

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



December 22, 2011

EA2011-031

Ms. Eleanor Joyce Pefferman
EO SR&S Sustainable Reliability
Pacific Gas and Electric Company
245 Market St, N14
San Francisco, CA 94105

Subject: PG&E Fresno Division Electric Audit

Dear Ms. Pefferman:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission, Ryan Yamamoto and I conducted an electric audit of PG&E's Fresno Division from October 31-November 4, 2011. The audit included a review of the division's records for the period January 2008 through October 2011. Field portions of the audit were centered in the division's Fresno and Auberry Districts.

During the audit, we identified violations of one or more General Orders. I have enclosed a copy of our audit summary itemizing those violations. By January 23, 2011, PG&E must send me a response to this letter detailing its plans to address those violations and when PG&E expects to complete them. You may email an electronic copy of the response to kh2@cpuc.ca.gov or send a hard copy to:

Attn: Kenneth How
California Public Utilities Commission
505 Van Ness Avenue
San Francisco, CA 94102-3298

Should you have any questions concerning this letter I can be reached at by phone at (415) 703-2875 or by email at kh2@cpuc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Kenneth K. How".

Kenneth K. How
Electric Safety and Reliability Branch
Consumer Protection and Safety Division
California Public Utilities Commission

Enclosures: Audit Summary

CC: Ryan Yamamoto, Utilities Engineer, CPUC ESRB
Alok Kumar, Senior Utilities Engineer, CPUC ESRB
Raymond Fugere, Program and Project Supervisor, CPUC ESRB
Curtis Todd Ryan, Supervisor, PG&E Gas & Electric System Support

AUDIT SUMMARY

I. Violations Identified During Records Review

This section summarizes the General Order (GO) violations that we found during our review of PG&E Fresno Division maintenance records.

A. Patrol and Inspection Issues

1. Late Inspections

GO 165 Section IV: Standards for Inspection, Record-keeping, and Reporting outlines the frequency in which utilities must inspect certain facilities.

GO 95 Rule 31.2 Inspection of [Overhead] Lines states in part:

Lines shall be inspected frequently and thoroughly for the purpose of insuring that they are in good condition so as to conform with these rules. Lines temporarily out of service shall be inspected and maintained in such condition as not to create a hazard.

GO 128 Rule 17.2 Inspection [of Underground Systems] states in part:

Systems shall be inspected by the operator frequently and thoroughly for the purpose of insuring that they are in good condition and in conformance with all applicable requirements these rules.

PG&E's inspection program is based upon GO 165 inspection cycles. PG&E also has an Electrical Distribution and Preventative Maintenance (EDPM) manual which includes additional inspection procedures. The Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission (CPUC) considers the additional procedures in PG&E's EDPM manual part of PG&E's program to comply with the frequent and thorough inspections required by GOs 95 Rule 31.2 and GO 128 Rule 17.2. As a result, PG&E must inspect its facilities and keep records those inspections per both its EDPM manual and per GO 165 in order to be compliant with CPUC regulations.

Table A.1 lists late inspections found during CPUC review of PG&E Fresno Division records.

Table A.1: Late Inspections Found During Records Review	
Record	Explanation of Violation
Overhead Inspection Map 11212 Completed 7/15/05	A pole on the south edge of Lake Millerton near Millerton Rd was highlighted as inspected in 2010 but not in 2005. PG&E cannot show that the pole was inspected in 2005.
Overhead Inspection Map 13194C Completed 3/07/05	Two poles near W. Dayton were highlighted as inspected in 2010 but not in 2005. PG&E cannot show that the poles were inspected in 2005.
Underground Inspection Map 13195B Completed 6/1/07	Transformers T7046 and T6796 were inspected in 2010 but not in 2007. PG&E cannot show that the transformers were inspected in 2007. Note: These transformers are now on map 1319271.
Underground Inspection Map 132191 Completed 9/13/10	Pull Box PB4162 on Morris highlighted as inspected in 2007 but not in 2010. PG&E cannot show that the box was inspected in 2010.
Underground Inspection Map 162266 Completed 8/24/10	Enclosure at Snyder and Nectarine highlighted as inspected in 2007 but not in 2010. PG&E cannot show that the enclosure was inspected in 2010.
Underground Inspection Map 1220315 Completed 6/22/10	Pull box PB1380 on Northwest Ave highlighted as inspected in 2007 but not in 2010. PG&E cannot show that the enclosure was inspected in 2010.
Underground Inspection Map 1321166 Completed 9/24/10	Switch #5760 over helm canal highlighted as inspected in 2007 but not in 2010. PG&E cannot show that the switch was inspected in 2010.
Underground Inspection Map 1321181 Completed 9/8/10	Switch #5783 near grand auto highlighted as inspected in 2007 but not in 2010. PG&E cannot show that the switch was inspected in 2010.

