

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



November 30, 2015

Mr. Sumeet Singh, Vice President  
Gas Asset and Risk Management  
Pacific Gas and Electric Company  
6111 Bollinger Canyon Road, Room 4590-D  
San Ramon, CA 94583

GI-2015-09-PGE13-02A

SUBJECT: General Order 112 Gas Inspection of PG&E's Sacramento Division

Dear Mr. Singh:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a General Order 112 inspection of Pacific Gas & Electric Company's (PG&E) Sacramento Division (Division) from September 21-25, 2015.<sup>1</sup> The inspection included a review of the Division's Corrosion Control records for the years 2013 and 2014, as well as a representative field sample of the Division's facilities in the cities of Sacramento, Folsom, El Dorado Hills, Orangevale, West Sacramento, Davis, Woodland, Vacaville, and Dixon. SED staff reviewed operator qualification records and field observation of Division's personnel performing covered tasks.

SED's findings are noted in the Summary of Inspection Findings (Summary) which is enclosed with this letter. The Summary reflects only those particular records and pipeline facilities that SED inspected during the inspection.

Within 30 days of your receipt of this letter, please provide a written response indicating the corrective actions and preventive measures taken by PG&E to address the violations and observations noted in the Summary. Additionally, please provide a written response to the outstanding items that SED requested during the audit that PG&E have not yet responded. Pursuant to Commission Resolution ALJ-274, SED staff has the authority to issue citations for each violation found during the inspection.

If you have any questions, please contact Banu Acimis at (916) 928-3826 or by email at [banu.acimis@cpuc.ca.gov](mailto:banu.acimis@cpuc.ca.gov).

Sincerely,

A handwritten signature in blue ink that reads "Kenneth A. Bruno".

Kenneth Bruno  
Program Manager  
Gas Safety and Reliability Branch  
Safety and Enforcement Division

Enclosure: Summary of Inspection Findings

cc: Larry Berg, PG&E Gas Regulatory Support; Cheryl Dizon, PG&E Gas Regulatory Support;  
Larry Deniston, PG&E Gas Regulatory Support; Mike Falk, PG&E

<sup>1</sup> General Order 112-F was adopted by the Commission on June 25, 2015 via Decision 15-06-044.

**SUMMARY OF INSPECTION FINDINGS**

**I. Probable Violations**

**A. PG&E’s Internal Audit Findings**

Prior to the start of the inspection, PG&E provided SED its findings from the internal review it conducted for Sacramento Division (Division). Some of PG&E’s internal review findings are violations of PG&E’s standards, and are therefore violations of Title 49 Code of Federal Regulations (CFR), §192.605(a).

Table 1 lists all of the violations from PG&E’s internal review.

Please provide an update to the pending corrective and preventive actions that are highlighted in red including the items listed as “TBD” which were not complete at the time of the audit along with supporting documents.

Table 1. Results of Sacramento Division Internal Review Summary for 2013 & 2014

Item	Title 49, CFR, Part 192 Code Section	Topic-Findings with number of violations	Corrective Action To Close Findings	Corrective Action Completion Date	Proposed Actions To Prevent Recurrence	Preventive Action Completion Date
1	192.605 (a)	<p><b>Total:</b> 30</p> <p><b>2014:</b> 25</p> <p><b>Missing Action Plan (1)</b>Y-004-B, L-045, S-001, S-016, S-070, S-127, S-186, S-221, S-810-H, S-811-A, S-830-A, S-027-1, S-154,Y-003, Y-011, Y-013, Y-011, Y-013, Y-014,Y-015, Y-016, S-014-C, S-026-A, Y-012-D, Y-001-B.</p> <p>CPA: S-154 Rect. #61, Rect.#123, Rect.#125 Missed Maint.</p> <p><b>2013:</b> 5</p> <p>CPA: S-174, S-153, Y-013, Y-014, Y-015, T-220-8” T-149, T-116, T-220-10”, T-119</p> <p><b>Missing Action Plan for Casings 2014 (2):</b> ID#: 41419979, 42563062</p> <p><b>Action Plan Present, but not updated every 30 days (1)</b> CPA:S-186</p>	Found during recent deep dive document comparison review. Begin utilizing compliance report to track pending maintenance and document progress in more timely manner	12/31/2015	Frequent Department Compliance Meetings along with working with asset strategist and engineering dept. to ensure maintenance is scheduled and completed timely	12/31/2015

