

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



September 23, 2011

EA2011-011

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 East Bay Division Electric Audit

Dear Ms. Pefferman:

On behalf of the Utilities Safety and Reliability Branch (USRB) of the California Public Utilities Commission (CPUC), Kenneth How and I conducted an electric audit of PG&E's East Bay Division from July 11-15, 2011. The audit included a review of the division's records for the period January 2003 through July 2011.

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 September 5, 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 ryan.yamamoto@cpuc.ca.gov or send a hard copy to:

Attn: Ryan T. Yamamoto
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 by phone at (415) 703-2192 or by email at ryan.yamamoto@cpuc.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Ryan T. Yamamoto", with a long horizontal flourish extending to the right.

Ryan T. Yamamoto, P.E.
Utilities Safety and Reliability Branch
Consumer Protection and Safety Division
California Public Utilities Commission

Enclosures: Audit Summary

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

AUDIT SUMMARY

I. Record Violations

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

A. GO 165 Inspection Record Violations

1. Late/missed GO 165 Inspections

GO 165 Section IV: Standards for Inspection, Record-keeping, and Reporting states in part:

Each utility subject to this General Order shall conduct inspections of its distribution facilities, as necessary, to assure reliable, high-quality, and safe operation, but in no case may the period between inspections (measured in years) exceed the time specified in the attached table.

PG&E must inspect their facilities per the cycles outlined in GO 165. PG&E tracks these inspections by highlighting inspected facilities on inspection maps per PG&E's Electric Distribution Preventive Maintenance (EDPM) Manual. Facilities not highlighted within a GO 165 cycle indicate that PG&E has not inspected those facilities on time.

The following inspection maps had facilities not inspected within a GO 165 inspection cycle:

Record	Explanation of Violation
Overhead Inspection Map E0522 Completed 7/10/2009	Pole near Alcatraz Ave. and Dover St. inspected in 2004 but not in 2009.
Overhead Inspection Map E0523 Completed 7/20/2009	Pole on Dana St. between Prince St. and Woolsey St. inspected in 2004 but not in 2009.
Overhead Inspection Map F0605 Completed 1/9/2009	Pole on Overlake Ct. inspected in 2004 but not in 2009.
Overhead Inspection Map F0613 Completed 2/19/2009	Pole on Estates Dr. between Bullard Dr. and McAndrew Dr. inspected in 2004 but not in 2009
Overhead Inspection Map F0706 Completed 3/3/2009	Pole on East Cir. inspected in 2004 but not in 2009.
Underground Inspection Map D0314 Completed 6/2/2009	Enclosure on east side of map near switch P020 inspected in 2006 but not in 2009

Underground Inspection Map D0315 Completed 7/11/2009	Enclosure on Hartnett Ave. and Carlson Blvd. inspected in 2006 but not in 2009
Underground Inspection Map D0317 Completed 8/5/2009	Enclosure on Edgewater Way and enclosure on Harbor View Dr. inspected in 2006 but not in 2009.
Underground Inspection Map E0518 Completed 5/21/2009	Two (2) enclosures on Haste St between Telegraph Ave. and Dana St., and transformer bank at Berkeley Town House inspected in 2006 but not in 2009.
Underground Inspection Map G0607 Completed 5/12/2009	Transformer near Peroly Ct. inspected in 2006 but not in 2009.
Underground Inspection Map G0724 Completed 11/16/2009	Enclosure on MacArthur Blvd. between Ritchie St. and 82 nd Ave. inspected in 2006 but not in 2009.
Underground Inspection Map H0806 Completed 7/24/2009	Transformers T-3357, T-3356 and T-3355 inspected in 2006 but not in 2009.

Maps in the table below were not patrolled.

Record	Explanation of Violation
Overhead Patrol Map G0402 (2009)	Patrol not conducted in 2009
Overhead Patrol Map G0403 (2009)	Patrol not conducted in 2009

Records in table below were provided by PG&E

Record (Notification #)	Explanation of Violation
Underground Inspection Map G0611 (Notification #104353659)	E/O Miller Ave S/O E 12 th , Oakland – Manhole not inspected due to location underneath office building, sent 3 rd party notification.*

* Please provide a copy of all 3rd party notifications for this location.

2. Missing GO 165 Inspection Records

GO 165 Section IV: Standards for Inspection, Record-keeping, and Reporting states in part:

The company shall maintain records of inspection activities which shall be made available to parties or pursuant to Commission rules upon 30 days notice.

Under GO 165 Section IV, PG&E must keep and be able to produce records of its inspection activities. The following table lists inspection records that PG&E could not produce during our audit.

