

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298



September 8, 2015

SA2015-006

Hicham Mejjaty
Senior Manager, Electric Operations Compliance
Pacific Gas and Electric Company
245 Market St. Mail Unit N9G
San Francisco, CA 94105

SUBJECT: Audit of PG&E's Hayward Headquarters – Electric Substation

Dear Mr. Mejjaty:

On behalf of the Electric Safety and Reliability Branch (ESRB) of the California Public Utilities Commission, Raymond Cho of my staff conducted a substation audit of PG&E's Hayward Headquarters from August 3 to August 5, 2015. The audit included a review of PG&E's records and field inspections of PG&E's facilities.

During the audit, my staff identified violations of General Order 174. A copy of the audit findings itemizing the violations is enclosed. Please advise us no later than October 9, 2015, by electronic or hard copy, of all corrective measures taken by PG&E to remedy and prevent such violations.

If you have any questions concerning this audit please contact Raymond Cho at (415) 703-2236 or raymond.cho@cpuc.ca.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Fadi Daye".

Fadi Daye, P.E.
Program and Project Supervisor
Electric and Communication Facility Safety Section
California Public Utilities Commission

Enclosure: Audit Findings

Cc: Elizaveta Malashenko, Director, Safety and Enforcement Division, CPUC Charlotte
TerKeurst, Program Manager, Safety and Enforcement Division, CPUC
Alok Kumar, Senior Utilities Engineer (Supervisor), CPUC
Raymond Cho, Utilities Engineer, CPUC
Yoko Williams, Supervisor, Transmission Compliance, PG&E

Audit Findings

Company: PG&E – Hayward Headquarters

Substation Audit

Date: August 3 to 5, 2015

Violations

A.	Location:	PG&E – Hayward Headquarters
	Date Visited by CPUC:	8/3/2015 – 8/5/2015
	Explanation of Violation(s):	
	<p><u>Late Work Orders</u></p> <p>GO 174, Rule 12, states in part:</p> <p><i>Substations shall be designed, constructed and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service.</i></p> <p><i>Design, construction and maintenance should be performed in accordance with accepted good practices for the given local conditions known at the time by those responsible.</i></p> <p>(continued on next page)</p>	

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(continued from previous page)																																												
PG&E Utility Procedure, TD-3320P-12, states that Line Corrective (LC) notification codes B and E require work to be completed within 90 days and 365 days, respectively.																																												
<table border="1"> <thead> <tr> <th data-bbox="318 619 508 741">Notification</th> <th data-bbox="508 619 643 741">Priority</th> <th data-bbox="643 619 833 741">Created on</th> <th data-bbox="833 619 1023 741">Due Date</th> <th data-bbox="1023 619 1349 741">Reference date (Date done in Field)</th> </tr> </thead> <tbody> <tr> <td data-bbox="318 741 508 819">106245031</td> <td data-bbox="508 741 643 819">E</td> <td data-bbox="643 741 833 819">10/15/2012</td> <td data-bbox="833 741 1023 819">10/15/2013</td> <td data-bbox="1023 741 1349 819">1/29/2014</td> </tr> <tr> <td data-bbox="318 819 508 896">107108845</td> <td data-bbox="508 819 643 896">B</td> <td data-bbox="643 819 833 896">8/30/2013</td> <td data-bbox="833 819 1023 896">11/30/2014</td> <td data-bbox="1023 819 1349 896">12/30/2014</td> </tr> <tr> <td data-bbox="318 896 508 974">107108846</td> <td data-bbox="508 896 643 974">B</td> <td data-bbox="643 896 833 974">8/30/2013</td> <td data-bbox="833 896 1023 974">11/30/2014</td> <td data-bbox="1023 896 1349 974">6/22/2015</td> </tr> <tr> <td data-bbox="318 974 508 1052">109674703</td> <td data-bbox="508 974 643 1052">B</td> <td data-bbox="643 974 833 1052">11/16/2014</td> <td data-bbox="833 974 1023 1052">2/16/2014</td> <td data-bbox="1023 974 1349 1052">3/24/2015</td> </tr> <tr> <td data-bbox="318 1052 508 1129">109691174</td> <td data-bbox="508 1052 643 1129">B</td> <td data-bbox="643 1052 833 1129">11/30/2014</td> <td data-bbox="833 1052 1023 1129">2/30/2014</td> <td data-bbox="1023 1052 1349 1129">4/26/2015</td> </tr> <tr> <td data-bbox="318 1129 508 1207">109691248</td> <td data-bbox="508 1129 643 1207">B</td> <td data-bbox="643 1129 833 1207">11/30/2014</td> <td data-bbox="833 1129 1023 1207">2/30/2014</td> <td data-bbox="1023 1129 1349 1207">6/22/2015</td> </tr> <tr> <td data-bbox="318 1207 508 1283">109691249</td> <td data-bbox="508 1207 643 1283">B</td> <td data-bbox="643 1207 833 1283">11/30/2014</td> <td data-bbox="833 1207 1023 1283">2/30/2014</td> <td data-bbox="1023 1207 1349 1283">6/22/2015</td> </tr> </tbody> </table>					Notification	Priority	Created on	Due Date	Reference date (Date done in Field)	106245031	E	10/15/2012	10/15/2013	1/29/2014	107108845	B	8/30/2013	11/30/2014	12/30/2014	107108846	B	8/30/2013	11/30/2014	6/22/2015	109674703	B	11/16/2014	2/16/2014	3/24/2015	109691174	B	11/30/2014	2/30/2014	4/26/2015	109691248	B	11/30/2014	2/30/2014	6/22/2015	109691249	B	11/30/2014	2/30/2014	6/22/2015
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Seven PG&E notifications were completed past their due dates as shown above.																																												