2	192.605 (a) or 192.465(d)	CPA down over 15 months (3)  CPA: S-055, S-186, S-808	Found during recent deep dive document comparison review. Begin utilizing compliance report to track pending maintenance and document progress in more timely manner	12/31/2015	Frequent Department Compliance Meetings along with working with asset strategist and engineering dept. to ensure maintenance is scheduled and completed timely.	12/31/2015
3	192.453	OQ record found, but does not indicate Qualified for task (OQ 03-06, 03-07, 03-08, 03-10) for task performed (x1)  Records show MXRR not OQ for 0307, 0308 or 0310 until 2/27/2014. ID# 41389081	Found during recent deep dive document comparison review.	9/20/2015	Employees are trained annually on which OQ task they are qualified to perform.	12/31/2015
4	192.453 192.807	OQ doc missing, or not in Database (x1) SCP1 OQ not in database. ID#: 41496355	Found during recent deep dive document comparison review.	9/20/2015	Frequent Department Compliance Meetings along with working with asset strategist and engineering dept. to ensure maintenance is scheduled and completed timely.	12/31/2015
5	192.467 (d) 192.605 (a)	Casings Not Monitored Annually (x34) No Value One Pipe to Soil, Value Two Casing, or %LEL entries; No indication there are no leads. ID#s: 43190788; 43190783; 41440744; 41440734; 41411945; 41496054; 41496378; 41496395; 42644128; 42646896; 41438775; 41438800; 41439069; 41439077; 41439085; 41439094; 42750712; 42753127; 41425326; 43176016; 43176018; 43190786; 41495791; 43170357; 43171112; 43171114; 42709375; 42709376; 42709378; 42751477; 42753699; 42753700; 43196170; 43196174	Validate in the field. Validate correct maintenance type and maintenance plan.	10/21/2015	Frequent Department Compliance Meetings along with working with asset strategist and engineering dept. to ensure maintenance is scheduled and completed timely.	12/31/2015
6	192.467 (d) or 192.605 (a)	No Expl/Invest for Casing & Carrier Pipe P/S < 100 mV or Casing P/S > 800 mV (x1) Value One Pipe Potential is less negative than -850. No explanation. ID#: 41387123	Troubleshoot notification 108588144 closed 8/17/14 without resolution. Check with Corrosion Engineering to validate that this casing is in their	10/21/2015	Frequent Department Compliance Meetings along with working with asset strategist and engineering dept. to	12/31/2015

			remediation program.		ensure maintenance is scheduled and completed timely.	
7	192.605 (a)	Other (x5)1. Value One Pipe Potential and Value Two Casing Potential are less than 100 mv apart (-896, -893). No explanation. ID#: 425630622. Value One Pipe Potential and Value Two Casing Potential are less than 100 mv apart (-876, -845). No explanation. ID#: 414387393. Value One Pipe Potential and Value Two Casing Potential are less than 100 mv apart (-880, -850). No explanation. ID#: 414287314. Value One Pipe Potential and Value Two Casing Potential are less than 100 mv apart (-880, -850). No explanation. ID#: 414066195. Value One Pipe Potential and Value Two Casing Potential are less than 100 mv apart (-748, -805). No explanation. ID#: 41387123	Found during recent deep dive document comparison review. Begin utilizing compliance report to track pending maintenance and document progress in more timely manner.42563062: Notification 110119230 created to mitigate contact.41438739: 2015 casing over -800 & within 100 mV from P/S. Need to generate corrective.41428731: Troubleshoot notification 110654500 open.41406619: Notification 110545491 created to mitigate contact.41387123: Notification 110607291 created to remove and deactivate casing along with pipeline relocation project.	12/31/2015	Frequent Department Compliance Meetings along with working with asset strategist and engineering dept. to ensure maintenance is scheduled and completed timely.	12/31/2015
8	192.465 (a)	<b>Less than 10% of individual isolated steel sections were read (96%)</b> 616 of a total 6427 read in 2014	Found during recent deep dive document comparison review. Begin utilizing compliance report to track pending maintenance and document progress in more timely manner.	12/31/2015	New 10%er compliance report developed to track completion and compliance of isolated steel maintenance.	9/19/2015
9	192.605 (a)	<b>Missing Action Plan for Possible Contacted Casings (7)</b> ID# 41425334, 41425343, 41495556, 41495004, 42563062, 41386968, 41387982	Found during recent deep dive document comparison review. Begin utilizing compliance report to track pending maintenance and document progress in more timely manner. 3 casings (41419929, 41412063, 41387267) changed to RPO or REMV status. 41495004 determined in 2014 to be No Contact 42563062 no change from 2013 in 2014 41386968: Troubleshoot	12/31/2015	Frequent Department Compliance Meetings along with working with asset strategist to ensure maintenance is scheduled and completed timely.	12/31/2015

