STATE OF CALIFORNIA ARNOLD SCHWARZENEGGER, *Governor*

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

June 24, 2010 GA2010-10

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 Sacramento Division

Dear Mr. Carter:

On behalf of the Utilities Safety and Reliability Branch of the California Public Utilities Commission, Ivan Garcia, Ryan Yamamoto, and I conducted a General Order (GO) 112-E Inspection of PG&E's Sacramento Division from May 17 through 21, 2010. The audit included a review of Sacramento Division records for the period 2008 and 2009 and field inspections of the Sacramento, Solano, and Yolo districts.

During the audit, we identified violations of GO 112-E. A copy of the inspection summary itemizing the violations is enclosed. Please advise me no later than August 6, 2010, by electronic or hard copy of all corrective measures taken by PG&E regarding the violations and the date they were corrected.

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

Sincerely,

Banu Acimis
Utilities Engineer
Utilities Safety and Reliability Branch
Consumer Protection and Safety Division

Enclosure: Audit Summary

Copy: Larry Berg – Pacific Gas and Electric Company
Dwayne Lemmond – Pacific Gas and Electric Company

AUDIT SUMMARY

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's UO Standard S4110: Leak Survey and Repair of Gas Transmission and Distribution Facilities - Attachment 1 shows the allowable response time and the actions needed to be taken to repair and recheck all gas leaks. The leaks shown in Table 1 were either repaired or rechecked late.

Table 1 - Number of Leaks Repaired or Rechecked Late By Year and Grade

GRADING	2008		2009	
	Late Repair	Late Check	Late Repair	Late Check
1	-	-	-	4
2+	6	4	40	30
2	-	4	1	8
Total leaks	6	8	41	42

A total of 47 leaks were repaired late and 50 leaks were rechecked late from 2008 through 2009.

B. PG&E's UO Standard S4110: Leak Survey and Repair of Gas Transmission and Distribution Facilities - Attachment 1, requires that semi-annual gas leak surveys need to be conducted for transmission lines in Class 3 locations. Semi-annual frequency is defined as twice each calendar year and the interval between inspections shall not exceed 7-1/2 months. Tables 2 and 3 show the transmission lines with sequence numbers which were not leak surveyed semi-annually in 2008 and 2009 respectively.

Table 2 - Transmission line leak surveys not conduced semi-annually in 2008

Transmission Line	Domain Value	Sequence Number
L-108- South Sacramento Feeders	1404	23
L-119- North Sacramento Feeders	1405	53
Folsom Distribution Feeders	1402	32, 33, 36, 37, 38, 43, 44, 53, 54, 55, 68
*L-145 Taps	1407	all
*L-195 Taps	1410	all
L-210-Fairfield Feeders	1411	17, 32
L-400 Taps	1414	1, 2, 13

*Not leak surveyed in 2008.

Table 3 - Transmission line leak surveys not conduced semi-annually in 2009

Transmission Line	Domain Value	Sequence Number
L-210-Fairfield Feeders	1411	17, 32
Downtown Sacramento Feeders	1401	54
L-108- South Sacramento Feeders	1404	45
L-108- South Sacramento Feeders	1404	17*
L-119- North Sacramento Feeders	1405	30

*This sequence number was not leak surveyed annually.

C. PG&E's UO Standard S4110: Leak Survey and Repair of Gas Transmission and Distribution - Attachment 1, Approved Leak Survey and Repair Records, Forms, and Reports, Section 5.B states that "Evidence that all current mains and services have been surveyed is clearly indicated by marking over main and marking each service. Where there are a readily discernable number of distinct facilities that are scheduled for survey, the survey of these facilities can be noted on a list referenced to the map record where each facility is clearly noted."

Records showed that a total of 164 services were not highlighted during the 5-year leak surveys and 47 services were not highlighted during the annual leak surveys conducted from 2008 through 2009.

D. PG&E's UO Standard S4350: Odorization of Natural Gas, Section 6. A - Response to High or Low Odorant Concentration requires that in response to reports of high or low concentration levels, immediate action shall be initiated to investigate and take necessary corrective actions. Odor intensity report requires that "If the odor intensity reading is over 0.6 % gas in air (too weak), or below 0.1 % gas in air (too strong), a confirmation test with a different operator will be performed and the System Gas Control supervisor, or GT&D district supervisor, shall be notified immediately."

Records showed that odor intensity readings recorded at all locations in the Division on March 17, 2010 were higher than 0.6 % gas in air (too weak). These readings varied between 0.66 – 0.76 %. We found that neither the intensity readings were reviewed or approved by anyone, nor any confirmation test was conducted with a different operator. Additionally, the System Gas Control supervisor or the District Supervisor was not notified immediately as required by PG&E's UO S4350 standard.