B.	Location:	PG&E – Hayward Headquarters
	Date Visited by CPUC:	8/3/2015 – 8/5/2015
	Explanation of Violation(s):	
	<p data-bbox="250 443 776 478"><u>Missing or Late Maintenance Work</u></p> <p data-bbox="250 516 699 552">GO 174, Rule 12, states in part:</p> <p data-bbox="293 590 1341 730"><i>Substations shall be designed, constructed and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service.</i></p> <p data-bbox="293 768 1341 877"><i>Design, construction and maintenance should be performed in accordance with accepted good practices for the given local conditions known at the time by those responsible.</i></p> <p data-bbox="250 915 1409 1024">PG&E Standard TD-3322B-040, Updated Transmission Circuit Breaker Exercise Requirements, dated 8/29/2014, states that all 60kV and above transmission class circuit breakers will receive an annual exercise.</p> <p data-bbox="250 1062 1398 1171">PG&E Standard TD-3322S, Table 3: Load Tap Changer (LTC) Internal Inspection Counter Triggers, state that ABB Type UZE LTCs shall be internally inspected at 50,000 or 75,000 counter operations.</p> <p data-bbox="250 1209 1016 1245">There were two (2) missing or late maintenance items:</p> <ol data-bbox="293 1245 1398 1417" style="list-style-type: none"> <li data-bbox="293 1245 1398 1314">1. Documentation of a 2014 operation or exercise of circuit breaker #152 in Dumbarton Substation was not documented. <li data-bbox="293 1314 1398 1417">2. Documentation of a prior internal inspection for the Bank 1 LTC in Tassajara Substation was not documented. The counter for this bank read 156,789 operations at the time of inspection. 	

My staff discovered the following violations during the field audit that were not documented and addressed by PG&E during its last inspection:

C.	Substation:	Vineyard
	Equipment No.:	Bank No. 2
	Previous Visit by PG&E:	6/2/15
	Date Visited by CPUC:	8/4/15
Explanation of Violation(s):		
<p><u>Leaking Transformer</u></p> <p>GO 174, Rule 12, states in part:</p> <p><i>Substations shall be designed, constructed and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service.</i></p> <p><i>Design, construction and maintenance should be performed in accordance with accepted good practices for the given local conditions known at the time by those responsible.</i></p> <p>PG&E Substation Maintenance and Construction Manual, Substation Equipment Oil Leaks, states that inspectors must “check all of the oil-filled equipment for oil leaks, weeps, or spills. If any leaks are found, document the equipment’s designation, the location of the leaks, the PCB content, and the extent of the leaks.”</p> <p>Transformer Bank No. 2 was leaking oil.</p>		

D.	Substation:	Vineyard
Equipment No.:		Bank No. 1
Previous Visit by PG&E:		6/2/15
Date Visited by CPUC:		8/4/15
Explanation of Violation(s):		
<p><u>Weeping Transformer</u></p> <p>GO 174, Rule 12, states in part:</p> <p><i>Substations shall be designed, constructed and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service.</i></p> <p><i>Design, construction and maintenance should be performed in accordance with accepted good practices for the given local conditions known at the time by those responsible.</i></p> <p>PG&E Substation Maintenance and Construction Manual, Substation Equipment Oil Leaks, states that inspectors must “check all of the oil-filled equipment for oil leaks, weeps, or spills. If any leaks are found, document the equipment’s designation, the location of the leaks, the PCB content, and the extent of the leaks.”</p> <p>There was oil weep on transformer Bank No. 1, at the drain valve.</p>		

E.	Substation:	Grant
	Equipment No.:	Distribution Breaker No. 1108
	Previous Visit by PG&E:	6/2/15
	Date Visited by CPUC:	8/4/15
Explanation of Violation(s):		
<p><u>Damaged Insulator</u></p> <p>GO 174, Rule 12, states in part:</p> <p><i>Substations shall be designed, constructed and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service.</i></p> <p><i>Design, construction and maintenance should be performed in accordance with accepted good practices for the given local conditions known at the time by those responsible.</i></p> <p>PG&E Substation Maintenance and Construction Manual, "Substation Condition Assessment Checklist" Requirements, state that inspectors must "ensure that the substation's porcelain and composite insulators do not have broken skirts, excessive contamination, damage, or other abnormal conditions."</p> <p>There was a damaged insulator on the distribution vacuum breaker.</p>		

F.	Substation:	Grant
	Equipment No.:	Air Switch No. 127
	Previous Visit by PG&E:	6/2/15
	Date Visited by CPUC:	8/4/15
Explanation of Violation(s):		
<p data-bbox="250 569 506 604"><u>Cut Ground Wire</u></p> <p data-bbox="250 642 699 678">GO 174, Rule 12, states in part:</p> <p data-bbox="293 716 1341 861"><i>Substations shall be designed, constructed and maintained for their intended use, regard being given to the conditions under which they are to be operated, to promote the safety of workers and the public and enable adequacy of service.</i></p> <p data-bbox="293 898 1346 1005"><i>Design, construction and maintenance should be performed in accordance with accepted good practices for the given local conditions known at the time by those responsible.</i></p> <p data-bbox="250 1043 1377 1150">PG&E Substation Maintenance and Construction Manual, "Substation Condition Assessment Checklist" Requirements, state that inspectors must "visually check the condition and continuity of all equipment case ground connections."</p> <p data-bbox="250 1188 1344 1260">There was a severed ground wire for the air switch with evidence of significant oxidation on the damaged portion of the ground wire.</p>		