			107029858 completed 41387982: Troubleshoot 107034169 completed			
10	192.605 (a)	<b>Casings Not Monitored Annually (13)</b> ID#: 41419929, 41412063, 41387267, 41411594, 41411586, 41495050, 41411945, 41496395, 41425326, 41428711, 42633964, 42709376, 42709375	Validate in the field. Validate correct maintenance type and maintenance plan.	10/21/2015	Frequent Department Compliance Meetings along with working with asset strategist to ensure maintenance is scheduled and completed timely.	12/31/2015
11	192.605 (a)	<b>VC-1 Not Calibrated Annually (x12)</b> 1. Instrument was out of calibration. Previously calibrated 12/12/13. Current calibration is 1/16/15. (x11) CB-013; CB-038; CB-046; CB-047; CB-048; CB-049; CB-051; CB-052; CB-053; CB-054; CB-055; CB-057 2. Instrument was out of calibration. Previously calibrated 12/23/13. Current calibration is 1/28/15. (x1) ID#: CB-046	Instruments calibrated 1/16/15 and 1/28/15. New calibration guidelines eliminate the need for this instrument.	9/19/2015	VC-1 calibrators are no longer being used. All Sacramento DPM and multimeters are tracked in SAP and sent to ATS for calibration.	12/31/2015
12	192.605 (a)	<b>Other (x19)</b> 1. Instrument was out of calibration. Previously calibrated 11/15/13. Current calibration is 1/15/15. ID#s: 13803, 13804 2. Instrument was out of calibration. Previously calibrated 12/10/13. Current calibration is 1/15/15. ID#: 13842; 13843; 13841; 13845; 13850; 13848; 13847; 13846; 13849; 13844; 13852; 13851 3. Instrument was out of calibration. Previously calibrated 4/1/13. Current calibration is 11/18/14. ID#s: 6207; 6197; 6212; 6073 4. Instrument appears to not be in service since 12/2012. Please verify and mark OOS if applicable. ID#: 101000051	Each instrument has been subsequently calibrated within specs. New calibration standards and procedures developed and implemented in 2015.	9/19/2015	All Sacramento DPM and multimeters are tracked in SAP and sent to ATS for calibration. All other calibrated instruments also now have tracking codes and are in process of inclusion in new process.	12/31/2015
13	192.605 (a)	<b>Calibration Records Not Complete or Properly Filled Out (x1)</b> Calibration record for Feb-Apr blank.	All calibration records have been reviewed and completed on the new form TD-5811P-205-F01, Rev. 1	3/30/2014	Local supervisor holds monthly meetings to review L&M documentation	6/1/2015
14	192.605 (a)	<b>Incorrect Form Used to Document Calibrations (x4)</b> Please use form TD-5811P-205-F01, Rev. 1 (3/2014) for 2014 calibration records. ID#: Metrotech 850	All calibration records have been recorded on the new form TD-5811P-205-F01, Rev. 1	3/30/2014	Local supervisor holds monthly meetings to review L&M documentation	6/1/2015

