

PUBLIC UTILITIES COMMISSION

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September 4, 2009

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Pacific Gas and Electric Company
245 Market Street, Mail Code N14L
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CPUC File No. E200912

SUBJECT: Electric Audit of PG&E's Peninsula Division

On behalf of the Utilities Safety and Reliability Branch (USRB) of the California Public Utilities Commission, Dennis Lee, Terrence Eng and I conducted an Electric Audit of PG&E's Peninsula Division from June 15-19, 2009. The audit included a review of your records for the period of 2007-2008.

During the inspection, we identified violations of one or more General Orders. A copy of the audit summary itemizing the violations is enclosed. Please advise me by electronic or hard copy of all the corrective measures taken by the Utility regarding the violation(s) and the date on which they were corrected.

If you have any questions, please contact me at (415) 703-2192.

Sincerely,

Jadwindar Singh, P.E.
Utilities Safety and Reliability Branch
Consumer Protection and Safety Division

Enclosure: Audit Summary

CC: Ms. Holly Meyer-Zebzda, PG&E
Mr. Dennis Lee, P.E. CPUC
Mr. Terrence Eng, CPUC

Audit Summary

Violations

(1) General Order (GO) 165, Section IV, Standards for Inspection, Record-keeping, and Reporting

Section IV, 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. "

During our review of both the overhead and underground inspections and patrols, we found the following issues related to highlighting and tallying of facilities on maps by PG&E Inspectors.

- a) PG&E Inspectors are inaccurately tallying the facilities inspected/patrolled. The tallying errors are most likely due to simple addition errors. However, these errors lead to changing facility counts year to year as the new count will supersede the prior, correct count. The tallying errors also create uncertainty when determining the number of facilities that were GO 165 inspected/patrolled, as the tally will not match the number of actual facilities on the map.
- b) PG&E Inspectors are overlooking (not highlighting) some facilities and not including them in the facility count. The Inspectors then fail to realize that the new, incorrect facility count is different than the prior count and then fail to investigate why there is a discrepancy. These highlighting and tallying errors also create uncertainty when determining the number of facilities that were GO 165 inspected/patrolled, as the not highlighted and not tallied facilities indicate that the facilities were not inspected.
- c) PG&E Inspectors are overlooking (not highlighting) some facilities on the maps, but are somehow able to accurately tally the total number of the facilities. The USRB believes that PG&E Inspectors are sometimes copying the prior facility count and using that number as the current count. Had the Inspectors properly counted the facilities actually inspected, the counts would not match.

PG&E's inspection program relies on the combination of highlighted facilities and tallied facility counts in order to comply with the inspection and patrol requirements of General Order 165. Without an agreement between the number of highlighted facilities and tallied facility count, the USRB can not definitively and unequivocally say that PG&E's Overhead and Underground Inspection program is inspecting all facilities and is in compliance with General Order 165. Furthermore, the USRB finds that these mistakes should have been found by the reviewing Compliance Supervisor. The fact that these issues exist show that more attention to detail must be paid when reviewing the inspections/patrols.

PG&E must implement methods that will ensure that all facilities have definitively and unequivocally been inspected/patrolled. These methods must also include provisions to ensure that facility counts are accurate and updated year to year.

Below are examples of the issues:

Map #	Year	Facilities Reported as Inspected	Facilities Actually Inspected	Facilities Missed
UG E-04-17	2005	94	92	2
	2008	94	102	2
UG E-04-22	2005	47	50	1
	2007	47	49	2

(2) GO 165, Section IV, Standards for Inspection, Record-keeping, and Reporting

Section IV, states in part:

“For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action. ”

PG&E’s 2007 and 2008 Annual GO 165 Reports state that Peninsula Division incurred 126 and 5 late notifications, respectively. PG&E procedures allow EC notification to not be considered late until the end of the year, and therefore, given the amount of time that PG&E has to “address” a notification, the USRB finds it unacceptable that PG&E has any late notifications. Please ensure that all notifications are “addressed” in the year they are due.

(3) GO 165, Section IV, Standards for Inspection, Record-keeping, and Reporting

Section IV, states in part:

“For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action. ”

During the review of underground map E-09-14, we discovered a Grade “A” notification on the log that did not have an EC number specified. The Grade “A” was in regard to “Oil leaking from H1 bushing.” The log had also been reviewed by the Supervisor. USRB Engineers then brought the issue up with Division staff, who then investigated and found that the original condition still existed. This violates both General Order 165, which states that “any problems identified during each inspection” shall have a “scheduled date of corrective action” and PG&E’s own procedures related to handling Grade “A”’s found during inspections.