In addition to the late inspections found during our records review, PG&E Fresno Division provided us with a list of facilities that, during the audit period, inspectors could not inspect or patrol on time (e.g. due to accessibility issues). The list contained 134 late facility patrols and inspections.

2. Inspection Map Discrepancies

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead systems] states in part:

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice

PG&E's EDPM manual requires inspectors to complete a Map Correction Form when they find discrepancies on their inspection maps. ESRB considers noting map errors in accordance with the EDPM manual part of PG&E's "accepted good practice" per GO 95 Rule 31.1. Map discrepancies that are not noted by inspectors are not compliant with PG&E's EDPM manual and are therefore violations of GO 95 Rule 31.1.

Table I.A.2 lists the unaddressed map discrepancies we found during our audit.

Table I.A.2: Inspection Map Discrepancies	
Record	Explanation of Violation
Overhead Inspection Map 21176 Completed 11/25/08	The inspector found all poles on this map removed while inspecting this map. He did not submit a map change.
Overhead Inspection Map 1221151 Completed 4/19/11	The inspection map shows a secondary line coming off of a joint pole on E Copper Ave, Clovis near 7170 Copper Ave. In the field, this secondary line is actually coming off of a solely owned transformer pole south of the joint pole. The PG&E owned service pole on the map appears to be a customer owned pole in the field. A transformer on a dead end pole south of the above pole was also unmapped. These discrepancies were not noted by the inspector. (Also noted in sections II.D, II.E)
Overhead Inspection Map 1419126 Completed 4/1/11	We found what appears to be a customer owned pole incorrectly marked on this map as PG&E owned service poles. Location: Pole line headed south off Kearney West of S. Valentine in Fresno (off a double bank transformer pole). (Also noted in section II.H)

B. Equipment Test and Inspection Record Violations

1. Suspect Capacitor Banks Returned to Service

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead systems] states in part:

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice

PG&E standard TD-2302P-05 contains a table of acceptable current ranges for capacitor energized and online tests. For any currents measured on the capacitor outside of those ranges, Section 5 of PG&E's Rev. 06/2010 Capacitor Bank Test Report Form requires the equipment tester to take the capacitor offline immediately, note the condition on the form, and create an EC notification. ESRB considers standard TD-2302P-05 and the completion of the steps on the test form part of PG&E's "accepted good practice" per GO 95 Rule 31.1. If PG&E does not comply with standard TD-2302S or does not follow the steps on its test form, PG&E is in violation of GO 95.

The capacitors in table I.B.1 were operating outside the ranges shown on the load chart, but the inspector did not note any abnormal conditions in the comments section nor on an EC notification. Some suspect capacitors were subsequently returned to service without any corrective action. Since PG&E did not identify these suspect capacitors per PG&E maintenance procedures, they were not maintained in accordance with PG&E's "accepted good practice" per GO 95 Rule 31.1.

Table I.B.1 Suspect Capacitor Banks Returned to Service	
Record	Explanation of Violation
Capacitor Test Report Operating #: C93 (p. 2171) Year 2011	Online currents measured at 27A on road and field phases. Acceptable current range for the type of bank shown on the test sheet is 13-18A. Unit left online. No abnormal conditions noted in comments section or on an EC notification.
Capacitor Test Report Operating #: C100 (p. 2073) Year 2011	Online currents measured at 0A for all three phases. Acceptable current range for the type of bank shown on the test sheet is 31-41A. Unit left offline. Comments indicate "No Problems Found".

2. Incomplete Capacitor Tests Marked as Complete

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead systems] states in part:

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice

PG&E standard TD2302P-05 requires PG&E equipment testing staff to test fixed capacitor banks when energized and switched capacitor banks in both the open and closed positions. ESRB considers Standard TD-2302S part of PG&E's "accepted good practice" per GO 95 Rule 31.1. If PG&E does not comply with standard TD-2302S, PG&E is in violation of GO 95

The 2011 capacitor bank tests for the capacitors in table I.B.2 were marked as complete by PG&E equipment test staff but do not show a completed energized or closed position test. Since PG&E did not appear to complete the tests on the listed equipment, they were not maintained in accordance with PG&E's "accepted good practice" per GO 95 Rule 31.1.