15	192.605 (a)	<b>Other (x13)</b> 1. Please transfer Jan and Feb calibrations to form TD-5811P-205-F01, Rev. 1 (3/2014) for 2014 calibration records. Appears model # entered as 580 instead of 850. (x1) ID#: Metrotech 850 2. Please transfer 2014 calibrations to form TD-5811P-205-F01, Rev. 1 (3/2014) for 2014 calibration records. (x12) ID#s: Metrotech 9890; Vivax V-Loc	All calibration records have been recorded on the new form TD-5811P-205-F01, Rev. 1	3/30/2014	Local supervisor holds monthly meetings to review L&M documentation	6/1/2015
16	192.605 (a)	<b>Test Gauge S/N, Calib Date, and Readings Not Noted on Calib Chart or Data Graph (x2)</b> Test Equipment # not identified on calibration sticker. ID#s: 8805982, 7970PR	TBD	TBD	TBD	TBD
17	192.605 (a)	<b>Other (x3)</b> 1. Pressure chart on file and verified for 2013 Calibration. Not entered on log (Form 61-6862). ID3:8500391 2. No LanID entered on chart or log for 2013 calibration entry. ID#: 2799GD 3. LanID entered on log (Span) section instead of range (0-20") ID#: 7970PR	TBD	TBD	TBD	TBD
18	192.747 (a)	<b>2014 Missed Distribution Main Valve Maintenance: (1)</b> Valve V-450	Valve was scheduled to be completed by 6/14/14, but traffic control was needed. Scheduling traffic control extended completion to 4 days beyond 15 month window.	6/18/2014	All work to be performed within the 12th month anniversary to alleviate delays with traffic control scheduling	12/31/2014
19		<b>Missed Monthly Maintenance (x1):</b> No monthly checklists Jan - Nov 2013	Maint. Completed on ensuing checks.	12/9/2013	Maint. Moving into SAP scheduling	12/31/2014
20	192.605 (a)	<b>2014 Leaks responded to Late (x70):</b> (6) Grade 2+ leaks repaired late (2) Leaks downgraded late- (1) Grade 2+, (1) Grade 2 (62) Leaks checked late (Grade 2 & 3)	All leaks responded to: Repaired/downgraded/rec checked upon discovery	12/31/2014	To prevent recurrence, a new Daily Repair and Recheck Report is being generated and distributed to all Construction and Leak Survey Supervisors and Superintendents as well as the Mapping Group. This report brings visibility to the repairs and rechecks that are coming due, up to 90 days out. This allows the work	none

					to be scheduled and executed prior to the compliance dates.	
21	192.605 (a)	<b>2013 Leaks responded to Late (40):</b> (3) Grade 1 repaired late (5) Grade 2+ repaired late (3) downgraded late - (1) Grade 2+, (2) Grade 2 (29) Late leak checks - (Grade 2 & 3)	All leaks responded to: Repaired/downgraded/rec hecked upon discovery	12/31/2013	To prevent recurrence, a new Daily Repair and Recheck Report is being generated and distributed to all Construction and Leak Survey Supervisors and Superintendents as well as the Mapping Group. This report brings visibility to the repairs and rechecks that are coming due, up to 90 days out. This allows the work to be scheduled and executed prior to the compliance dates.	none

During the inspection, SED discussed details about the internal audit findings and noted that there are at least three Cathodic Protection Areas (CPAs) which have been down more than 15 months, and they were still down as of September 2015.

As can be seen from Table 1, Results of Sacramento Division Internal Review Summary for 2013 & 2014, CPAs S-055, S-186, and S-808 have been down more than 15 months. PG&E’s Corrective Action to close findings for these CPAs stated that *“Found during recent deep dive document comparison review. Begin utilizing compliance report to track pending maintenance and document progress in more timely manner”*. PG&E’s Proposed Actions to prevent recurrence for these CPAs stated *“Frequent Department Compliance Meetings along with working with asset strategist and engineering dept. to ensure maintenance is scheduled and completed timely.”*

SED reviewed Division records and noted that at CPA S-186, Division recorded pipe-to-soil (P/S) read of -441 millivolts (mV) on 6/13/13 at 406 N. 10th, Industrial Park in Sacramento and the system has been down since June 2013. Even though Division created an action plan and updated it regularly, this CPA has been down in the last 27 months due to permitting issues. SED understands that Division has been working with Sacramento County to resolve permitting related issues. However, SED is concerned that since the pipeline in this CPA has not been cathodically protected for a long time, there may be some external corrosion problems.

SED also noted that Cathodic Protection Maintenance Report for CPA S-055 shows that Division recorded -787 mV at Franklin School, in Sacramento on 5/5/14 and it’s been still down since then. Therefore, it has not been under cathodic protection (CP) for approximately 19 months.

Similarly, records of CPA S-808 show that Division recorded P/S read of -575 mV at 2411 17<sup>th</sup> Street, Sacramento on 2/4/14. Division determined that a deep well anode was necessary to resolve the problem. Latest P/S record was taken on 8/13/15 and found to be -398 mV. As of September 2015, the area has been down for approximately 19 months.

SED concluded that these three areas have not been cathodically protected for longer than 15 months; therefore, as a temporary mitigative action, SED recommends that Division should treat these areas as unprotected pipelines. Therefore, in order to determine the areas of active corrosion, Division should conduct activities under 192.465 (e) such as electrical survey, review and analyze leak repair and inspection records corrosion monitoring records, and exposed pipe inspection records as temporary mitigative measures.

