STATE OF CALIFORNIA
ARNOLD SCHWARZENEGGER, *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

December 30, 2010

GA2010-12

Mr. Glen Carter, Director
Gas Engineering
Pacific Gas and Electric Company
375 North Wiget Lane
Walnut Creek, CA 94598

SUBJECT: General Order 112-E Audit of PG&E's North Valley Division

Dear Mr. Carter:

On behalf of the Utilities Safety and Reliability Branch of the California Public Utilities Commission, Sunil Shori and I conducted a General Order (GO) 112-E Inspection of PG&E's North Valley Division from June 28 through July 2, 2010. The audit included a review of the records for the period 2008 and 2009 and field inspections in the North Valley Division.

During the audit, we identified violations of GO 112-E. A copy of the inspection summary itemizing the violations is enclosed. Please note that the violations included within the Audit Summary may differ from the potential violations discussed with PG&E's representatives during the exit meeting of our audit. Any differences are generally attributed to research, conducted subsequent to the audit, which can result in some potential violations being excluded and other violations, not discussed during the exit meeting, being included in the Audit Summary.

Within 30 days of your receipt of this letter, please provide a written response indicating the measures taken by PG&E to address the violations noted in the Audit Summary and the date they were corrected.

If you have any questions, please contact me at (916) 928-3826.

Sincerely,

Banu Acimis, P.E.
Utilities Engineer
Utilities Safety and Reliability Branch
Consumer Protection and Safety Division

Enclosure: Audit Summary
Copy: Larry Berg – Pacific Gas and Electric Company
Ed Wong – Pacific Gas and Electric Company
Heidi Lydon – Pacific Gas and Electric Company
Zachary Raby – Pacific Gas and Electric Company

AUDIT SUMMARY

Prior to the start of the audit, PG&E provided the results of its internal review audit of North Valley Division records with an Internal Review Summary Table (IRST). During the audit, we discussed details of the PG&E's internal findings and reviewed related records. The following violations consist of some deficiencies PG&E identified and other violations that we found as a result of the audit.

Please provide a status update on items presented in the IRST that were still pending corrective actions as of the last day of the audit.

A. NORTH VALLEY DIVISION - NORTH

I. Title 49 Code of Federal Regulations (49 CFR) §192.13 General

§192.13(c) requires that "Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part."

A. PG&E Utility Work Procedure (WP) 4133-02, Cathodic Protection Area Assessment/ Resurvey Procedures for Gas Distribution requires that "1. General: Review CPAs, as defined in this work procedure, at least once every 6 nominal years.

We found that PG&E exceeded the 6-year maximum allowed time period to resurvey the Cathodic Protection Areas (CPAs) shown in Table 1 per PG&E WP 4133-02.

Table 1- Late CPA Resurveys

CPA	Survey date	Resurvey date
1360-02	02/13/2002	12/14 2009
1080-04	10/20/2003	-
1150-05	10/20/2003	-
1150-07	06/09/2003	-
1563-01A	10/21/2003	-

In addition, many CPAs were noted as being due for full resurveys such as 1011-02, 1361-03, and 1770-01.

PG&E needs to resurvey its CPAs, in compliance with its standards to assure that all subsurface metallic gas pipeline facilities continue receiving cathodic protection in compliance with Title 49 CFR, Part 192.

B. PG&E's Corrosion Control of Gas Facilities, O-16, General Information, 2. Designing and Installing Cathodic Protection Areas (CPAs), Item O requires "... The corrosion mechanic will obtain pipe-to-soil potential measurements for all affected underground steel facilities and will record the levels found on the as-built drawings. Each applicable construction drawing associated with a construction project must be stamped with the stamp shown in Figure 1 on Page 5. A corrosion mechanic or other qualified employee must certify that all gas-carrying underground steel facilities affected by the construction

are adequately cathodically protected before closing out the job by signing the job copy stamp shown below..."

Job #30653986, McMurray Drive, in Anderson did not indicate that steel facilities were inspected for cathodic protection levels, by a qualified individual, prior to closing of the job order.