E. PG&E's UO Standard S4350: Odorization of Natural Gas, Attachment 4 states that weekly odorization tests are required to be conducted in Sacramento Division at locations Yolo, Roseville Road, North Sacramento Holder, and Swingle Junction (V-28). There were no readings for gas odor intensity recorded at any of the locations in the last week of May in 2009.

F. PG&E's UO S5351, District Regular Station Maintenance, Attachment 1, Inspection, Testing and Maintenance Requirements of District Regulator Station, 2B. Inspection

Schedules requires that "District regulator stations shall be inspected according to the following schedules: Class B Inspection once in the next calendar year after initially placing the station in operation and every 8 years thereafter, except for cause."

i. District Regulator Station A-38 located on Field Street at Poplar Street in Sacramento showed that a Class B (internal) inspection of the regulator station was conducted on May 29, 1998. The subsequent Class B inspection was performed on May 24, 2007 which exceeded the allowed time frame of 8 years.

ii. District Regulator Station R06 located on Union Avenue at Highway 12 in Fairfield showed that a Class B (internal) inspection of the regulator station was conducted on April 24, 2001. Records showed the station was scheduled to be rebuilt in 2009; however, it was postponed to be done in the first quarter of 2010 which exceeded the allowed time frame of 8 years.

G. UO Standard O-16 states in part: "If the CPA restoration work is (or is expected to be) over 60 days, the 'CPA Follow-up Action Plan' form must be used and developed within 60 calendar days from the date the CPA is found below adequate levels of protection, as defined by the current 49 CFR 192. Subpart I. Please note that action plans shall also be established and maintained for short-term remedial actions that are in place for over 60 days. The action plan shall list and document extenuating circumstance(s), to the extent known, the cause of the CPA problem, the desired solution(s), the actions needed to implement the solution, the estimated time to take those actions, and the employees who will perform those actions. The action plan shall be updated in intervals not exceeding 60 calendar days by an employee knowledgeable of the restoration work and reviewed by the operating supervisor, until the CPA restoration work is completed and the CPA shows adequate levels of protection..."

Cathodic Protection Area (CPA) S-158 located in Del Paso Heights showed that on February 2, 2010, Pipe to Soil (P/S) readings were -0.769 volts and -0.812 volts at 576 Harris Avenue and 110 Barton Way respectively. The CPA Follow-up Action Plan, created on March 2, 2010, indicated the anode had been depleted and a new deep well anode needed to be installed. P/S readings taken on April 5, 2010 (-0.700 and -0.796 volts) still showed inadequate levels of protection. The corrective action plan was not updated after March 2, 2010 to show the status and estimated time to complete the corrective actions.

H. Utility Procedure (UP): TD-4412P-07, Patrolling Pipelines and Mains: Table 4 shows the minimum patrol frequency requirements. According to Table 4, all gas transmission lines and distribution lines in places or on structures where anticipated physical movement or external loading could cause failure or leakage and consequent hazards to public safety that are located in business districts are required to be patrolled quarterly and the interval between patrols shall not exceed 4 -1/2 months.

The following lines were not patrolled quarterly in 2009 as required in UP TD-4412P-07.

Table 4- Quarterly patrols that were not conducted in the last quarter of 2009

Pipeline	Location
DFM Woodland Biomass	From CR 101 and East Beamer Street to Woodland Biomass
DFM Sunsweet	From L-400 Tap to CR 27 at Sunsweet
DFM Yolo County Road 17	From CR 98 and CR 18 to 2 mile west of CR 17 and CR 95A
DFM West Woodland	From T-10.25 on CR 98 west of I-5 to CR 98 & West Main Street
DFM Vaca Dixon	From Vaca Dixon Regulator Station to Hwy 505 & Vaca Valley Parkway Regulator Station
DFM Pennsylvania	From Pennsylvania at V1 to Suisun Fairfield Regulator Station
DFM	From Lewis-Hawkins to Buck-Eldridge
DFM	From Peabody & Elmira to Peterson & L210
DFM Creed Road (Cal Pine)	From Creed Road 100' East to Cal Pine Plant
DFM Goosehaven Road (Cal Pine)	Corner of Creed Road to Goosehaven
DFM Lambie Road (Cal Pine)	From Denverton Valve Lot at Creed Road to Lambie Road at Cal Pine Plant
DFM Mariani	From CR 89 to L-400 Mariani Farm

I. UP TD-4412P-07, Patrolling Pipelines and Mains, 7.2 Corrective Action requires that "Contact the responsible supervisor or superintendent as soon as possible concerning conditions that require immediate attention but cannot be corrected during the patrol itself."

UP TD-4412P-07, Patrolling Pipelines and Mains, 8.1 Documentation for all patrol requires that "Complete a corrective notification or PLM Work Request as follows:

i. Report conditions that require immediate attention but cannot be corrected by patrol

ii. Submit the form to the responsible supervisor."