(4) GO 165, Section IV, Standards for Inspection, Record-keeping, and Reporting

Section IV, states in part:

“For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action.”

PG&E EDPM Manual 2007-2009, Equipment Testing and Inspection Intervals
"Recloser, OH - Hydraulic Electronic & Microprocessor" shall be tested/inspected twice yearly.

During our review of the recloser inspections, we found the following issues:

- a) The first 2007 inspection records for Half Moon Bay 1101, 1102 and 1103 could not be located.
- b) No records for second 2007 inspections could be located.
- c) There were issues noted by the inspectors for the first 2007 inspection for the following reclosers, yet no follow-up were documented on the form:
 - 8962
 - 8996
 - 9022
 - 9062
 - 8966
- d) Many of the first 2008 inspection records were completed in pencil.
- e) The first 2008 inspection of 9056 indicated there was an issue, yet no follow-up was documented on the form.

Conversations with the Division staff indicated that a variance from PG&E Standards was granted and the Division was allowed to perform only one recloser inspection in 2007. Please explain why a variance was granted.

Regarding the other issues, please explain why each of the issues exist and also why they were not caught by the reviewing authority.

(5) GO 165, Section IV, Standards for Inspection, Record-keeping, and Reporting

Section IV, states in part:

"For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action."

PG&E EDPM Manual 2007-2009, Equipment Testing and Inspection Intervals
"Capacitor Bank, OH & UG, Fixed or Switched, Pad-Mounted or OH" shall be tested twice yearly.

During our review of the capacitor inspections, we found the following issues:

- a) There were instances where non-zero current readings were recorded by PG&E Inspectors for the "Measured primary current - With CAP BK OFF Line" and no corrective action was scheduled. PG&E UO Standard S2303, page 10, states, "Non-zero current readings with the switches open indicate a failed switch." Furthermore, C0518 was recorded with non-zero primary current readings two successive inspections - once in the second part of 2007 and once in the first part of 2008.

- C0442 – First 2008
- C0506 – First 2008
- C0520 – First 2008
- C0418 – First 2008
- C0694 – First 2008
- C0852 – First 2008
- C0854 – First 2008
- C0508 – Second 2007
- C0518 – Second 2007
- C0518 – First 2008
- C0783 – Second 2007
- C0812 – First 2008
- C0846 – Second 2007

b) There were many instances where the inspection form was not completely filled out. For example, automatic/SCADA banks, the counter reading, manufacturer, and model number were not filled out on the back of the inspection form.

- C0442 – First 2008
- C0506 – First 2008
- C0520 – First 2008
- C0418 – First 2008
- C0694 – First 2008
- C0852 – First 2008
- C0854 – First 2008
- C0518 – Second 2007
- C0518 – First 2008
- C0783 – Second 2007
- C0812 – First 2008

c) For the second 2007 inspection, C0812's inspection forms states "No Inspection Required This Cycle."

d) For the second 2007 inspection, C0848's inspection form is completely blank.

e) For the second 2007 inspection, C0856's inspection form is stamped with "No Inspection Required This Cycle."

f) For the second 2007 inspection, no inspection record could be found for C0510.

Please explain why each of the issues exist and were not caught by the reviewing authority.

(6) GO 165, Section IV, Standards for Inspection, Record-keeping, and Reporting

Section IV, states in part:

"For all inspections, within a reasonable period, company records shall specify the circuit, area, or equipment inspected, the name of the inspector, the date of the inspection, and any problems identified during each inspection, as well as the scheduled date of corrective action."

During our review of the regulator inspections, we found the following issues:

a) PG&E UO Standard S2302 states that "Regulators should be removed from the line and returned to the shop for overhaul every 500,000 operations or after a period not to exceed 10 years, whichever comes first." In 2007 and 2008, the inspection forms for R440 and R450 show that the counter readers were greater than 500,000 with no indication that they were subsequently removed for overhaul. Does PG&E actively overhaul regulators that have 500,000 operations? Furthermore, how many regulators does PG&E have in service that have been on-line for greater than 10

years and have not been overhauled? Does PG&E plan to overhaul them and when?

- b) In 2008, the inspection forms for the following regulators were not completely filled out:
- R250 – “Left Control on Auto” not check marked.
 - R320 – “Current through Regulator” not filled in, “Checked Operation” not check marked.
 - R390 – Counter reading not filled in.
 - R370 – Counter reading not filled in.
 - R360 – Inspection left blank.
- c) In 2008, the inspection forms for the following regulators were completely blank:
- R380
 - R430
 - R260

Please explain why each of the issues exist and also why they were not caught by the reviewing authority.