C. PG&E's Utility Work Procedure (WP) 4100-11, Deactivation and/or Retirement of Underground Gas Facilities, Gas Transmission and Distribution (effective date: October 2008) establishes the responsibilities, requirements, and procedures to deactivate underground gas gathering lines, gas transmission lines, gas distribution mains, gas services, and disconnecting services in conformance with Title 49 CFR, Part 192.727.

WP 4100-11 requires that
"3. Deactivating Transmission Lines, Gathering Lines, and Distribution Mains
A. General Procedures
3) Purge all pipe sections to be deactivated of natural gas in accordance with Numbered Document A-38, "Procedures for Purging Gas Facilities."

PG&E's Procedures for Purging Gas Facilities, A-38 requires that
"General Information
1. Purging is required when:
C. ...Company policy requires that all sections of abandoned main be purged..."

During the review of deactivation records, we found that Service Order #15921 (PM #30657094), which cut-off and abandoned 14-feet of 4-inch main on 09/30/2008, did not result in purging the line of gas.

D. PG&E's Gas Standard, Polyethylene Pipe Specifications and design considerations, A-93 describes the use and design of PE pipe and tubing for use in PG&E's gas distribution system. A-93 requires that
"Storage:
21. PE 2406/2708 yellow colored pipe and tubing may be stored outdoors and uncovered for no longer than 3 years from the date the pipe was manufactured (the date printed on the pipe)..."

During field examination of an uncovered 2-inch PE pipe (pipe marked with the date of 01/26/2007) outside in the Redding Yard on July 1, 2010, we found that the pipe had exceeded its 3-year outdoor storage life. In accordance with Gas Standard A-93, Item 21, North Valley – North (Redding) was directed that the pipe could not be used for gas use.

PG&E needs to ensure that no other expired pipe segments are stored in any of the pipe storage facilities in North Valley Division.

E. PG&E's Utility Standard: TD-4350S, Odorization of Natural Gas Requirements requires that
"4. Odor Intensity Tests:
4.6. Gas odor must be readily detectable at a concentration of 0.6% gas-in-air or less.

4.7. If gas odor is not readily detectable at 0.6% gas-in-air, the person conducting the test must immediately notify the appropriate supervisor. The supervisor may verify the reading, if appropriate, and must immediately notify the GT district supervisor and/or the M&C distribution gas T&R supervisor, who ensure that immediate and continuing actions are taken to restore adequate odor concentration levels.

6. Response to High or Low Odorant Concentration
6.1 In response to reports of high or low odorant concentration levels, immediate action must be initiated to investigate and take necessary corrective measures.
6.2 Upon receipt of a report of low odorant concentration, the district must initiate immediate and continuing actions to restore adequate odorant concentration levels to provide properly odorized gas. SGC and the affected distribution operating employees must be notified of the situation. SGC coordinates communication between the GT gas quality on-call group, M&C districts, and affected distribution locations."

North Valley Division – North conducted odor intensity tests at City of Shasta Lake and Paradise Distribution. The odor intensity test results indicated that gas odor was not detectable at 0.6% gas-in-air at 48 test locations. We noted that PG&E failed to follow-up on low readings to initiate an investigation and take necessary corrective measures to restore adequate odorant concentration levels in order to provide properly odorized gas when personnel recorded low odorant concentrations.

F. PG&E's Gas T&D FD-30-B, Welder Qualification for Under 20% of SMYS form, requires an employee's supervisor to be notified of any failure when an employee is tested for welder qualification. On 08/04/2009, Stephen Ballinger did not pass two of the root bend test. His supervisor was not informed as required.

II. Title 49 CFR §192.605(a) Procedural manual for operations, maintenance, and emergencies.

§192.605(a) requires that "General. Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. For transmission lines, the manual must also include procedures for handling abnormal operations. This manual must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least once each calendar year..."

Due to management changes, North Valley Division - North did not review its emergency plan in 2008 or 2009.

III. Title 49 CFR §192.615(a)(4) Emergency plans.

§192.615 requires that "(a) Each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:

(4) The availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency."