Gas pipeline aerial patrol reports for 2008 and 2009 showed that construction activities were observed and noted for the transmission lines listed below. However, PG&E did not document any follow up actions which required immediate attention and further ground review.

- L-172A- Vacaville, at mile point MP 56.3, June 5, 2008
- L-172A- Vacaville, at MP 52.7 and 55.3, September 19, 2008
- L-172A- Vacaville, at MP 77.1, June 16, 2009
- L-172A- Vacaville, at MP 55, September 10, 2009
- L-220- Vacaville, at MP 27.8, September 19, 2008
- L-119C- Vacaville, at MP 1.2, June 16, 2009
- L-210B- Vacaville, from MP 14.5 to 15, June 16, 2009
- L-116- Vacaville, June 16, 2009

J. PG&E's Gas Emergency Plan Preparedness Policy, Section 2.2.3 Audit Schedule and Responsibility requires that "The plan shall be reviewed and updated at intervals not exceeding 15 months, but at least once each calendar year..."

The annual review log for PG&E's Emergency Plan showed that the plan was reviewed on July 31, 2008 and December 12, 2009, which exceeded 15 months.

II. Title 49 CFR § 192.201 Required capacity of pressure relieving and limiting stations.

§192.201 (a) requires that "Each pressure relief station or pressure limiting station or group of those stations installed to protect a pipeline must have enough capacity, and must be set to operate, to insure the following:

"(2) In pipelines other than a low pressure distribution system:
"(i) If the maximum allowable operating pressure is 60 p.s.i. (414 kPa) gage or more, the pressure may not exceed the maximum allowable operating pressure plus 10 percent, or the pressure that produces a hoop stress of 75 percent of SMYS, whichever is lower;"

A. During the field check of the District Regulator Station R-TS-005 located on 2nd Street at L Street in Davis, we observed that the pressure regulator, which had a pressure setting of 195 psig, failed to lockup on May 20, 2010.

B. During the field check of the District Regulator Station R-A41 located on Garden Highway at Bryte Avenue in Sacramento, we observed that the regulator, which had a pressure setting of 343 psig, failed to lockup on May 21, 2010.

III. Title 49 CFR § 192.328 Additional construction requirements for steel pipe using alternative maximum allowable operating pressure.

§192.328 requires that "For a new or existing pipeline segment to be eligible for operation at the alternative maximum allowable operating pressure calculated under §192.620, a segment must meet the following additional construction requirements. Records must be maintained, for the useful life of the pipeline, demonstrating compliance with these requirements:

During the audit, PG&E notified us that PG&E could not locate any MAOP documentation and the as-built installation records from 1961 for Zone # 196 in Colusa District. Please explain what actions PG&E is planning to take regarding this issue.

IV. 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."

External corrosion records for Line-108 Florin Road to Luther Drive showed that the casing potential (C/P) and P/S recorded at MP 0.15 were -1.279 volts and -1.278 volts respectively on July 29, 2008. Subsequently, C/P and P/S readings were recorded as -1.303 volts and -1.298 volts respectively on August 24, 2009. During our field check, C/P was found to be -1.078 volts and P/S was -1.063 volts on May 20, 2010. These readings show that there is no electrical isolation of the casing from the pipe. PG&E identified the electrical isolation problem in 2008; however, did not take any remedial actions to correct the deficiency. PG&E needs to take prompt remedial action to ensure that electrical isolation is adequate.

V. 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."

A. Division's gas dig-in incident report (Form A1) and leak repair records for gas leak (No:0953105) showed that on September 8, 2009, PG&E crews installed 1-foot of ½-inch polyethylene pipe (PE) to repair the gas leak caused by dig-in activities at 1707 Union Avenue in Fairfield. According to Form A1, the gas pipe was not pressure tested after the leak repair was completed.

B. Similarly, on September 11, 2009, PG&E crews installed a 1-inch coupling to make repairs of the gas leak (No:0953107) which was caused by dig-in activities at 4650 Business Center Drive in Fairfield. According to Form A1, the gas pipe was not pressure tested after the leak repair was completed.

PG&E needs to ensure that the pipeline segments mentioned above are tested after they were repaired as required by Title 49 CFR § 192.503 (a).

VI. Title 49 CFR § 192.619 Maximum allowable operating pressure: Steel or plastic pipelines.

§192.619 requires that " (a) No person may operate a segment of steel or plastic pipeline at a pressure that exceeds a maximum allowable operating pressure determined under paragraph (c) or (d) of this section, or the lowest of the following:

(1) The design pressure of the weakest element in the segment, determined in accordance with subparts C and D of this part."

Title 49 CFR § 192.621 Maximum allowable operating pressure: High-pressure distribution systems.