Please provide SED with the results of PG&E's review and analysis above. Additionally, please provide SED the dates when the CPAs are restored along with the most current P/S reads.

## **B. SED Findings**

1. Title 49 CFR §192.605 Procedural manual for operations, maintenance, and emergencies.

§192.605 states in part:

*“(a) Each operator shall prepare and follow for each pipeline, a manual of written procedures for conduction operations and maintenance activities and for emergency response...”*

PG&E's Utility Standard: TD-4181S Publication Date: 03/26/2014 Rev: 0 External Corrosion Control of Gas Facilities, Section 2. Distribution and Local Transmission Lines states in part:

### *b. Yearly P/S Monitoring*

*In addition to required bimonthly monitoring points, yearly P/S potential monitoring points must be established on impressed current distribution and local transmission piping CPAs as described below.*

*(1) Monitoring Frequency: Yearly read locations must be monitored at least once each calendar year, but with intervals not exceeding 15 months to the date.*

### *(2) Monitoring Locations:*

- Where the failure of a locating wire or bond will cause a section of steel main to become isolated and undetected by bimonthly monitoring.*
- At regulator stations where the station is tied to a CPA via a wire.*
- That provide additional verification of cathodic protection effectiveness within the CPA.*

PG&E's O-16 Corrosion Control Procedure for Corrosion Control of Gas Facilities, issued 3/27/09, was superseded by Utility Standard: TD-4181S. O-16 requirement for yearly reads was the same as the new Standard.

SED reviewed Division's corrosion records and noted that Division added a new yearly Electrolysis Test Station (ETS), CPA-S-028, located at NE Corner of Capitol Ave. & 5<sup>th</sup> Street, West Sacramento to the SAP Asset registry (RW: 106852949) in 2013 and recorded -947 mV at this location as the initial read; however, Division did not take any reads at this location in 2014. Division explained that it added the ETS to its maintenance plan on 2/2/15.



2. According to PG&E Standard O-73, (valid from 11/4/2008-06/01/2015): Digital potential meters must be calibrated once per calendar year, not to exceed 15 months.

SED reviewed Division's Digital Potential Meters (DPM) calibration records for Miller equipment with Model # 4110 and noted the following:

- Equipment with serial numbers CB-05, CB-020, CB-021, CB-022, CB-026, CB-039, CB-043, and CB-044 were not calibrated for calendar year 2014.
- Equipment with serial number CB-050 was not calibrated in calendar year 2014 and time between calibrations exceeded 15 months. Calibration dates found: 12/16/13 and 3/05/15.

3. §192.465 states in part

*“(a) – “Each pipeline that is under cathodic protection must be tested at least once each calendar year, but with intervals not exceeding 15 months, to determine whether the cathodic protection meets the requirements of §192.463...”*

In a review Division's CP records, SED noted that Division did not have any reads taken in 2013 and 2014 for five read points located in CPA 06-S-024 in the Folsom, Blue Ravine in 2013 and 2014.

Similarly, SED also noted that there are a total of 118 corrosion control test points listed in 2013 and 2014 records with “No CPA” tab name which did not have any P/S reads for both years. These locations appear to be located in Sacramento Division.

Please provide SED with P/S reads taken at these locations and explain why Division did not take or record these P/S reads in 2013 and 2014.

4. Title 49 CFR §192.475 Internal corrosion control: General.

§192.475 states in part:

*“(a) Corrosive gas may not be transported by pipeline, unless the corrosive effect of the gas on the pipeline has been investigated and steps have been taken to minimize internal corrosion.*

*(b) Whenever any pipe is removed from a pipeline for any reason, the internal surface must be inspected for evidence of corrosion.*

*If internal corrosion is found–*

- (1) The adjacent pipe must be investigated to determine the extent of internal corrosion:*
- (2) Replacement must be made to the extent required by the applicable paragraphs of §§ 192.485, 192.487, or 192,489; and,*
- (3) Steps must be taken to minimize the internal corrosion....”*

SED reviewed Leak repair, inspection and Gas Quarterly Incident Reports (A-Form) of the leaks caused by corrosion and noted that Division did not perform the internal inspection of the pipes during the following leak repairs:

1. Leak #: 50-13-55034-B, Grade 1 leak was discovered and repaired on 5/1/13 by cutting out 4-ft of 2-in gas main and installing a new 2-inch steel pipe.

