section on Page 3. The anniversary month is the calendar month in which the inspection and maintenance is scheduled. Except as permitted by Paragraph 5 below, the anniversary month shall be the month in effect as of the date of the revision of this standard and shall be the same month each subsequent year.
4. The inspection and maintenance required by Paragraphs 1 and 2 above and Paragraph 1 on Page 3 shall be scheduled for the anniversary month. If circumstances do not permit the work to be performed during the month in which it is scheduled, it may be performed in the months before or following the scheduled month. But, it is to be performed not less than once each calendar year, and not exceeding 15 months of the last inspection.

5. A new anniversary month for scheduled maintenance **may be** established by performing the required inspection and maintenance during a month that is *earlier* than the anniversary month. However, a new anniversary month may **not be** established by performing the scheduled maintenance during a month *later* than the established anniversary month.

These schedules establish minimum inspection and maintenance requirements and maximum time intervals. When conditions require more frequent inspections, the supervisor shall establish a shorter interval. For stations that experience abnormal operating conditions such as fluid, freezing, sulfur, etc., more frequent internal inspection of the regulating device and/or the pilot control loop is recommended. Where practicable, inspections shall be scheduled to coincide with other work to be performed. The various steps of testing, inspecting and performing maintenance shall be combined, when possible.

All district regulator stations shall be entered in the facility maintenance master file (GAS FM Review List), showing the maintenance to be performed and the established intervals. It is necessary to enter maintenance activities as they are performed to ensure up-to-date GAS FM output schedules. The GAS FM monthly schedules and backlog reports shall be reviewed by qualified personnel.

Inspection Procedures

1. Before entering any pit or vault, observe the necessary precautions regarding barricading, identifying sources of ignition and checking for combustible gases, in accordance with UO Standard D-S0213, "Work Procedures in Confined Spaces," and the applicable section of the Company's *Code of Safe Practices*.
2. Locate and operate station inlet and outlet fire valves (if present), and ensure that the valves are marked correctly.
3. If liquid is found in any pit or vault, environmental liquid testing procedures must at all times be followed in accordance with the National Pollutant Discharge Elimination System, General Permit CAG990002, to determine if the liquid could be disposed of into nearby ground or facilities.
4. Inspection procedures are divided into two categories: Class A, *Diagnostics*, and Class B, *Internal*. The work to be performed under each category is listed in Attachment 2. Class A inspections usually can be performed with the unit in service. Class B inspections require taking the unit out of service and disassembling its component parts to allow inspection. A Class B inspection includes the performance of a complete Class A inspection.
5. Attempts should be made to complete a scheduled inspection in the same day. However, if a partial inspection is performed due to system diagnosis, scheduling or other needs, the work done during the partial inspection is to be documented. If a partial inspection is made, the work performed at that time need not be repeated during the completion of the scheduled inspection. However, the maximum interval between complete inspections shall not exceed those described in the "Inspection Schedules" section of this attachment.
6. The inspection, testing and preventive maintenance work is described under the "Inspection Schedules" section of this attachment and a more fully-detailed description, with corresponding

letter-number designations, appears on Form 626321, “District Regulator Station Maintenance Record,” and Form 626321A, “District Regulator Station Maintenance Record (HPR Type).”

7. At every stage of inspection, steps shall be taken to correct deviations from proper operation. A district regulator station is considered operating properly when the following conditions are met.
 - A. Both the regulator and the overpressure protection device are controlling their respective set pressure in a stable manner throughout the normal range of flows and normal inlet pressure variations.
 - B. All components are adequate from the standpoint of design pressure, reliability, capacity and safety.
 - C. All station equipment is free of leakage, in good mechanical condition and capable of being operated by authorized persons at any time.

If acceptable operation, as described above, is not attained, the problem shall be determined and immediately corrected until proper operation has been achieved.

8. Regulator station housekeeping includes:
 - yards and pits are maintained to be free from debris, weeds and water,
 - piping and equipment are properly protected against external corrosion, and
 - vault covers, fencing and enclosures are properly maintained and identified.