§192.621 requires that "(a) No person may operate a segment of a high pressure distribution system at a pressure that exceeds the lowest of the following pressures, as applicable:

(1) The design pressure of the weakest element in the segment, determined in accordance with subparts C and D of this part."

A. District Regulator Data Sheet for Regulator Station WO-17 located on Armfield Street at East Street, showed that maximum working pressure for Valve # 7 & 9 is 175 psig whereas the inlet MAOP is 215 psig.

B. Similarly, District Regulator Data Sheet for Regulator Station R-R10 located on Airbase Parkway, east of Peabody Road, showed that maximum working pressure for Valve # 9 is 200 psig whereas the inlet MAOP is 400 psig.

VII. Title 49 CFR §192.723 Distribution systems: Leakage surveys.

A. §192.723 (b)(1) requires that "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."

Leak survey stamps are printed on the maps to indicate the survey date and they show total pipeline length and number of services surveyed. Stamps were not filled out on maps 2467-G7, 2467-G8, and 2467-H8 to show that annual leak surveys were conducted in 2008.

B. §192.723 (b)(2) requires that "A leakage survey with leak detector equipment must be conducted outside business districts as frequently as necessary, but at least once every 5 calendar years at intervals not exceeding 63 months. However, for cathodically unprotected distribution lines subject to §192.465(e) on which electrical surveys for corrosion are impractical, a leakage survey must be conducted at least once every 3 calendar years at intervals not exceeding 39 months."

A leak survey stamp appeared on the 5-year leak survey record for plat map number 2915-I3; however the stamp was not filled out to show that the 5-year leak survey was conducted in 2008.

VIII. 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;"

A. District regulator station maintenance records showed that Regulator Station A23 located at Sunset & Fairoaks was inspected on June 19, 2007. The next inspection of this regulator station was performed on October 13, 2008, which exceeded the allowed time frame of 15 months.

B. District regulator station maintenance records showed that District Station No. R-B36 located at Big Horn Boulevard & Franklin Boulevard was not inspected in the calendar of 2009.

C. Maintenance records for Regulator Station R-D20 located at 17th Street and J Street were not available for the years 2006, 2005, 2004, and 2003.

IX. 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."

Distribution emergency valves X-130, X-131, X-132, X-133, X-134, and X-135 were installed in 2008 in Sacramento Division. The maintenance of these valves was performed on February 22, 2010 for the first time after the installation. No maintenance was performed on these valves in the calendar year 2009.

X. Title 49 CFR §192.805 Qualification program.

§192.805 (b) requires that "Ensure through evaluation that individuals performing covered tasks are qualified."

We found that the odorant intensity tests conducted on March 17, 2010 was performed by James Thompson. Operator qualification records of Mr. Thompson showed that he was not qualified to perform this covered task.

OBSERVATIONS AND CONCERNS

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 needs to take prompt remedial action to bring the CP levels into compliance.

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

Location	CP System No	P/S Reading (Volts)	Date
406 A Street, Davis	Y019	-0.820	May 20, 2010
1065 Olive Drive, Davis	Y019	-0.833	May 20, 2010
6749 Arabella Way, Sacramento	S-059	-0.824	May 20, 2010
3938 Bartley Drive, Sacramento	S-064	-0.754	May 20, 2010

II. The Sacramento Division welder qualification records indicated that Michael Burns, Gas Crew Leader, failed Oxyacetylene Weld Tests on January 13, 2010 and March 31, 2010. Mr. Burns also failed plastic connection qualification on January 6, 2010. We did not find any documentation verifying that Mr. Burns was no longer qualified to perform these covered tasks for the period that he was tested. PG&E's welding and plastic fusion test reports have a memo field that need to be filled out to provide a justification of an expired qualification.

When an employee is disqualified to perform a covered task or the qualification status of an employee changes, employee's name should be removed from the qualified personnel list and this information should be provided to the supervisors. We did not find a list of individuals who are currently qualified to perform welding and plastic fusion in Sacramento Division."

III. PG&E Pole Mount/Pedestal Mount Rectifier Test and Site Evaluation Form requires that rectifier fuses should be rated at 10% above the maximum amperage (Amps) rating of the rectifier or the next highest size. Records for Rectifier # 210 in CPA # S-99, Rectifier # 211 in CPA # S-99, and Rectifier # 338 in CPA # S-062 showed that the rectifiers were rated at 5 Amps but fuses were rated at 8 Amps instead of 5.5 Amps. PG&E made the changes to the fuse size from 8 Amps to 6.25 Amps which is the next highest fuse size.

Additionally, we found that the rectifier DC Amps rating was greater than the fuse size for Rectifier # 206 in CPA # T-210. The rectifier rating was 10 Amps whereas the fuse size was 6.25 Amps. The fuse size should have been rated at 11 Amps not 6.25 Amps as written on the form.