PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

September 11, 2019

Ms. Christine Cowsert, VP GI-2019-07-PGE-90
Gas Asset Management and System Operations
6121 Bollinger Canyon Road
San Ramon, CA 94583

SUBJECT: General Order (GO) 112-F Gas Inspection of PG&E's Bay Area East Transmission

Dear Ms. Cowsert:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a General Order 112-F inspection of Pacific Gas & Electric Company's (PG&E) Bay Area East Transmission (Area), between July 8-12 and 15-19, 2019. The area covered included the transmission assets in PG&E's East Bay, Mission and Diablo Divisions. The inspection included a review of the Area's records for the period of 2016 through 2018, as well as a representative field sample of the Area's facilities. SED staff also observed personnel performing the covered tasks.

SED's findings are noted in the Post-Inspection Written Preliminary 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 measures taken by PG&E to address the violations and concerns noted in the Summary.

If you have any questions, please contact Sikandar Khatri at (415) 703-2565 or by email at Sikandar.Khatri@cpuc.ca.gov.

Sincerely,

Dennis Lee

Dennis Lee, P.E.
Program and Project Supervisor
Gas Safety and Reliability Branch
Safety and Enforcement Division

Enclosure: Post-Inspection Written Preliminary Findings

cc: Vincent Tanguay, PG&E
Susie Richmond, PG&E
Claudia Almengor, SED

Post-Inspection Written Preliminary Findings

Dates of Inspection: July 8-12 and 15-19, 2019

Operator: PACIFIC GAS & ELECTRIC CO (PG&E)

Operator ID: 15007 (primary)

Inspection Systems: Transmission assets (PG&E's East Bay, Mission and Diablo Divisions)

Assets (Unit IDs): Bay Area East Transmission (86285)

System Type: GT

Inspection Name: Bay Area East Transmission

Lead Inspector: Sikandar Khatri

Operator Representative: Elizabeth Wu

Unsatisfactory Results

(1) Maintenance and Operations : Gas Pipeline MAOP (MO.GOMAOP)

Question Text: Do records indicate determination of the MAOP of pipeline segments in accordance with 192.619 and limiting of the operating pressure as required?

References: 192.709(c) (192.619(a), 192.619(b))

Assets Covered: Bay Area East Transmission (86285 (74))

Issue Summary

Mission

The station diagram for the Smith St & SPPR reg. station (RF-41) was redlined on 4/14/17 to show an increase in downstream MAOP from 175 psig to 230 psig, for line L-2403-01. Per response to request BA-E#123, PG&E informed SED that this station previously had an MAOP of 240#. An underrated valve (Nordstrom Fig 143 valve, rated to 175 psig) was identified in 2013 and a Conditional Reduction of Pressure (CROP) to 175 psig was planned and approved. However, the pressure reduction was not executed in the field until 2015.

The underrated valve was removed on 12/11/2015 on work order 31157453. During MAOP validation review, several PCFs were identified with unknown pressure ratings on several branching routes. These PCFs were assigned a conservative rating of 230 psig based on historical standards.

In March of 2016, the CROP was reversed and a permanent change of MAOP took place to change the MAOP of the station to 230#. On March 20, 2019, CAP 116789690 was submitted as a mapping correction to update Operating Diagram 0800292 for Smith Street Regulation in request to update the MAOP and MAOP-S of L-2403-01. The mapping update is scheduled to be completed by 7/22/19.

49 CFR §192.619(a) states, in part:

> (a) No person may operate a segment of steel or plastic pipeline at a pressure that exceeds a maximum allowable operating pressure determined under paragraph (c) or (d) of this section, or the lowest of the following:
>
> (1) The design pressure of the weakest element in the segment, determined in accordance with subparts C and D of this part.

PG&E is in violation of 49 CFR Part 192.619(a)(1) by operating this section of L-2403-01 at an MAOP 65 psig above the pressure rating of the lowest rated component for an unknown number of years. PG&E discovered this error in 2013, but did not act to reduce pressure for an additional two years, perpetuating a pre-existing safety hazard.

In addition to above, there are few related CONCERNS:

Oakport

The outlet MAOP of the Coral Rd & Tunis Rd regulator station had differing values between the station diagram (160 psig) and the station data sheet (180 psig). In response to BA-E#51, James Harris (GPOM supervisor for Oakport) confirmed that the MAOP is 160 psig, and corrected the datasheet. No records of overpressure condition were noted at this station.