Record	Explanation of Violation
Underground Inspection Map E0511 (Manholes, 4kV, 12kV) Completed in 2009	<ul style="list-style-type: none">- Missing logs- Different order numbers for log and map- Dates do not match with folder, logs, and maps- Different names/LAN IDs on log and map- Different handwriting- Review dates different
Underground Inspection Map E0512 (Manholes, 4kV, 12kV) Completed in 2009	<ul style="list-style-type: none">- Missing logs- Different order numbers for log and map- Different handwriting- Inspection done by himself
Underground Inspection Map E0513 (Manholes, 4kV, 12kV) Completed in 2009	<ul style="list-style-type: none">- Missing logs- Different order numbers for log and map- Inspection done by himself

B. Equipment Test and Inspection Record Violations

1. Incomplete Capacitor Test Marked as Complete

GO 95 Rule 31.1 Design, Construction and Maintenance [of overhead systems] and GO 128 Rule 17.1 Design, Construction and Maintenance [of underground systems] state 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 Utility Procedure TD2302P-05 requires maintenance staff to test switched capacitor banks with the switches in both the open and closed positions. USRB

interprets “accepted good practice” in part to mean following all established internal company procedures.

PG&E staff did not always perform on-line tests on its switched capacitors when inspectors found high voltages across them as required by TD2302P-05.

Below is a switched capacitor that did not receive online tests due to high voltage conditions.

Record	Explanation of Violation
TS302 (2011)	Did not receive online test due to high voltage conditions.

2. Corrective Actions Not Recorded on Equipment Test Forms

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:

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

Section 7 of PG&E’s Rev. 06/2010 Capacitor Bank Test Report form requires an ERR Pin number if the tester identifies abnormal conditions on a capacitor. Section 9 of the form also requires an EC notification number for identified abnormal conditions. PG&E’s SCADA/PDAC and Auto-transfer switch test form requires similar procedures. USRB interprets “accepted good practice” in part to mean following all established internal company procedures.

A number of capacitor, SCADA/PDAC and Auto-transfer switch test forms were missing these numbers even after the tester marked them as necessary. It is unknown whether the abnormal equipment received corrective action. Without corrective action and corrective action numbers written on the form per PG&E maintenance procedures, the equipment is not being maintained in accordance with PG&E’s procedures.

Below is a list of equipment we found whose test forms indicated that they required ERR Pin numbers and/or EC Notification numbers but had none written down.

Record	Explanation of Violation
TV534 (Capacitor Bank) 2011	Missing EC Notification # when marked that one was required.

TV268 (Capacitor Bank) 2011	Notes say that DO has no SCADA control. No EC or ERR pin is needed. No follow up was provided at time of audit.
B100 (SCADA) 2011	Checked EC notification was needed, no EC number written on form.
P131 (SCADA) 2011	Comments noting abnormal conditions. Checked that no EC or ERR pin needed. Could not find any follow up at time of audit.
BR139 (SCADA) 2011	Comments noting abnormal conditions. Checked that no EC or ERR pin needed. Could not find any follow up at time of audit.
P127 (SCADA) 2011	Checked EC notification was needed, no EC number written on form.
BART Auto-transfer Switches 2011	Several steps omitted from test procedure. Could not determine these steps were required at the time of the inspection. Could not tell how PG&E followed up on abnormal conditions when found on switches.

3. Incomplete or Incorrectly Marked Capacitor Test Forms

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:

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

We consider the completion of PG&E's Rev. 06/2010 Capacitor Bank Test Report form to be part of PG&E's procedures. USBR interprets "accepted good practice" in part to mean following all established internal company procedures.

A number of capacitor test forms that were incorrectly or incompletely marked. Incorrect test forms are incomplete per PG&E maintenance standards, resulting in equipment not being maintained in accordance with PG&E's procedures.

Below are capacitor test records that appear to be incompletely or incorrectly filled out.

Record	Explanation of Violation
TV590 (2011)	Section 4 - No CAP voltage was recorded
TV270 (2011)	Checked off boxes in "Fixed Cap Banks" section as well as "Switched Cap Banks" section. Was a switched cap bank.

4. Late Equipment Tests

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:

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 outlines PG&E equipment inspection and test cycles. USRB interprets “accepted good practice” in part to mean following all established internal company procedures and standards. 128 switches were completed late or not inspected from January 2008 to July 2011. Late equipment inspections are not compliant with PG&E standard TD2302-S.

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:

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 outlines PG&E’s methodology for prioritizing (with end dates) corrective actions for issues it finds on its electric system USRB interprets “accepted good practice” in part to mean following all established internal company procedures and standards. Thus, past due corrective actions that violate the PG&E’s EDPM manual are also violations of GOs 95 and/or 128.

PG&E East Bay Division had 48 corrective actions that were completed late or still pending.

D. Invalid cancellation of EC notification

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:

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 outlines PG&E's methodology for cancelling an EC notification. .
USRB interprets "accepted good practice" in part to mean following all established internal
company procedures.