(7) GO 165, Section IV, Standards for Inspection, Record-keeping, and Reporting

Section IV, states in part:

“Upon completion of corrective action, company records will show the nature of the work, the date, and the identity of persons performing the work.”

Field Location 1 on Thursday, June 18 brought us to “4 poles west of Blackburn and Kent” in Pacifica and was related to EC #102566166. The EC notification was created on 4/26/09 for “3 broken bobs” and was subsequently closed out on 10/9/07, citing Notification Closed on Arrival (NCOA). We asked the Division to find out how the issue was corrected, but the Division was unable to provide a definitive answer. Company records must be able to show how each corrective action was completed, when, and by whom. Furthermore, PG&E must implement methods to ensure that EC notifications for existing maintenance are closed out when work is completed.

(8) GO 95, Rule 56.6 Requirements for Sectionalizing With Insulators

Rule 56.6-A, Guys in Proximity to Supply Conductors of Less than 35,500 Volts, states:

“All portions of guys within both a vertical distance of 8 feet from the level of supply conductors of less than 35,500 volts and a radial distance of 6 feet from the surface of wood poles or structures shall not be grounded, through anchors or otherwise. Where necessary to avoid the grounding of such portions, guys shall be sectionalized by means of insulators installed at locations as specified in Rule 56.7. (emphasis added)”

At Location 4 on Thursday, June 18 (Map E0213), we observed a tree branch in contact with the primary down guy just above the insulator. The map had been inspected between 3/25-27/09. The tree’s contact with the primary down guy above the insulator is a violation of Rule 56.6-A and should have been identified during the 3/25-27/09

inspection and scheduled for correction. Had the tree not been in contact at the time of the inspection, the inspector should have scheduled the tree for trimming in anticipation of the imminent contact.

(9) GO 95, Rule 31.1 Design, Construction and Maintenance

Rule 31.1 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.”

At Location 15 on Thursday, June 18 (Map E0213), we observed that the preform at the secondary crossarm for the service to 112 McKinney was broken. The map had been inspected between 3/25-27/09. The broken preform is a violation of Rule 31.1 and should have been identified during the 3/25-27/09 inspection and scheduled for correction.

(10) GO 95, Rule 54.6-I Vertical and Lateral Conductors: Attachment of Protective Covering

Rule 54.6-I states:

“Protective covering shall be attached to poles, structures, crossarms, and other supports by means of corrosion-resistant materials (straps, plumbers tape, lag, nails, staples, screws, bolts, etc.) which are adequate to maintain such covering in a fixed position.”

Also at Location 15 on Thursday, June 18 (Map E0213), we observed that electrical tape had been used to attach the underarm bus to the secondary crossarm because two straps were broken. Division staff agreed that tape is not a permanent solution. The map had been inspected between 3/25-27/09. The use of electrical tape is a violation of Rule 54.6-I and should have been identified during the 3/25-27/09 inspection and scheduled for correction.

(11) GO 95, Rule 51.6 Marking and Guarding

Rule 51.6 states:

“Poles which support line conductors of more than 750 volts shall be marked with high voltage signs. This marking shall consist of a single sign showing the words “HIGH VOLTAGE”, or pair of signs showing the words “HIGH” and “VOLTAGE”, not more than six (6) inches in height with letters not less than 3 inches in height. A pair of signs may be stacked to a height of no more than 12 inches. Such signs shall be of weather and corrosion-resisting material, solid or with letters cut out therefrom and clearly legible.”

At Location 17 on Thursday, June 18 (Map E0213), we observed that the High Voltage sign on the west side of the pole was broken. Division staff researched and found that a notification does not exist for this violation. The broken High Voltage sign is a violation

of Rule 51.6 and should have been identified during the 3/25-27/09 inspection and scheduled for correction.

(12) GO 95, Rule 31.1 Design, Construction and Maintenance

Rule 31.1 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.”

At Location 20 on Thursday, June 18 (Map E0213), we observed that the aerial service to 108 Manor had detached at the weather head. The map had been inspected between 3/25-27/09. The broken attachment is a violation of Rule 31.1 and should have been identified during the 3/25-27/09 inspection and scheduled for correction.

(13) GO 95, Rule 31.1 Design, Construction and Maintenance

Rule 31.1 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.”

At Location 21 on Thursday, June 18 (Map E0213), we observed that the aerial service to 101 Manor had detached at the weather head. The map had been inspected between 3/25-27/09. The broken attachment is a violation of Rule 31.1 and should have been identified during the 3/25-27/09 inspection and scheduled for correction.