Richmond

The outlet MAOP of the C&H Sugar, Crockett regulator station had differing values between the station diagram (468 psig) and the station data sheet (473 psig). In discussion with Trevor Hughes (GPOM supervisor for Richmond), he confirmed the MAOP is 468 psig. The datasheet will need to be corrected. No records of overpressure condition were present for this station.

Concord

The Shell Ave DFM reg. station has several errors on the data sheet:

1) The standby run set points are listed as 54 psig for the regulator and 60 psig for the monitor. Actual values per PG&E GPOM supervisor should be 80 psig and 90 psig.

2) The data sheet lists 2 vaults, but the station is aboveground.

PG&E GPOM supervisor redlined the data sheet to correct these errors.

(2) Maintenance and Operations : Gas Pipeline Maintenance (MO.GM)

Question Text: Do records indicate proper inspection and partial operation of transmission line valves that may be required during an emergency as required and prompt remedial actions taken if necessary?

References: 192.709(c) (192.745(a), 192.745(b))

Assets Covered: Bay Area East Transmission (86285 (74))

Issue Summary: Diablo Division (Concord)

Main Line Valve (MLV) 181.42, SAP WM No. 41438566, is a Power Actuated valve.

The following inspection dates are listed on the Gas Valve Maintenance Record Form SERVICE HISTORY (TD-4430P-04-F02):

- 5/11/2016
- 10/4/2016
- 5/8/2017
- 1/19/2018
- 9/26/2018

PG&E Utility Procedure TD-4430P-04 Rev. 1a, Table 1 - "Valve Maintenance Frequency", indicates Power Actuated Valves must be Inspected, Serviced, Lubricated (if required), and Operated twice each calendar year.

PG&E has failed to maintain this valve twice in calendar year 2017.

Mission Division

Valve E-01, SAP WM No 41405921. Gate Valve

- All maintenance records (4/1/16, 3/27/17, 3/19/18, 3/13/19) Show Partial operation of this valve

PG&E Utility Procedure TD-4430P-04, Section 35.1.2 states:

“IF operating conditions do not permit a full operation of valve—to do so would cause downstream piping to be over-pressured or valve flow to be adversely affected,

THEN partially operate valve per instructions in Section 35.2,

AND document the reason for not fully operating the valve in the action taken section of the Gas Utility Form TD-4430P-04-F02, “Gas Valve Maintenance Record Form—Service History.”

PG&E maintained this valve in 2016, 2017, and 2018 by partially operating it, however, PG&E failed to document the reason for not fully operating the valve on Gas Utility Form TD-4430P-04-F02.

Mission Division

Valve X-47, SAP WM No 41406957. Plug Valve

- All maintenance records (7/8/16, 4/28/17, 4/4/18, 4/18/19) Show Partial operation of this valve
- PG&E Utility Procedure TD-4430P-04, Section 11.1.2 states

"IF operating conditions do not permit a full operation of valve—to do so would cause downstream piping to be over-pressured or valve flow to be adversely affected,

THEN partially operate valve per instructions in Section 11.2,

AND document the reason for not fully operating the valve in the action taken section of the Gas Utility Form TD-4430P-04-F02, "Gas Valve Maintenance Record Form—Service History."

PG&E maintained this valve in 2016, 2017, and 2018 by partially operating it, however, PG&E failed to document the reason for not fully operating the valve on Gas Utility Form TD-4430P-04-F02.

Mission Division

Valve X-81, SAP WM No 41478378. Gate Valve

- All maintenance records after 2015 (5/18/16, 5/18/17, 5/2/18, 5/21/19) Show Partial operation of this valve
- PG&E Utility Procedure TD-4430P-04, Section 35.1.2 states:

"IF operating conditions do not permit a full operation of valve—to do so would cause downstream piping to be over-pressured or valve flow to be adversely affected,

THEN partially operate valve per instructions in Section 35.2,

AND document the reason for not fully operating the valve in the action taken section of the Gas Utility Form TD-4430P-04-F02, "Gas Valve Maintenance Record Form—Service History."