Table I.B.2 Incomplete Capacitor Tests Marked as Complete	
Record	Explanation of Violation
Capacitor Test Report Operating #: C88 (p. 2195) Year 2011	Tester does not appear to have done an energized test on this fixed capacitor bank. Not on deferred list. No abnormal conditions noted.
Capacitor Test Report Operating #: C1269 (p. 2105) Year 2011	Tester does not appear to have done an online (closed switch position) test on this switched capacitor bank. Not on deferred list. No abnormal conditions noted.

3. Incorrect Information Not Corrected on Capacitor Test Report

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead systems] states in part:

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice

Section 1 of PG&E's Rev. 06/2010 Capacitor Bank Test Report Form requires equipment test staff to verify and correct inaccurate equipment information. ESRB considers the completion of the steps on the test form to be part of PG&E's "accepted good practice" per GO 95 Rule 31.1. If PG&E does not follow the steps on the test form, PG&E is in violation of GO 95.

The capacitor bank test form in table I.B.3 had inaccurate equipment information. Since PG&E staff did not correct the inaccurate equipment information on the form during the inspection per the instructions on the form, the form was not completed in accordance with PG&E's "accepted good practice" per GO 95 Rule 31.1.

Table I.B.2 Incorrect Equipment Information not Corrected	
Record	Explanation of Violation
Capacitor Test Report Operating #: C94 (p. 2061) Year 2011	Incorrect kVAR rating shown on capacitor test form according to conversations with PG&E.

4. Insufficient Remedial Action on Potential Safety Hazards (Equipment Tests)

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead systems] states in part:

Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

PG&E must correct identified potential safety hazards in order to keep its system maintained to enable safe service per GO 95 Rule 31.1. Any identified potential safety hazards without corrective action or planned corrective action is a violation of GO 95.

Table I.B.4 lists capacitor test reports with potential safety hazards that were not sufficiently addressed by PG&E.

Table I.B.4 Insufficient Remedial Action on Potential Safety Hazards	
Record	Explanation of Violation
Capacitor Test Report Operating #: C484 (p. 2149) Year 2011	Tester noted tracking at the bolts that hold the capacitor bank to the crossarm. Wrote that it needed to be addressed before a pole fire. No remedial action noted on the form.
Capacitor Test Report Operating #: C716 (p. 2137) Year 2011	Tester noted a broken controller as well as insufficient clearance from fuse door to a kyle. Remedial action appears to only address the broken controller and not the insufficient fuse door/kyle clearance.

5. Incorrectly Marked Test Forms for Deferred Equipment

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead systems] states in part:

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice

PG&E standard TD-2302S states that if equipment testing staff does not complete a test on equipment because said equipment is on a deferred list, staff must in part: 1) check the checkbox on the test form labeled "Test could not be completed. Provide explanation in Comments section above" and 2) write "Deferred: Last Inspected (provide date), EDM director approval received (provide date)" in the test form comments section. ESRB considers Standard TD-2302S part of PG&E's "accepted good practice" per GO 95 Rule 31.1. If PG&E does not comply with standard TD-2302S, PG&E is in violation of GO 95

PG&E equipment test staff marked the test sheets for the deferred equipment in Table I.B.4 incorrectly per TD-2302S. This is not compliant with standard TD-2302S and is a violation of GO 95.

Table I.B.5 Incorrectly Marked Test Forms for Deferred Equipment	
Record	Explanation of Violation
Capacitor Test Report Operating #: C605 (p. 2047) Year 2011	On deferred list, but had no comments indicating this. Did not check "Test could not be completed" checkbox.
Capacitor Test Report Operating #: C863 (p. 2081) Year 2011	On deferred list, but had no comments indicating this. Did not check "Test could not be completed" checkbox.
Capacitor Test Report Operating #: 195D (p.2071) Year 2011	On deferred list, but had no comments indicating this. Did not check "Test could not be completed" checkbox.
Recloser Test Report Operating #9810 Year 2011	On deferred list, but had no comments indicating this. Did not check "Test could not be completed" checkbox.