2. Leak #: 50-13-35061-1, originally Grade 1 leak was discovered on 1/31/13 and downgraded to 2+ on the same day. Leak was in the street on the mainline and repaired by cutting out 4-ft of 2-inch steel gas main and replacing with steel pipe on 5/1/13.
3. Leak #: 52-11-23264-1: Grade 1 leak was discovered and downgraded to 2+ on 12/2/11 and it was repaired by cutting out an existing steel service line by installing 37-ft of 1-inch plastic on 2/17/12. However, no internal inspection was checked or recorded.

SED determined that Division should have inspected the internal surface of the pipes for evidence of internal corrosion when they were removed from a pipeline. §192.475 also requires that if internal corrosion is found, the adjacent pipe must be investigated to determine the extent of internal corrosion. Division must also take necessary corrective and preventive actions required by §192.475 (b) (2) and (3) accordingly.

Please explain PG&E's mitigative and preventive measures taken to ensure that Division's assigned personnel inspect the internal surface of the pipeline for evidence of corrosion, record findings on the form, and follow PG&E's company procedures for follow up actions. SED recommends providing additional training of the affected personnel to address this issue.

5. Title 49 CFR §192.481 Atmospheric corrosion control: Monitoring.

§192.481 (c) states in part:

*“(c) If atmospheric corrosion is found during an inspection, the operator must provide protection against the corrosion as required by §192.479.”*

SED reviewed Division's atmospheric corrosion (AC) inspections conducted in 2011-2012 and remedial actions taken for the meter set assemblies (MSAs) that were identified to have AC indications during the surveys and noted that Division did not generate a work order for the MSAs located at following addresses:

- 7800 Florinda, Sacramento
- 308 Vandenberg, Sacramento
- 195 Vernon St, Roseville

Please provide SED with remedial action records for the AC issues identified above.

## II. Areas of Concern/ Observations/ Recommendations

1. Title 49 CFR §192.465 External corrosion control: Monitoring.

§192.465 (d) states in part:

*“Each operator shall take prompt remedial action to correct any deficiencies indicated by the monitoring.”*

On 9/23/15, SED and Division visited the locations given in Table 2 and recorded the following P/S reads which did not meet the minimum  $-0.85$  Volts (V) criteria.

Location	P/S Reading (mV)
630 Elm Street, Woodland (SAP# 42699507)	-730 mV at Riser
23 East Main Street, Winters (SAP# 42729911)	-839 mV at Riser Note: Buried Meter at location see Photo 1
E/S Blue Ravine Rd. 175' S/O Riley St., in El Dorado Hills:	-809 mV at ETS DFM
9080 Elm Avenue., Orangeval, Yearly ETS	-780 mV Yearly ETS
8680 Central Avenue, Orangeval	-740 mV Yearly ETS



Photo 1. Buried meter at 23 Elm Street, Winters

Please inform SED of the corrective actions for the deficiencies identified above.

2. PG&E's procedure, Cathodic Overprotection, TD-4181P-202 Publication Date: 04/09/2014 which describes the criteria and general corrective actions for overprotection of cathodically protected gas pipelines states in part:

*“Impressed Current Systems*

*Below is the criteria for preventing overprotection conditions in impressed current systems:*

*1. The pipe-to-soil (P/S) potential of cathodically protected pipelines with impressed cathodic protection current applied (rectifiers on) must be less negative than -1600 mV,*

*OR*

*2. The P/S potential of cathodically protected pipelines with impressed cathodic protection current applied (rectifiers on) may be maintained at a level more negative than -1600 mV, if an instant-off test demonstrates that the P/S potential of the pipeline is equal to, or less negative than -1200 mV..."*

***"Corrective Actions for Impressed Current Systems***

***2.1 Confirm Overprotection Condition***

*1. IF the P/S potential measurements are more negative than -1600 mV with impressed cathodic protection current applied (rectifier on), THEN perform an instant-off test.*

*2. IF the instant-off test demonstrates that the P/S potential of the pipeline is equal to, or less negative than -1200 mV, THEN an overprotection condition does not exist, and no further action is needed.*

*3. IF the instant-off test demonstrates that the P/S potential of the pipeline is more negative than -1200 mV, THEN an overprotection condition exists.*

***2.2 IF an overprotection condition exists,***

*THEN corrosion field personnel must correct the overprotection condition within 60 calendar days.*

***2.3 IF the corrective work will take, or is expected to take over 60 calendar days,***

*THEN corrosion field personnel must develop an action plan within 60 calendar days from the date the overprotection condition was discovered..."*

On 9/23/15, SED and Division took P/S at the ETS located Sibley St. & Blue Ravine, El Dorado Hills and recorded -1.7262 V. SED asked Division to take an instant off reading and recorded -1.65 V as the first read, then 1.341 V, and 1.224 V.