PG&E maintained this valve in 2016, 2017, and 2018 by partially operating it, however, PG&E failed to document the reason for not fully operating the valve on Gas Utility Form TD-4430P-04-F02.

(3) Maintenance and Operations : Gas Pipeline Odorization (MO.GOODOR)

Question Text Do records indicate appropriate odorization of its combustible gases in accordance with its processes and conduct of the required testing to verify odorant levels met requirements?

References 192.709(c) (192.625(a), 192.625(b), 192.625(c), 192.625(d), 192.625(e), 192.625(f))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary SED reviewed Monthly Odorization Report (Form 62-4650) in Antioch office for Ryer Island. PG&E did not record the percentage gas in air reading for the 12/31/2016 report.

(4) Maintenance and Operations : Gas Pipeline Overpressure Protection (MO.GMOPP)

Question Text Do records indicate testing or review of the capacity of each pressure relief device at each pressure limiting station and pressure regulating station as required?

References 192.709(c) (192.743(a), 192.743(b), 192.743(c))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary Concord

The relief valves for the Plaza #2 reg. station were found to be set at 180 psig. However, the Capacity Review of Relief Devices form (FH-70-A) from 9/15/14 lists the Maximum Pressure Setting as 173 psig.

49 CFR §192.605(a) states, in part:

> Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response.

The relief valves have been set at 180 psig for all regulator station maintenance from 2014-2018. Therefore, this station has been in violation of design standard H-70, section 4, for nearly 5 years.

A Work Clearance Document (WCD # 80077489) was created on 7/15/19 when this issue was discovered by SED, and a crew was sent out on the same day to adjust the relief valve set points to 173 psig.

Oakport:

RC-23 Regulating station at 2nd and Alice Street, valve V-10 was found to be closed while it is supposed to be open. However, it did not create safety issues since it is standby station.

The inlet fire valve X-95 was found to be beyond 200 ft. from the station, a violation of PG&E Standard, H-14, section 16.

(5) Reporting : Regulatory Reporting (Traditional) (RPT.RR)

Question Text Do records indicate NPMS submissions were completed each year, on or before March 15, representing all in service, idle and retired assets as of December 31 of the previous year (excludes distribution lines and gathering lines) occurred, and that if no modifications occurred, an email was submitted stating that fact?

References 191.29(a) (191.29(b))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary There were four PG&E pipelines that were either abandoned in place or removed. These were not reported to NPMS before and PG&E is working with NPMS to update the records. The pipelines are: 114, 114-1 and SP4Z (removed) and 195A3-1 (abandoned in place)

(6) Time-Dependent Threats : External Corrosion - CP Monitoring (TD.CPMONITOR)

Question Text Do records document details of electrical checks of sources of rectifiers or other impressed current sources?

References 192.491(c) (192.465(b))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary Corrosion control records were reviewed. The results are in the Table 1.

Question Text Do records adequately document cathodic protection monitoring tests have occurred as required?

References 192.491(c) (192.465(a))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary There were five unsatisfactory records as recorded in the Table 1.

(7) Training and Qualification : Operator Qualification (TQ.OQ)

Question Text Do individuals performing covered tasks demonstrate adequate skills, knowledge, and ability?

References 192.805(h)

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary On 7/15/19 the PG&E employees adjusted the set points of the relief valves on the Plaza #2 station to 173 psig. The maintenance record was signed by LANID DXVC. On 7/18/19, SED visited Plaza #2 to verify the set points of the two relief valves at the station. DXVC performed the maintenance again with D3MZ. The employees called the set point of the relief valve at 173 psig when the pilot actuated. The supervisor (J3HP) corrected the employees and stated that the set point had not been reached since the main relief valve had not cracked. The maintenance was continued and the as found set points for both of the relief valves were found to be 183 psig.

PG&E procedure TD-4545P-10 defines the relief valve set point as, "The point at which the main body of the relief valve begins to open, also referred to as the cracking pressure or initial cracking pressure." PG&E procedure TD-4545P-10 part 6.1 contains the requirements for relief device maintenance. This part of the procedure was not followed by DXVC and the set points for both relief valves were left at 183 psig during the 7/15/19 maintenance as a result.