PG&E's Gas Emergency Plan (GEP), Section 2.5 Gas Emergency Supplies defines the requirements and responsibilities for stocking and maintaining, tools, and equipment that may be needed to respond to a gas emergency. GEP Section 2.5.1 Gas Emergency Material requires that "Local operating departments must have sufficient materials readily available to

respond to gas emergencies. Local Operating departments must annually plan and conduct a review of gas emergency stock needs and ensure that the necessary materials are on-hand..."

During the review of the materials inventory check records for emergency supplies we found that the following tools were not available as required:

- Two 8-inch Skinner Clamps (024168) (Standard B-53). None were available;
- Three 8-inch X 24-inch Weld Cans (040487) (Standard A-62). None were available.

PG&E needs to ensure that gas emergency equipment and tools are readily available to be used to respond to gas emergencies.

IV. Title 49 CFR §192.703 General.

§192.703 requires that

"(b) Each segment of pipeline that becomes unsafe must be replaced, repaired, or removed from service."

Division has experienced significant sulfur build-up in regulating stations through previous years. These included FM53; FM99, and FM 67, which experienced sulfur build-up in 2009. The North Valley Regulator Station Sulfur Information noted many other instances going back as far as 2005 in which sulfur has been found in stations. Several of the instances noted "excessive" amounts of sulfur within the equipment and, in some cases, the sulfur preventing the equipment from achieving lock-up. In some cases, the Division has installed sulfur filtering devices; and the number of instances in which sulfur was found in equipment appeared to decrease starting in 2008. However, maintenance performed since 2008, and as late as April 2010, continues to note high levels of sulfur in the equipment. The records reviewed did not provide any documented effort by the Division to determine the potential causes of the excessive sulfur deposits, and what more may need to be done within the Division to prevent sulfur from potentially affecting the operation of pressure regulating equipment.

PG&E needs to take necessary preventive and mitigative actions to prevent any failures that may be caused by sulfur problems observed on the parts of the regulators and monitors.

V. <u>Title 49 CFR §192.723 Distribution systems: Leakage surveys.</u>

§192.723 requires that

"(a) Each operator of a distribution system shall conduct periodic leakage surveys in accordance with this section.

(b) The type and scope of the leakage control program must be determined by the nature of the operations and the local conditions, but it must meet the following minimum requirements:

> (1) A leakage survey with leak detector equipment must be conducted in business districts, including tests of the atmosphere in gas, electric, telephone, sewer, and water system manholes, at cracks in pavement and sidewalks, and at other locations providing an opportunity for finding gas leaks, at intervals not exceeding 15 months, but at least once each calendar year."

A. PG&E installed a service line to 520 Adobe Road, hotel, in 2005. However, Map 1360-H8 was not updated and the service was not placed on an annual leak survey until 2009. As a result, annual surveys of this service were missed for 4 years.

B. PG&E did not conduct the annual leak survey on Executive Way, Plat 1080-DR in 2009.

B. NORTH VALLEY DIVISION - SOUTH

I. Title 49 Code of Federal Regulations (49 CFR) §192.13 General

§192.13(c) requires that "Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part."

A. Utility Work Procedure (WP) 4412-07, Patrolling Pipelines, Stations, and Mains, Detailed Procedure for Patrolling Pipelines, Stations, and Mains: 6. Corrective Actions requires that "When possible during the patrol, take corrective actions to address conditions found. For conditions that require immediate attention and cannot be corrected during the patrol, contact the responsible supervisor or superintendent as soon as possible to have the condition addressed. Corrective actions for conditions that require follow-up attention that can be deferred must be completed before the next patrol and no later than the end of the year following the year of discovery (e.g., conditions found in year one must be addressed no later than the end of year two)."

The following gas pipeline aerial patrol reports for 2008 and 2009 showed that pipeline markers were missing and noted to be installed for the transmission lines listed below. However, PG&E did not install the line markers by the end of the year following the year of discovery.