Pressure Relief and Pressure Limiting Equipment

1. Each pressure relief or limiting device, or related group of such devices, must be checked for adequate overpressure capability in compliance with Section 192.201 of 49 CFR Part 192 and Paragraph B below. Adequate overpressure confirmation must be made at least once each calendar year, in accordance with schedules specified in Paragraphs 3, 4 and 5 of the “Inspection Schedules” section of this attachment.

Overpressure confirmation is achieved by checking for proper operating settings of monitor regulators, automatic shutoff devices and reliefs.

- A. The maximum monitor set point limits for various maximum allowable operating pressure (MAOP) are as follows.
 1. LP System – 12 inches water column (WC)
 2. Below 12 psig – 25% above the MAOP
 3. 12 psig to 60 psig – 2 psig above the MAOP
- B. The maximum and minimum set point limits for automatic shutoff devices are as follows.
 1. LP System – 14 inches WC for high setting and 3.5 inches WC for low setting
 2. Semi-HP System – MAOP plus allowable limit for high setting and 1 psig for low setting
 3. HP System – MAOP plus allowable limit for high setting and 2 psig for low setting
- C. Maximum and minimum set point limits for the automatic shutoff devices with regulator,

monitor and Slam-Shut configuration:

1. LP System – 14.5 to 16.0 inches WC for high setting and 3.5 inches WC for low setting
 2. Semi-HP System – 2 psig above MAOP plus allowable limit for high setting and 1 psig for low setting
 3. HP System – 2 psig above MAOP plus allowable limit for high setting and 2 psig for low setting
- D. The adequacy of relief valves must also be confirmed by either of the following means:
1. physically testing for capacity to limit pressure to the required level, or
 2. making an office review and calculation to verify that, under abnormal operating conditions, the relief valve has the proper setting and capacity to limit pressure to the required level.
- E. The set point of the relief valve must be set low enough to take into consideration buildup pressure above the initial relief valve cracking pressure.
- F. A relief valve analysis shall be made before changing any equipment if either of the following occurs:
1. a change in load or pressure conditions that alter the capacity of the regulator, or
 2. a change in the capability of the relief valve to limit pressure buildup.
2. Relieving capacity installed in conjunction with parallel regulators shall be adequate for:
- A. a simultaneous “fail open” condition of both the working and standby regulator runs for stations constructed or reconstructed after July 1972, or
 - B. a “fail open” condition of the regulator run with the largest capacity for stations constructed before August 1972.
3. Whenever physical tests and/or calculations indicate that relief capacity is inadequate, immediate action will be taken to ensure that equipment adequate to provide the necessary protection against overpressuring is installed.

Records

1. A “District Regulator Station Data Sheet,” Form 626271, shall be prepared for each district regulator station and filed in the local operating office. Station numbers shall be assigned, and a data sheet prepared to cover each stage of regulation.
2. A record of district regulator inspection and maintenance shall be prepared and filed in the local operating office using Form 626321, “District Regulator Station Maintenance Record,” or Form 626321A. The 49 CFR Part 192, Section 192.743 requires that where a relief valve is used for overpressure protection, a record shall be maintained of the annual capacity check of these facilities. A continuous maintenance record shall be retained for 8 years or the life of the facility whichever is less.

3. Documentation of inspections, partial or full, must be completed on the “District Regulator Station Maintenance Record on the day the work is performed.”
4. Pressure-recording charts, used in district regulator pressure tests, shall be filed in the local operating office and retained for a minimum period of 8 years.
5. Calibration records of permanent pressure-recording devices (mechanical or electronic) at district regulator stations shall be retained in accordance with UO Standard D-S0456, “Recording Pressures in Distribution Systems.”

Compliance and Control

Supervisors are responsible for the completion of all the district regulator stations’ maintenance work in their areas as required to comply with this standard.

Attachment 2**Testing and Maintenance Instructions for District Regulator Stations****Purpose**

The purpose of this document is to provide testing and maintenance instructions for inspecting district regulator stations.