Please inform SED of the corrective actions along with the most current reads taken at this location.

3. Standard Cathodic Protection Maintenance Report for CPA S-804D showed that Division recorded -450 mV of P/S read at 3040 Freeport & Bidwell Way in Sacramento on 8/12/14 and determined that a deep well anode needed to be installed. Last P/S read of -713 mV was recorded on 8/12/15 since the CPA was still down even though Division has installed a new deep well anode according to the latest action plan dated 9/17/15.

Please provide SED an update for the actions taken for CPA S-804D and provide P/S reads taken after the remedial actions are completed.

4. SED reviewed Distribution Exposed Spans Inspection Forms and determined that the forms that were filled out as a result of following inspections performed in 2014 were incomplete since they were not signed by the inspector.

- Sac/Sol: Nightengale Dr. e/o Swan Way (PR107410551); 11/19/13
- Sac/Sol: Railroad Ave w/o Sunset Ave (PR107410553); 11/26/13

Please inform SED of the actions taken for this deficiency.

5. Title 49 CFR §192.467 External corrosion control: Electrical isolation.

§ 192.467 (a) states in part:

*“(a) 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.”*

Additionally PG&E’s WP4133-04(4.C.) states:

“Conduct test or reviews when the difference between the casing and the carrier pipe pipe-to-soil (P/S) potentials are less than 100 millivolts (mV) and/or when casing P/S potentials are greater than 800mV.”

SED reviewed corrosion control monitoring records and noted that on 07/21/2014, Division recorded a casing-to-soil potential read as -806 mV for casing of DFM 0618-03 at Mile Point (MP) 1.55, SAP #41388177. SED did not find any additional testing to determine whether there was any contact between the casing and pipeline.

After the audit, Division provided SED with follow up actions planned for this contacted casing by stating: *“For DFM 0618-03 MP 1.55, SAP# 41388177, the remediation plan is to expose the casing ends, remove 3’ from each side attempting to clear the short and then gel fill. It’s scheduled for May 2016.”*

Please provide SED status update of this contacted casing and inform SED when the corrective action is completed.

6. SED reviewed Division’s CP records and noted its concerns regarding the intermittent nature of the CP for its system CPA S-218.

Division records show the following:

- On May 14, 2013 P/S reads taken within the CPA did not meet the CP requirements. On May 21, 2013 Rectifier #261 was found tripped off and again on June 11 it was found tripped off.
- On July 8, 2014 P/S reads taken at 3 ETS locations within S-218 did not meet CP requirements. On July 11, 2014 Rectifiers #332 and #261 were found tripped off.
- On September 5, 2014 P/S reads taken at 3 ETS locations within S-218 did not meet CP requirements. On September 15, 2014 Rectifiers #261 and #260 were found tripped off.
- On November 6, 2014 P/S reads taken at 3 ETS locations within S-218 did not meet CP requirements. On November 24, 2014 Rectifier #332 was found tripped off.
- On May 4, 2015 P/S reads taken at 3 ETS locations within S-218 did not meet CP requirements. On May 8, 2015 Rectifiers #332 and # 261 were found tripped off.
- On July 3, 2015 P/S reads taken at 3 ETS locations within S-218 did not meet CP requirements. On July 12, 2015, Rectifier #261 was found tripped off.

Please provide SED with an update on Division’s actions to ensure consistent CP for CPA S-218.

7. During the audit, SED requested additional corrosion control records and reviewed PG&E’s responses to the items provided; however, as of 10/30/15, PG&E was unable to provide all responses to the requests. SED will review PG&E’s responses to the outstanding items listed below and will determine if Division complied with all applicable rules and regulations:

SED requested the following PMs concerning the exposed spans listed below on 9/21/15. PG&E was unable to provide copies of the PMs. On 10/2/15, PG&E stated “*These locations are scheduled to be inspected.*” Please provide SED with copies of all PMs that were created along with the corrective action records.