(14) GO 95, Rule 54.6-I Vertical and Lateral Conductors: Attachment of Protective Covering

Rule 54.6-I states:

“Protective covering shall be attached to poles, structures, crossarms, and other supports by means of corrosion-resistant materials (straps, plumbers tape, lag, nails, staples, screws, bolts, etc.) which are adequate to maintain such covering in a fixed position.”

Also at Location 21 on Thursday, June 18 (Map E0213), we observed that the underarm bus strap on the freeway side was broken. The map had been inspected between 3/25-27/09. The broken underarm bus strap is a violation of Rule 54.6-I and should have been identified during the 3/25-27/09 inspection and scheduled for correction.

(15) GO 95, Rule 54.6-I Vertical and Lateral Conductors: Attachment of Protective Covering

Rule 54.6-I states:

“Protective covering shall be attached to poles, structures, crossarms, and other supports by means of corrosion-resistant materials (straps, plumbers tape, lag, nails, staples, screws, bolts, etc.) which are adequate to maintain such covering in a fixed position.”

At Location 26 on Thursday, June 18 (Map E0213), we observed that electrical tape had been used to attach the underarm bus to the secondary crossarm because two straps were broken. Division staff agreed that tape is not a permanent solution. The inspection log showed that the Inspector had identified an issue with the secondary insulators and created a notification. It appears that the issue had been remedied by a contractor who had installed a smart meter on the pole. It also appears that the contractor may have used the electrical tape to secure the underarm bus. In any case, the use of electrical tape is a violation of Rule 54.6-I and should not be used. Please ensure that both PG&E employees and PG&E contractors are aware that electrical tape can not be used as a permanent method of securing an underarm bus.

(16) GO 128, Rule 12.2 Maintenance

Rule 12.2 states in part:

“Systems shall be maintained in such condition as to secure safety to workmen and the public in general. Systems and portions thereof constructed, reconstructed, or replaced on or after the effective date of these rules shall be kept in conformity with the requirement of these rules.”

At Location 33 on Thursday, June 18 (EC #103678625, T-3144), we observed that the housing for the bolt and lock that secures the secondary compartment door was almost completely corroded off. EC# 103678625 was created for the same issue, yet was reassessed on 4/7/09. We find the issue to be a violation of Rule 12.2. The reassessment was inappropriate as the safety condition warranted an immediate response and should have been scheduled for repair after the visit on 4/7/09.

Concerns and Recommendations

(1) Supervisory Review of Inspection Maps, Logs, and Records

As evidenced in this report, the USRB found many deficiencies that should have been caught by the Supervisor in charge of reviewing the documents. PG&E already has procedures in place that mandate Supervisory review and signatures, however, we must conclude that the review is cursory, as many of the issues we found were obvious. We insist that PG&E review the responsibilities with Supervisors to ensure that inspection/patrol facility counts, inspection log EC notifications, and equipment testing procedures are completely followed by their staff.

(2) Tech ID usage

We found multiple instances where the "Tech ID" field was not being filled out on EC Notifications. It is our understanding that transformer numbers, switch numbers, etc are to be input there. However, this is not being done consistently (Please see EC Notification #103678625 and 102520023 for examples). Please explain the purpose of the "Tech ID" field and ensure that its usage is consistent across PG&E's System.

(3) USRB Data Requests

As part of the Peninsula Division Data Requests, the USRB was given incorrect data regarding how many late notifications were incurred by the division for 2007 and 2008. Originally, it was reported that zero late notifications existed for 2007 and three for 2008. However, during the audit, we discovered notification 102678762 that was late for 2007. A new search was subsequently conducted and 18 notifications were found. However, the list of 18 notifications did not include notification 102678762 that we had found, nor did the list agree with PG&E's GO 165 Report that states there were 126 late notifications in 2007. Similarly, the Division's response of 3 late notifications for 2008 does not agree with PG&E's GO 165 Report that states there were 5 late notifications.

Regarding other Division requests, it took two and sometimes three tries before the data we had asked for was properly produced. These Peninsula Division Data Request issues bring to attention the SAP problems that the USRB has had since PG&E's "Business Transformation" occurred in October 07. Specifically, the USRB has had an extremely difficult time getting reliable and accurate data from SAP during the audits. The problem seems to stem from both Division and General Office Personnel's unfamiliarity in using and extracting data from SAP. It has come to the point that we have no confidence in any reports generated by PG&E staff, and must unnecessarily spend a significant amount of time verifying that the data is accurate. The USRB insists that:

- PG&E Staff responsible to responding to USRB data requests be fully trained in extracting data from SAP.
- PG&E create standard, proven methods for extracting USRB's "normal" data requests and that those methods be distributed.