Class A Inspection - Diagnostic

1. Perform an inspection to determine that:
 - A. upstream and downstream fire valves are accessible and operable (refer to GS&S F-11).
 - B. vault covers open and close properly and are not a hazard to the general public or to Company employees.
 - C. ground level around the vault provides adequate drainage and is not a hazard to the general public or to Company employees.
 - D. there is no gas present in the vault using a combustible indicator. Test fittings and connections for leakage using a combustible gas indicator or liquid soap.
 - E. ventilating ducts and gratings are clear, and operating and relief stacks are clear.
 - F. the vault structure, ladders, hooks and related equipment are in good mechanical condition.
 - G. piping and related equipment, including regulators and overpressure protection devices, are in good mechanical condition.
 - H. locking devices are present and operate properly.
2. Operating tests
 - A. Install appropriate test gauges.
 - B. Check the filter drip for dirt, liquids or other debris.
 1. Make a filter/strainer differential pressure test with an indicating gauge or manometer at the inlet and outlet. Based on an estimated flow rate, compare the actual differential pressure with the previous pressure reading. Replace the filter element if the actual differential is higher than specification, or
 2. Perform an internal inspection of the filter. Replace the filter element as needed.
 - C. Check working and standby regulators or control valves for pressure settings and control.
 - D. Check overpressure protection.
 1. Check the monitor regulators or control valves for pressure setting and control by causing the monitor regulators or control valves to operate and take over pressure control at the set point. The pressure at which the monitor regulators or control valves operate and take over pressure control must not exceed the MAOP plus the allowable limit.

2. Test the relief valve for its ability to operate at the overpressure set point. The pressure at which the relief valve operates and achieves full relief capacity must not exceed the MAOP plus the allowable limit.
 3. Test the automatic shutoff for its ability to operate at overpressure and underpressure set points.
 4. Verify that the proper level of sealant in liquid seal reliefs.
- E. Test the working regulator/control valve, and monitor the regulator/control valve for lockup or the ability to control minimum flow. If lockup is not achievable, evaluate the station and system's dynamics and operations to determine if lockup is necessary. Document the evaluation on the back of the regulator station maintenance form.
 - F. Inspect all control vent lines to ensure that they are clear of debris.
 - G. Check and operating all regulator station valves and lubricate valves when required.
 - H. At the completion of every inspection, make certain that all valves and equipment are returned to the normal operating position.
3. Recording station performance
 - A. The recording of station performance applies to the regulator run that is put into operation.
 - B. For district regulator stations using either a permanent or portable recorder, perform a two-point check (zero and operating pressure) with a test gage. Then record a 16-hour minimum pressure chart. Include a zero check at the start and at the finish of each recording. When this test is performed in conjunction with a Class B inspection, it should be done after the maintenance work is complete and the station is returned to service. The recording must be properly identified as to location, date, reason for test and special comments, as required. The chart must be initialed by the person performing the test.
 - C. Permanent pressure recorder and portable pressure recorder shall be calibrated on an annual basis.
 - D. For HPR-type district regulator stations, a 16-hour recorded pressure check is not required.

Class B Inspection - Internal

1. Before disassembly of any equipment components, verify that the components are depressurized, and the spring tensions in the components are relaxed.
2. Pilot-operated regulators
 - A. Inspect pilot filters, strainers and dehydrators. Clean or replace screens, elements or filters.
 - B. Inspect the pilot orifice for scoring or wear, and replace as needed.
 - C. Replace the diaphragm, gasket, O-ring and seat.
 - D. Remove restricting devices on the pilot control loop, examine or test for obstructions or foreign matter, and replace the O-ring.
 - E. Test the pilot for mechanical operation including freedom and movement of linkage.

3. Control and vent lines

- A. Disconnect and clear the loading, supply, static, vent and gauge lines.
- B. Pressure-test the vent lines and upper diaphragm of regulators for leaks on low-pressure regulator stations that are below grade. The pressure test can be done with an air, nitrogen or natural gas medium at 1 to 2 psig held for several minutes. Confirm the integrity of components by soap-testing or testing with a pressure gauge.
- C. Remove restricting devices and examine or test for obstructions or foreign matter.

4. Main components (pilot-operated regulators)

The paragraphs that follow prescribe maintenance requirements for main regulators, standby regulators, monitors and relief valves as applicable. Automatic shutoff devices need not be disassembled unless they do not maintain consistent shutoff pressures.