- a. PM# 42049201, Yolo, e/s Sycamore Ln, n/o Quail Ave: 120 feet, 6” pipe
  - b. PM# 42049126; Power Inn Rd n/o 43rd Ave: 150 ft, 4” pipe
  - c. PM# 42049127; San Simeon Way e/o Mariposa Ave, 60 feet, 2” pipe
  - d. PM# 42049849; Florin Rd w/o East Pkwy, 60 ft, 2” pipe.
  - e. PM# 42051520; Elverta Rd w/o 28th Street.
  - f. PM# 42051521; Dry Creek Rd s/o O St.
  - g. PM# 42051522; Elkhorn Blvd & 6th St, 170 feet, 4” pipe.
  - h. PM# 42051523; s/end of 22 St 150’ w/o Bldg 1080. 30 feet.
  - i. PM# 42051525; At Creek, 1000’ n/o Bldg 704. 50 ft, 4” pipe.
  - j. PM# 42051526; s/side Dean St 400’ e/o Kilzer, 40 ft span.
  - k. PM# 42051527; w/side W. Bailey Blvd 500’ n/o Dudley, 410 ft span.
  - l. PM# 42051528; s/side James Wy 40’ w/o Arnold, 30 ft span.
  - m. PM# 42051527; e/s W Bailey Blvd 650’ n/o Dudley, 140 ft span.
  - n. PM# 42051537; Baird Wy w/o Mariposa Ave.
  - o. PM# 42051625; Sylvan Ave s/o Woodside.
  - p. PM# 42051629; East Bidwell St, 200’ e/o Blue Ravine. 110 ft, 10” pipe.
  - q. PM# 42051632; Andre Ln. n/o Gerber Rd.
  - r. PM# 42051634; Reese Rd n/o Gerber Rd. 145 feet 4” pipe.
  - s. NO PM NUMBER: Work ticket shows span needs paint. Curved Bridge Rd w/o Cherry, 600 ft, 3” pipe (11/21/13).
8. SED requested the following PMs concerning the exposed spans listed below on 9/21/15. PG&E was unable to provide copies of the PMs. On 10/2/15, PG&E stated “*These locations are scheduled to be inspected.*” Please provide SED with copies of all PMs that were created along with the corrective action records.
- a. PM# 42051639; Sibley St. n/o Blue Ravine
  - b. PM# 42049208; Buck Ave e/o Alamo
  - c. PM# 42049209; Foothill Pkwy e/o Paradise Valley Rd (Manuel Campos)
  - d. PM# 42049210; Clubhouse Dr e/o Paradise Valley Rd
  - e. PM# 42049211; Nut Tree Rd s/o Marshall Rd; 150 ft, 4” pipe.
  - f. PM# 42049128; Marysville Blvd at Arcade Creek; 140 ft, 3” pipe.
  - g. PM# 42049129; Verano St n/o Catskill Wy, 100 ft, 6” pipe.
  - h. PM# 42049130; El Camino e/o Wright Ave; 80 ft, 4” pipe.
  - i. PM# 4204913; [PM missing a digit] Howe Ave at Chicken Ranch Slough; 240 ft, 4” pipe
  - j. PM# 42049132; Winding Wy w/o Winding Ridge Ct, 40 ft, 4” pipe.
  - k. PM# 42049135; Whitney Ave e/o Walnut Ave, ¾” pipe.
  - l. PM# 42049134; Sunrise Blvd at American Bridge; 1300 ft, 6” pipe.
  - m. PM# 42049135; Gloria Dr s/o Cedar River Wy; 100 ft, 4” pipe.
  - n. PM# 42049136; Windbridge Dr s/o Cutting Wy; 60 ft, 4” pipe.
  - o. PM# 42049139; Franklin Blvd n/o “A” Pkwy; 10 ft, 6” pipe.
  - p. PM# 42049200; Franklin Blvd n/o “A” Pkwy, 540 ft, 6” pipe
  - q. PM# 42051628; STL Hung on Greenback Lane; 150ft, 6” pipe.,

- r. PM# 42051626; Hung on Greenback Ln at American River Bridge; 280 ft, 8" pipe
- s. PM# 42049207; 21841 County Rd 103, Davis.
- t. NO PM NUMBER; Norris Ave s/o Pounds; 50 ft, 2" pipe.
- u. NO PM NUMBER; East Bidwell w/o Woodsmoke Wy