- Pipeline No: DFM 1027-01 through 17, from Richvale Wye to Oroville Co-Gen, Dates of pipeline patrols which identified missing pipeline markers: Initial discovery date: 8/8/08, following patrol dates: 12/4/08, 2/11/09, 5/6/09, 8/28/09, 12/16/09, still pending.
- Pipeline No: DFM 1026-01, from Willows Reg Station to Ritz Warehouse, Dates of pipeline patrols which identified missing pipeline markers: Initial discovery date: 8/8/08, following patrol dates: 12/8/08, 2/6/09, 5/4/09, 8/26/09, 11/9/09, missing pipeline marker was installed on 2/9/10.

B. PG&E's Gas Standards and Specifications Manual, M-Tools, Equipment, and Instruments, M-53.3-Verifying the calibration of portable Combustible Gas Indicators, Hydrogen Flame Ionization Units, Optical Methane Detectors, and Remote Methane Leak Detectors states that Combustible Gas Indicators (CGIs) are required to be calibrated at least once a month while units are in service.

IRST showed that a number of CGIs were not calibrated in 2008. We reviewed the records and identified that the following CGIs with serial numbers given below were not calibrated in January, February, and March in 2008 in Chico.

- 9848-050-036
- 0135051818
- 0142052040

- 0142052048

C. PG&E's Utility Work Procedure (WP) 4412-02: Locating Instruments Calibration Verification and Repair Procedures, Section 2- Calibration Verification states that "Calibration verification of all pipe and cable locating instruments are required to be conducted once each calendar month."

IRST showed that a number of pipe and cable locating instruments were not calibrated in 2009. We reviewed the records and identified that the following pipe and cable locating instruments shown in Table 2 were not calibrated in Chico in accordance with PG&E's requirements.

Table 2- Pipe and Cable Locating Instruments that were not calibrated monthly in 2009

Serial Number	Missed Calibration
12717	from January through August
003272	from February through December
005109	from February through December
005112	from February through December
44932	March, and August through December
46115	March
4266-Transmitter 12449-Receiver	March, and September through December
005978, 010836	March
010836, 014361	March

II. Title 49 CFR §192.465 (a) External Corrosion Control: Monitoring

§192.465(a) requires that "Each pipeline that is under cathodic protection must be tested at least once each calendar year, but with intervals not exceeding 15 months, to determine whether the cathodic protection meets the requirements of §192.463. However, if tests at those intervals are impractical for separately protected short sections of mains or transmission lines, not in excess of 100 ft (30 meters), or separately protected service lines, these pipelines may be surveyed on a sampling basis. At least 10 percent of these protected structures, distributed over the entire system must be surveyed each calendar year, with a different 10 percent checked each subsequent year, so that the entire system is tested in each 10-year period."

IRST showed that in 2008, PG&E failed to take pipe-to-soil (P/S) potential readings at all locations that were 10 % of the total number of isolated main and transmission lines which were separately protected. During the review of external corrosion protection records we noted that there were a total of 146 isolated main and transmission line locations (10 % of the total number of 1463 locations required to be completed in 10 years) that needed to be monitored in 2008. However, PG&E recorded P/S potentials at only 54 locations and the remaining 92 locations were not completed in 2008. PG&E informed us that P/S potentials of the remaining 92 isolated pipe sections were completed in 2009.

III. Title 49 CFR § 192.467 External corrosion control: Electrical isolation.

§192.467(a) requires that "Each buried or submerged pipeline must be electrically isolated from other underground metallic structures, unless the pipeline and the other structures are electrically interconnected and cathodically protected as a single unit."

§192.467(d) requires that "Inspection and electrical tests must be made to assure that electrical isolation is adequate."

PG&E's Utility Work Procedure (WP) 4133-03, Testing Procedures for Pipe Casing, 4-Testing Procedures for Pipe Casing requires that

> "C. Conduct tests or reviews when the difference between the casing and the carrier pipe pipe-to-soil potentials are less than 100 millivolts (mV) and/or when casing P/S potentials are greater than 800 mV.
> D. A detailed investigation of suspected contact between a pipe and casing is usually conducted in response to information collected during regular monitoring of the pipeline..."