6. Incorrectly Marked Test Forms for Equipment Requiring Repair

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead systems] states in part:

For all particulars not specified in these rules, design, construction, and maintenance should be done in accordance with accepted good practice

PG&E standard TD-2302P-05 states that if equipment test staff find equipment in need of repair that whose condition was not previously identified, they must write down on the test report form: the assigned ERR pin number, the assigned EC notification number and “Deferred: on ERR, awaiting repair” in the comments section. ESRB considers Standard TD-2302P-05 part of PG&E’s “accepted good practice” per GO 95 Rule 31.1. If PG&E does not comply with standard TD-2302P-05, PG&E is in violation of GO 95

The test forms for equipment requiring repair in Table I.B.6 were not marked correctly. This is not compliant with standard TD-2302P-05

Table I.B.5 Incorrectly Marked Deferred Equipment Test Forms	
Record	Explanation of Violation
Capacitor Test Report Operating #: C109 (p. 2223) Year 2011	Found that equipment needed corrective maintenance. The tester did not write “Deferred: on ERR, awaiting repair” in the comments section.
Capacitor Test Report Operation #: 15K (p.221) Year 2011	Found that equipment needed corrective maintenance. The tester did not write “Deferred: on ERR, awaiting repair” in the comments section.

C. Late Corrective Actions

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead lines] and GO 128 Rule 17.1 Design, Construction and Maintenance [of underground systems] state in part:

Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use, regard being given to the conditions under which they are to be operated, to enable the furnishing of safe, proper, and adequate service.

PG&E’s EDPM manual outlines PG&E’s methodology for prioritizing (with end dates) corrective actions for abnormal issues that it finds on its electric system. ESRB considers the completion of corrective actions by their priority end dates PG&E’s method of ensuring that its system is maintained to “enable the furnishing of safe, proper, and adequate service” per GO 95 Rule 31.1 and GO 128 Rule 17.1. Any corrective action not completed by its prioritization end date is a violation of GOs 95 and/or 128.

In a pre-audit data request to PG&E, we requested a list of all corrective actions in the audit period (2008-2011 YTD) that PG&E Fresno Division had completed late or that were late and still pending. Of the total 20607 late corrective actions reported by PG&E, 12442 were still open and 8165 were closed or completed.

II. Violations Identified During Field Audit

This section lists the GO 95 and 128 violations that we identified during our field inspections of PG&E facilities. For the field work, we primarily chose locations that PG&E inspected for GO violations per its maintenance program recent to our audit date.

A.	Location:	Pole on Old Ranch Park Ln near 31638 Lodge, Auberry, CA
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1023205 Completed 5/13/11
	Date Visited by CPUC:	11/3/11
Explanation of Violation(s):		
<p><u>No Intrusive Inspection Performed on Pole</u></p> <p>GO 165 requires intrusive testing on wood poles over 15 years old.</p> <p>A stamp on this pole indicates that it was installed in 1972. The pole does not have any plug or stamps indicating that it had been intrusively tested since its installation. PG&E also could not provide us with any records indicating that the pole had been tested.</p>		
<p><u>Exposed Ground Wire</u></p> <p>GO 95 Rule 54.6 B:</p> <p style="text-align: center;"><i>That portion of the ground wires attached on the face or back of wood crossarms or on the surface of wood poles and structures shall be covered by a suitable protective covering</i></p> <p>The ground wire was exposed at this location.</p>		

B.	Location:	Padmount, Wild Rose Ln. Between Wild Iris & Sierra Violet, Auberry, CA
	Equipment ID:	T-14945
	Previous Visit by Utility:	Underground Inspection Map 1024143 Completed 6/6/11
	Date Visited by CPUC:	11/3/11
Explanation of Violation(s):		
<p><u>Cable not Identified</u></p> <p>GO 128 Rule 35.1 Identification of Cables</p> <p><i>Cables operating at a voltage in excess of 750 volts shall be permanently and clearly identified by tags or other suitable means to indicate their operating voltage and the circuit with which they are normally associated at each manhole or other commonly accessible location of the underground system.</i></p> <p>A tag had fallen off a primary cable in this padmount.</p>		

C.	Location:	Pole on E Copper Ave, Just East of Coppermine Substation, Clovis, CA
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1221151 Completed 4/19/11
	Date Visited by CPUC:	11/3/11
Explanation of Violation(s):		
<p><u>Slack Anchor Guys</u></p> <p>GO 95 Rule 56.2:</p> <p><i>Guys shall be attached to structures, as nearly as practicable, at the center of load. They shall be maintained taut and of such strength as to meet the safety factors of Rule 44</i></p> <p>The anchor guys on the 12kV and the 115kV levels were slack on this pole.</p>		