- A. Plug or ball-type valve assembly - refer to GS&S F-11 and the manufacturer's recommendations for lubrication guidance.
- B. All others - disassemble and inspect in accordance with the manufacturer's guidelines.
- C. Replace the diaphragm, O-ring seals and gaskets.
- D. After assembly, soap-test before conducting the operating tests, as specified for a Class A inspection.

5. Non-pilot-operated regulators

- A. Disassemble in accordance with the manufacturer's guidelines.
- B. Replace the diaphragm, O-ring seals, gaskets and seat.
- C. Inspect the orifice(s) for scoring or wear, and replace as needed.
- D. After assembly, soap-test before conducting the operating tests, as specified for a Class A inspection.

6. Equipment position

At the completion of every inspection, make certain that all valves and equipment are returned to the normal operating position.

**Attachment 3
Regulator Station Maintenance and Data Forms**



**Pacific Gas and Electric Company
District Regulator Data Sheet**

626271 (01/01)
Gas Distribution
Page 1 of 2

Division _____ Gas FM No. _____ Associated FM No.(s) _____
 Location _____ Wall Map , Plat, Block _____
 Job No. References _____ Stage _____
 Installation Date _____ Date of Last Major Alteration _____
 Inlet Pressure: MAOP _____ Norm _____ Outlet Press: MAOP _____ Norm _____ Load Mcf/Hr.: Max _____ Min _____

Run- Left, Middle, Right, Top, or Bottom (Looking Downstream) :					
		UPSTREAM DEVICES	DOWNSTREAM DEVICES	RELIEF VALVE	AUTOMATIC SHUTOFF
Manufacturer					
Serial Number					
Model					
Size / Flange Type					
Inlet Pressure Rating					
Outlet Pressure Rating					
Head (Diaphragm) Size					
Orifice Size or Core Capacity					
Valve Seat or Boot Material					
Main Spring Range					
Pilot	Manufacturer				
	Model				
	Spring Range				
	Orifice Size				
	Filter Type				
Other Equipment	Restrictor Type				

Line Filter				
Size	GWP	Make	Model	Filter Element, Type

Pressure Recording Device				
Manufacturer	Serial No.	Model	Range(s)	Chart No. and Rotation

Station Valves							
	Valve No	Size	Type	Manufacturer	Figure No.	Connection Type & Flg Rating	Max. Working Press.
Valve							
Valve							
Valve							
Valve							
Valve							
Valve							
Outlet Fire Valve							
Inlet Fire Valve	Use Valve Maintenance Record Form FF11						

Enclosure	
Above Ground () Vault ()	Dimensions _____ x _____ x _____ Cu. Ft. _____ Type Construction _____ Type Closure _____