PG&E's Utility WP 4133-04, Remediating Casing Contacts, 4-Remediation Procedures requires that

> "A. Perform remediation work in accordance with this WP.
> B. Prepare an action plan for investigation and remediation for cased pipeline crossings suspected to have an electrical contact between the case and pipeline.
> C. Maintain and keep current the action plan in accordance with the requirements of Numbered Document O-16, Corrosion Control of Gas Facilities."

During the review of external corrosion records, we reviewed casing-to-soil (C/S) potentials and identified higher potentials shown in Table 3 which indicate that there is no electrical isolation of the casing from the pipe. According to PG&E's standard, if the C/S potential is equal to or more negative than -800 mV, PG&E is required to start an investigation of possible contacted cased pipeline crossing and remediation of the crossings that are confirmed to have contacted cases.

PG&E identified the electrical isolation problems at locations shown in Table 3; however, PG&E did not take any remedial actions to correct the deficiencies at locations other than the ones identified in the footnote.

Table 3- High C/S potentials recorded in North Valley Division

Location	Line Number	CPA	C/S (mV)	P/S (mV)	Date Recorded (mm/yy)
Richvale Wye	50	10L050	1028	1028	10/07
Richvale Wye	50	10L050	954	954	10/10/08
Richvale Wye	50	10L050	902	903	11/18/09*
Hwy 99 N/O Hwy 162	50	10L050	809	1018	10/10/08
Hwy 99 N/O Shippee Rd.	50	10L050	840	911	1/06

Location	Line Number	CPA	C/S (mV)	P/S (mV)	Date Recorded (mm/yy)
Hwy 99 N/O Shippee Rd.	50	10L050	800	1013	10/07
Hwy 99 N/O Shippee Rd.	50	10L050	802	971	1/08**
Hwy 99 N/O Nelson-Shippee Rd.	50	10L050	807	N/A	10/10/08
Hwy 45 @ Rd. 29	128	10L128	1008	1011	10/06
Hwy 45 @ Rd. 29	128	10L128	960	1075	10/07
Hwy 45 @ Rd. 29	128	10L128	999	1002	10/10/08
Hwy 45 @ Rd. 29	128	10L128	1060	1072	11/18/09*

*PG&E identified the electrical isolation problem on December 2, 2009 and included this location to PG&E's contacted case remediation program. However, the problem has not been remediated as of July 2, 2010.
**PG&E excavated and inspected this location in 2008 as part of PG&E's pipeline integrity program. The problem was resolved 2 years after the initial discovery by removing water from the casing and installing new end seals.

PG&E needs to take prompt remedial action to resolve the electrical isolation problem at all locations.

IV. Title 49 CFR § 192.503 General requirements

§192.503 (a) requires that "No person may operate a new segment of pipeline, or return to service a segment of pipeline that has been relocated or replaced, until -

"(1) It has been tested in accordance with this subpart and §192.619 to substantiate the maximum allowable operating pressure; and

"(2) Each potentially hazardous leak has been located and eliminated."

§ 192.725 Test requirements for reinstating service lines requires that

"(a) Except as provided in paragraph (b) of this section, each disconnected service line must be tested in the same manner as a new service line, before being reinstated.

(b) Each service line temporarily disconnected from the main must be tested from the point of disconnection to the service line valve in the same manner as a new service line, before reconnecting. However, if provisions are made to maintain continuous service, such as by installation of a bypass, any part of the original service line used to maintain continuous service need not be tested."

IRST showed that the following segments of pipeline were leak repaired without a pressure test performed or the pressure test was not properly documented on the forms. PG&E crews marked the pretest box on the second page of gas digin incident report (Form A1) but they did not provide any other information to verify that new pipe segment was pretested before installation or new segments of pipe were pressure tested after relocated or replaced and prior to reinstating service lines. There was not sufficient information available to verify the compliance with requirements.

A. On February 19, 2008, PG&E crews replaced 18 inches of ½-inch PE service pipe to make repairs of the gas leak No:0820009-01 which was caused by dig-in activities at 703 Oaklawn Avenue in Chico. According to Form A1, gas pipe was pre-tested at 110 psig for 10 minutes on February 16, 2008; however, we did not find any documentation related to the pretest. Form A1 also indicated that no on-site pressure test was conducted after the leak repair was completed.