D.	Location:	Pole on E Copper Ave Just West of 7170 Copper Ave Clovis, CA
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1221151 Completed 4/19/11
	Date Visited by CPUC:	11/3/11
Explanation of Violation(s):		
<p><u>Anchor Guy Touching Communication Conductor</u></p> <p>GO 95 Table 2 Case 19 C requires a 3 in clearance between 0-750 volt conductors and guys.</p> <p>A PG&E primary anchor guy on this pole was touching a communication conductor.</p>		
<p><u>Map Discrepancy</u></p> <p>PG&E's EDPM Manual requires inspectors to file map correction paperwork if they find a discrepancy in the field.</p> <p>The secondary conductor drawn on the inspection map as coming off of this pole does not exist. Instead it comes off of a pole north of this location. The PG&E owned service pole on the map also appears to be a customer owned pole in the field. (Also noted in Section I.A.2)</p>		

E.	Location:	2 Poles North of E Copper Ave Just West of 7170 Copper Ave Clovis, CA
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1221151 Completed 4/19/11
	Date Visited by CPUC:	11/3/11
Explanation of Violation(s):		
<p><u>Map Discrepancy</u></p> <p>PG&E's EDPM Manual requires inspectors to file map correction paperwork if they find a discrepancy in the field.</p> <p>The transformer on this pole was not drawn on the inspection map. (Also noted in Section I.A.2).</p>		

F.	Location:	Pole at 6533 N Bungalo, Fresno, CA
	Pole No.:	N/A
	Previous Visit by Utility:	Pole Setting Job 30842100 Estimate Completed 4/25/11
	Date Visited by CPUC:	11/3/11
Explanation of Violation(s):		
<p><u>Inaccurate Safety Factor Calculation</u></p> <p>GO 95 Rule 44.1 Outlines the minimum safety factor requirements for poles. To ensure that those safety factors are met, PG&E must perform accurate safety factor calculations on its poles and take into account all attachments.</p> <p>The safety factor calculation for the pole indicated that an attached 3/8'' span guy spanned outwards from both sides of the pole. In the field, the guy only spanned outwards from one side of the pole.</p> <p>PG&E also did not include service drops on the pole in the pole's safety factor calculations.</p>		

G.	Location:	Pole near 3533 Kearney, Fresno, CA (1 Pole south of sidewalk pole, going towards residence)
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1419126 Completed 4/1/11
	Date Visited by CPUC:	11/4/11
Explanation of Violation(s):		
<p><u>Broken High Voltage Sign</u></p> <p>GO 95 Rule 51.6 A3:</p> <p><i>Crossarms where present may be marked in lieu of marking the pole. Such signs shall be placed on the face and back of each crossarm supporting line conductors</i></p> <p>The pole at this location had a broken high voltage sign.</p>		

H.	Location:	Service pole south of 3533 Kearney, Fresno, CA (3 Poles south of sidewalk pole, going towards residence, west of S Valentine)
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1419126 Completed 4/1/11
	Date Visited by CPUC:	11/4/11
Explanation of Violation(s):		
<p><u>Map Discrepancy</u></p> <p>PG&E's EDPM Manual requires inspectors to file map correction paperwork if they find a discrepancy in the field.</p> <p>The service pole mapped as a PG&E solely owned pole appears to be a customer owned pole. (Also noted in Section I.A.2).</p>		

I.	Location:	Pole at 3566 Kearney, Fresno, CA
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1419126 Completed 4/1/11
	Date Visited by CPUC:	11/4/11
Explanation of Violation(s):		
<p><u>Broken High Voltage Sign</u></p> <p>GO 95 Rule 51.6 A3:</p> <p><i>Crossarms where present may be marked in lieu of marking the pole. Such signs shall be placed on the face and back of each crossarm supporting line conductors</i></p> <p>The pole at this location had a broken high voltage sign.</p>		

J.	Location:	Pole with Transformer, 3 Poles north of Kearney in alley between 3566 & 3590 Kearney, Fresno, CA
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1419126 Completed 4/1/11
	Date Visited by CPUC:	11/4/11
Explanation of Violation(s):		
<p><u>Broken High Voltage Sign</u></p> <p>GO 95 Rule 51.6 A3:</p> <p><i>Crossarms where present may be marked in lieu of marking the pole. Such signs shall be placed on the face and back of each crossarm supporting line conductors</i></p> <p>The pole at this location had a broken high voltage sign.</p>		

K.	Location:	Pole with Transformer near 3520 Kearney, Fresno, CA
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map 1419126 Completed 4/1/11
	Date Visited by CPUC:	11/4/11
Explanation of Violation(s):		
<p><u>Broken High Voltage Sign</u></p> <p>GO 95 Rule 51.6 A3:</p> <p><i>Crossarms where present may be marked in lieu of marking the pole. Such signs shall be placed on the face and back of each crossarm supporting line conductors</i></p> <p>The pole at this location had a broken high voltage sign.</p>		