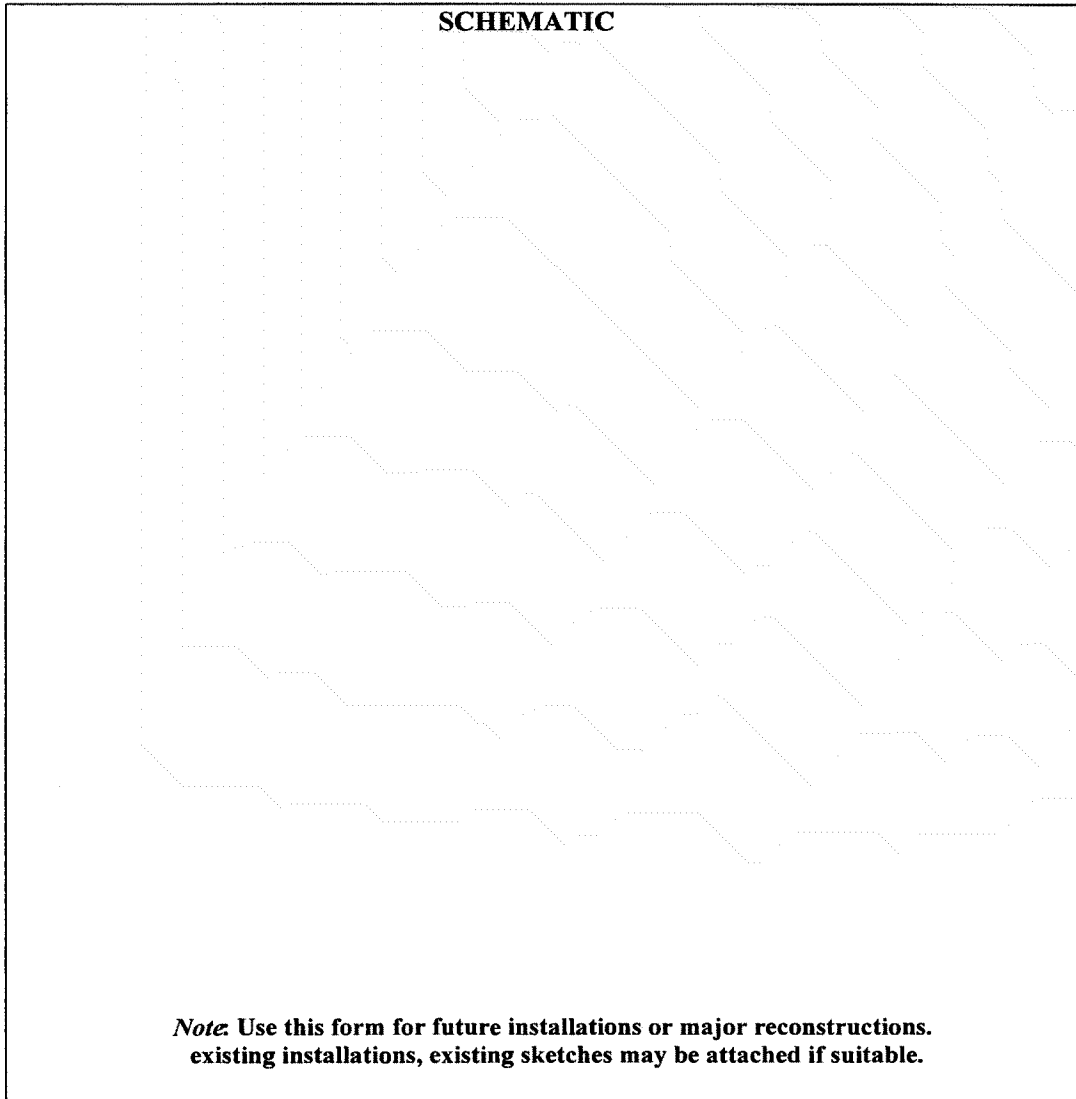
**Figure 1a.
District Regulator Data Sheet
Code 626271**

Attachment 3
Regulator Station Maintenance and Data Forms



Pacific Gas and Electric Company
District Regulator Data Sheet

626271 (01/01)
Gas Distribution
Page 2 of 2



**Figure 1b.
District Regulator Data Sheet
Code 626271**

**Attachment 3
Regulator Station Maintenance and Data Forms**



**Pacific Gas and Electric Company
District Regulator Station Maintenance Record**

626321 (01/01)
Gas Distribution
Page 1 of 2

Gas FM Station No. _____ Division _____ Wall Map, Plat, Block _____

Location _____ Stage _____

Associated FM No(s) _____

Run:							
Left, Middle, Right, Top, or Bottom (Looking Downstream)							
Employee Initial:							
Date:							

DCS Standard C-T&S S-5351 Paragraph	Task Description	Result					
A1A	Fire Valve Accessible and Operated	y,n					
A1B,C	Vault Cover and Surroundings	g,p					
A1D	Gas Leak Test	(% LEL)					
A1F	Vault Inspection	g,p					
A1E	Ventilating System & Relief Stacks	g,p					
A1H	Locking Devices Present And Operational	y,n					
A2G	Station Valves Checked	y,n					
A1G	Piping Condition	g,p					