B. Division's Form A1 and leak repair records for gas leak No:0830006-1 showed that on April 7, 2008, PG&E crews replaced 6 inches of ½-inch polyethylene pipe (PE) to repair the gas leak caused by dig-in activities at 194 Valley Ridge Drive in Paradise. According to Form A1, the gas pipe was pre-tested at 110 psig for 10 minutes on April 7, 2008; however, we did not find any documentation related to the pretest. Form A1 also indicated that no on-site pressure test was conducted after the leak repair was completed.

C. Similarly, on March 16, 2008, PG&E crews replaced 16 inches of ½-inch PE with two MetFit couplings to make repairs of the gas leak No:0852577-1 which was caused by dig-in activities at 1953 Mountain Vista Drive in Thermalito. According to Form A1, the gas pipe was pre-tested at 110 psig for 5 minutes on March 16, 2008; however, we did not find any documentation related to the pretest. Form A1 also indicated that no on-site pressure test was conducted after the leak repair was completed.

D. On August 12, 2009, PG&E crews replaced 18 inches of ½-inch PE to make repairs of the gas leak No:0960105-1 which was caused by dig-in activities at 110 Highway 99 at 110 E. Spruce Street in Gridley. According to Form A1, the gas pipe was pre-tested at 110 psig for 10 minutes on August 12, 2009; however, we did not find any documentation related to the pretest. Form A1 also indicated that no on-site pressure test was conducted after the leak repair was completed.

E. PG&E crews completed the leak repairs shown in Table 4. On-site test box located on the third page of the Leak Survey, Repair, Inspection, and Gas Quarterly Incident Report (Form A) was marked; however, no other information such as test pressure or duration was noted on Form As. Table 4 shows the details of these leak repairs.

Table 4 – Gas Leak repairs which were not pressure tested in 2008 and 2009

Leak Number	Leak Address	Type & size of pipe installed	Date of repair	Pre-Test Data	On-site Pressure Test Data
0840032-1	243 E. Tehama St., Orland	8 inches of ¾ - inch steel riser	7/19/08	NA	Soap test
0852565-1	1977 Veatch St., Oroville	1-foot of ½ - inch PE pipe	9/30/08	NA	Soap test
0930010-01	779 Bille Rd., Paradise	6 feet of ½ - inch PE service pipe and ½ - inch PE service tee	3/26/09	NA	Soap test
0920221-1	1125 W. 9th St., Chico	18 inches of 1-¼ -inch PE service pipe and riser	6/2/09	NA	Soap test

PG&E needs to ensure that the pipeline segments mentioned above are tested as required by Title 49 CFR § 192.503 (a) and § 192.725 (a) and (b). If these sections were not pressure tested or proper test information was not documented prior to reinstating gas service, PG&E needs to excavate and conduct pressure tests as soon as possible. Please provide a status update on this item.

V. Title 49 CFR §192.739 Pressure limiting and regulating stations: Inspection and testing

§192.739 (a) requires that "Each pressure limiting station, relief device (except rupture discs), and pressure regulating station and its equipment must be subjected at intervals not exceeding 15 months, but at least once each calendar year, to inspections and tests to determine that it is -

"(1) In good mechanical condition;

"(2) Adequate from the standpoint of capacity and reliability of operation for the service in which it is employed;"

IRST showed that Regulator Station ORB-38 located on East Gridley Road and Highway 99 in Oroville District was not inspected in the calendar year 2009. District regulator station maintenance records showed it was previously inspected on September 11, 2008. PG&E performed the following inspection of Regulator Station ORB-38 on April 15, 2010.

VI. Title 49 CFR §192.747 Valve maintenance: Distribution systems.

§192.747(a) requires that "Each valve, the use of which may be necessary for the safe operation of a distribution system, must be checked and serviced at intervals not exceeding 15 months, but at least once each calendar year."