We field verified two cancelled EC notifications (#102481961 and #103780828), which
both EC notifications stated "PER OSMOSE 2010 EVALUATION – CANCEL TAG..."
Neither pole had a 2010 Osmose tag on the pole showing it was inspected/evaluated in 2010.
Please explain why both these EC Notifications state "PER OSMOSE 2010 EVALUATION
– CANCEL TAG...", when there is no record of anything done by Osmose in 2010.

II. Field Violations

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 chose locations that PG&E inspected for GO violations per its maintenance program recent to our audit date.

A.	Location:	Pole on Redwood Road
	Pole No.:	110134439
	Previous Visit by Utility:	Overhead Inspection Map G0704 Completed 4/20/11
	Date Visited by CPUC:	7/15/11
Explanation of Violation(s):		
<p><u>Slack Anchor Guy</u></p> <p>GO 95 Rule 56.2:</p> <p style="text-align: center;"><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 guy was slack at this location.</p>		

B.	Location:	Pole on Redwood Road
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map G0704 Completed 4/20/11
	Date Visited by CPUC:	7/15/11
Explanation of Violation(s):		
<p><u>Slack Span Guy</u></p> <p>GO 95 Rule 56.2:</p> <p style="text-align: center;"><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 span guy was slack at this location.</p>		

C.	Location:	Pole Balmoral Dr. and Hill Crest Ct.
	Pole No.:	N/A
	Previous Visit by Utility:	Overhead Inspection Map G0705 Completed 5/45/11
	Date Visited by CPUC:	7/15/11
Explanation of Violation(s):		
<p><u>Buried Guy Anchor</u></p> <p>GO 95 Rule 31.1:</p> <p><i>Electrical supply and communication systems shall be designed, constructed, and maintained for their intended use.</i></p> <p>PG&E Document 022221 indicates that the connection between anchor rods and down guys should be kept above grade to prevent corrosion. The connection was below grade at this location.</p>		

III. Programmatic Violations

This section discusses GO violations stemming from issues raised during the review of PG&E's maintenance procedures and from observation of PG&E's implementation of those procedures. These violations may be systemic in nature and might not be specific to the East Bay Division.

A. PG&E is Not Using an Equipment Test Deferment List Per Its Standards

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:

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

In a pre-audit data request to PG&E, we requested a list of equipment that had its inspection or maintenance deferred with explanation. PG&E's East Bay Division was unable to determine who maintains the deferred equipment inspection list or if there is a deferred equipment list.

PG&E requires that equipment not tested within their test cycles be added to a deferment list per TD2302P-05. Conversations with PG&E during the audit indicate that the requirement for deferment lists, new in 2011, was not communicated to the departments in charge of equipment testing and that they did not necessarily maintain TS2302P-05 deferment lists. If PG&E does not maintain these deferment lists per its standards, then PG&E is in violation of GO 95 Rule 31.1 and/or GO 128 Rule 17.1.

IV. Concern

A. Inaccurate Patrol and Inspection Data

A data request response sent to the CPUC by PG&E prior to the audit included inaccurate patrol and inspection data for the years 2006 and 2011. According to PG&E, this data was possibly obtained from a source potentially used to create PG&E's GO 165 reports. If this is true, this raises questions about the integrity of PG&E's GO 165 reports. Please explain the source of this inaccurate data and whether that source is used to create GO 165 reports.

B. Equipment Test Sheet Edits

It appears that equipment test records were reviewed and edited by a third party. This is based on an observation that a third consistent pen (a dark blue felt pen), not the equipment tester's or the supervisor's, appeared on all capacitor test records for the years 2011 and 2010. The editor's edits consisted primarily of corrections made on test forms where the tester did not complete items that were required to be completed (e.g. check boxes). Since the editor did not sign, date or provide explanation of his/her edits, it is unclear whether certain corrected items requiring field work (e.g. check boxes for visual inspection) were corrected only on paper or corrected because they were redone in the field. Abnormal conditions noted on some test forms were also crossed out by the editor without explanation. While it is acceptable that PG&E performs edits on these records, all edits should be signed, dated and explained so that there are no questions regarding the propriety of those edits.

Record	Explanation of Concern
TV308 (2011)	Reviewer used white out. No initials, date, and explanation for edits
TS259 (2011)	Reviewer crossed off notes made by tester. No initials, date, and explanation for edits
VS265 (2011)	Reviewer edited test sheets without initials, date and explanation
C258 (2011)	Reviewer edited test sheets without initials, date and explanation
TV104 (2011)	Reviewer crossed off notes made by inspector without explanation

Please respond to the following question: When was the last time a QA review of the equipment testing sheets was conducted prior to USRB's audit?