As Found and As Left Settings			AF	AL	AF	AL	AF	AL	AF	AL	AF	AL
A2B	Filter Differential	PSI,W.C.										
A2C	Regulator Pressure Setting	PSI, W.C.										
	Secondary Pilot Setting (Regulator)*	PSI, W.C.										
A2E	Regulator Lockup	y,n										
	OPP Upstream or Downstream	U,D										
A2D	Monitor Control Pressure	PSI, W.C.										
A2E	Monitor Lockup	y,n										
A2C	Working Monitor Pilot Pressure	PSI, W.C.										
A2D	Secondary Pilot Setting (Monitor)*	PSI, W.C.										
A2D2	Relief Cracking Pressure	PSI, W.C.										
A2D3	Automatic Shutoff Overpressure Setting	PSI, W.C.										
	Automatic Shutoff Underpressure Setting	PSI, W.C.										
A2F	Inspect and Clear Vent Lines	y,n										
A3B,C	Pressure Recorder- 2pt	2										
(OVER)	Was Any Corrective Maintenance Done?	y,n										
A2H	Return All Equipment, Valves and Locks to Normal Operation and Position	y,n										

A2B2	Station Filter - Internal	y,n										
B4A,B,C,D	Regulator	y,n										
B4A,B,C,D	Overpressure Protection Device	y,n										
B3B	Pressure Test Vent & Diaphragm (L.P.)	y,n										
B2A,B,C	Regulator Pilot Control Loop (s)	y,n										
D,E	OPP Pilot Control Loop (s)	y,n										
	Working Monitor Pilot	y,n										

MAOP, Station Drawings and Data Sheet Been Updated y,n

Enter yes, no, good, poor, pressure or % LEL; control loop includes filter, variable restrictor, and tubing; (line out all non-applicable boxes).

On back of this form show any corrective work done, other than inspection and testing:

- | | |
|--|--|
| 1. Pressure setting changes and reason | 4. Leak repairs or equipment repair |
| 2. Parts replacement and reason | 5. Miscellaneous work such as pumping pits, touch-up painting, filter blowdown or cleanout, etc. |
| 3. Component replacement ("District Regulator Data Sheet" must be updated) | 6. Valve flushed and/or greased |
- * Secondary Pilots used for special applications.

**Figure 2a.
District Regulator Station Maintenance Record, Front Side
Code 626321**

Attachment 3
Regulator Station Maintenance and Data Forms



Pacific Gas and Electric Company

District Regulator Station Maintenance Record (HPR type)

626321A (01/01)

Gas Distribution
Page 1 of 2

Gas FM Station No. _____ Division _____ Wall Map, Plat, Block _____

Location _____ Stage _____

Associated FM No(s) _____

Run: Left, Middle, Right, Top, or Bottom (Looking Downstream)						
Employee Initial:						
Date:						

DCS Standard C-T&S S-5351 Paragraph	Task Description	Result						
A1A	Fire Valve Accessible and Operated	y,n						
A1B,C	Vault Cover and Surroundings	g,p						
A1D	Gas Leak Test	(% LEL)						
A1F	Vault Inspection	g,p						
A1E	Ventilating System & Relief Stacks	g,p						
A1H	Locking Devices Present And Operational	y,n						
A2G	Station Valves Checked	y,n						
A1G	Piping Condition	g,p						

As Found and As Left Settings			AF	AL	AF	AL	AF	AL	AF	AL	AF	AL
A2C	Station Pressure Setting	PSI, W.C.										
A2E	Regulator Lockup	y,n										
A2D	Monitor control Pressure	PSI, W.C.										
A2E	Monitor Lockup	PSI, W.C.										
	OPP Upstream or Downstream	U,D										
A2D2	Relief Cracking Pressure	PSI, W.C.										
A2F	Inspect and Clear Vent Lines	y,n										
A3D	Pressure Recorder, 2pt	y,n										
(OVER)	Was Any Corrective Maintenance Work Done?	y,n										
A2H	Return All Equipment, Valves and Locks to Normal Operation and Position	y,n										

Enter yes, no; good, poor; pressure or % LEL; control loop includes filter, variable restrictor, and tubing; (line out all non-applicable boxes).
On back of this form show any corrective work done, other than inspection and testing:

1. Pressure setting changes and reason
2. Parts replacement and reason
3. Component replacement ("District Regulator Data Sheet" must be updated)
4. Leak repairs or equipment repair
5. Miscellaneous work such as pumping pits, touch-up painting, filter blowdown or cleanout, etc.
6. Valves flushed and/or greased

* Component replacement is also to be posted on "District Regulator Data Sheet"

Figure 3a.
District Regulator Station Maintenance Record (HPR Type), Front Side
Code 626321A