IRST showed that Regulator Station Valve No. 54 located at District Station No. R-005 in Hamilton City at Line 177 was inspected and lubricated on May 6, 2010 during the maintenance of the Regulator Station. PG&E crews noted that they needed to go back with help to maintain Valve No: 54 on a later date. During our field visit on July 1, 2010, we observed that PG&E crews failed to turn this valve due to the existing problem.

Please inform us when the maintenance of Valve No: 54 is completed to ensure that it is in operable condition.

OBSERVATIONS AND CONCERNS

A. NORTH VALLEY DIVISION - NORTH

I. 49 CFR §192.463 External corrosion control: Cathodic protection.

§192.463(a) requires that "Each cathodic protection system required by this subpart must provide a level of cathodic protection that compiles with one or more of the applicable criteria contained in appendix D of this part. If none of these criteria is applicable, the cathodic protection system must provide a level of cathodic protection at least equal to that provided by compliance with one or more of the criteria."

During our field check, P/S readings at R-253 located on Smith Road and at 1830 Hilltop (Red Lion) were found to be negative 0.677 volts and 0.815 volts respectively.

PG&E needs to take prompt remedial actions to correct the deficiencies at these locations.

II. We found that low pressure system in Red Bluff hit close to 6.5 inches of water-column pressure. The capacity of this system should be further reviewed for safety and reliability concerns. We recommend that the Division and PG&E in general place the maximum torque values directly on the valve cards in addition to the various standards where the calculation/determination of this value may also be addressed. The placement of the value directly on the valve cards would provide a convenient confirmation of the torque not to be exceeded on the particular valves being maintained or operated.

B. NORTH VALLEY DIVISION - SOUTH

I. 49 CFR §192.463 External corrosion control: Cathodic protection.

§192.463(a) requires that "Each cathodic protection system required by this subpart must provide a level of cathodic protection that compiles with one or more of the applicable criteria contained in appendix D of this part. If none of these criteria is applicable, the cathodic protection system must provide a level of cathodic protection at least equal to that provided by compliance with one or more of the criteria."

During our field check, P/S readings at the locations given in Table 5 were found to be below the -0.85 volts criteria. PG&E informed us that PG&E has started to remedy the deficiencies as indicated under remedial action type and date column.

Table 5 – Field P/S readings found below adequate level of protection

Location	CP System No	P/S Reading (Volts)	P/S Reading Date	Remedial Action Type and Date
6149 Laurel Dr., Paradise	Part of 10%	-0.827	June 30, 2010	New anode was installed on June 30, 2010,
5353 Sawmill Dr., Paradise	10P004	-0.832	June 30, 2010	Clear illegal bond, area has been down since May 14, 2010 and expected to be completed by July 15, 2010.
1237 Ivy Street, Chico	10C026	-0.533	July 1, 2010	Repair broken anode wire, area has been down since September 14, 2009, and expected to be completed by July 15, 2010.
521 Arcadian Avenue, Chico	10C021	-0.845	July 1, 2010	Clear contact, area has been down since May 13, 2010, and expected to be completed by July 15, 2010.

II. During the review of the valve maintenance records, we found that some valve cards were not filled out completely and properly to present essential information about valves such as Make/Model, Type, Press Rating, Serial number, Recommended Lubricant/Sealant, Recommended Stem Packing Material, Actuator Type, Wrench (Key) Size, Type (quarter or multi turn) and Number of turns. Some of these valves are V-9.61, V-0.86, V-0.86 (A), V-0.86 (B).

PG&E needs to ensure that valve information data fields on the cards are filled out completely and accurately to provide important information about valves.

III. On June 30, 2010, during our field check, we recorded 0.89 amps for Rectifier No: 100043 in CP System No: 10P004 located at Berkshire w/o Diamond in Paradise. Standard cathodic protection maintenance record showed that interference test value for this rectifier is 0.65 amps.

Additionally, on June 30, 2010, we found that the rectifier DC amps reading was 0.69 amps whereas the interference test result on the standard cathodic protection maintenance report showed 0.65 amps for Rectifier No: 100060 in CP System No: 10P003 located at Birch e/o Foster in Paradise.

PG&E needs to ensure that sufficient current is provided to the pipeline system by installing a correct size of rectifiers at these locations.