192.805(h) requires operators to, "...provide training, as appropriate, to ensure that individuals performing covered tasks have the necessary knowledge and skills to perform the tasks in a manner that ensures the safe operation of pipeline facilities..." DXVC and D3MZ did not demonstrate adequate knowledge of procedure TD-4545P-10 to identify the set points of relief valves. SED therefore finds PG&E in violation of 192.805(h).

Concerns

(1) Design and Construction : Design of Pipe - Overpressure Protection (DC.DPCOPP)

Question Text Do records indicate that the pipeline has pressure relieving or pressure limiting devices that are required of 192.195(a), and that they meet the requirements of 192.199 and 192.201?

References 192.195(a) (192.199(a), 192.199(b), 192.199(c), 192.199(d), 192.199(e), 192.199(f), 192.199(g), 192.199(h), 192.201(a), 192.201(b), 192.201(c))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary Oakport

Coral Rd & Tunis Rd station

The station outlet MAOP is 160 psig, and the monitors are set right at 160 psig.

TD-4125P-07 rev 1b, Table 2 ("Maximum Recommended Set Points of Regulator and OPP Device—Downstream MAOP Greater than 60 psig ") states that, for an MAOP greater than 60 psig AND less than 250 psig, the monitor set point should be 5 psig below MAOP. Additionally, Table 2 states that the regulator should be set at 10 psig below MAOP, and the standby regulator should be set at 10 psig below regulator set point.

These values correspond to the following maximum recommended set points:

Monitor = 155 psig

Regulator = 150 psig

Standby Regulator = 140 psig

Revision 1b of TD-4125P-07 became effective 4/25/2016. As a result, PG&E has been in violation of the recommended setting for 3 years. However, this is a recommendation only, and in SED's opinion, the previous set point would not result in a violation of 49 CFR 192.201 - Required capacity of pressure relieving and limiting stations.

Per conversation with PG&E GPOM supervisor for Oakport, the set points will be lowered to the recommended values on the next annual maintenance, scheduled for July 2019.

(2) Design and Construction : Design of Pipe Components (DC.DPC)

Question Text Do field observations confirm that each pipeline was electrically isolated from metallic casings that are a part of the underground system?

References 192.467(c) (192.143(b))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary While doing an ACVG test on X6460 at MP 17.72, PG&E found the ACVG reads suggested a potential short between the casing and the pipe. SED staff asked if the casing was on the contacted casing list. PG&E responded that the casing had been removed.

Thus, a follow-up question was asked about when the casing was removed, and when the last ACVG test was done. The data request response showed the casing was removed in September 2015. The ACVG inspection was conducted on May 14, 2019.

Thus, the corrosion tech was not aware that the casing had been removed. This resulted in the corrosion tech doing an ACVG test, where none was needed. This is a waste of resources, and demonstrates an error when updating the maps.

SED staff recommends PG&E audit a representative random sample of removed casing and determine if the maps have been properly updated. If the answer is no, then PG&E should expand the audit to cover all casings. Please indicate what PG&E intends to do in this regard.

(3) Facilities and Storage : Facilities General (FS.FG)

Question Text Do records document the adequacy of inspections of all vaults having an internal volume ≥200 cubic feet (5.66 cubic meters) that house pressure regulating/limiting equipment?

References 192.709(c) (192.749(a), 192.749(b), 192.749(c), 192.749(d))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary Vault inspection records reviewed indicated adequate frequency and thoroughness of vault inspections.

However, it was found that five vaults that exceed 200 cubic feet were not in SAP. While these vaults were inspected per the required schedule, SED recommends PG&E add these vaults to SAP to ensure a complete digital record of all assets is kept:

2x vaults at C&H Sugar, Crockett (GT R-L04) in Richmond

2x Franklin Canyon (GT R-L09) in Richmond

1x vault at Plaza #2 (GT DR W30) in Concord

Per response from regulatory compliance, RW 117620134 has been created and sent to GT Mapping to create the vault EQ missing from SAP for Plaza No 2 Reg. Station. Additional RWs will be created to add the other four vaults to SAP.

(4) Maintenance and Operations : Gas Pipeline Class Location (MO.GOCLASS)

Question Text Are unsatisfactory conditions being captured and addressed by continuing surveillance of facilities and the pipeline as required by 192.613?

References 192.613(a) (192.613(b), 192.703(a), 192.703(b), 192.703(c))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary Richmond

On Friday 7/12, SED observed that all six pipeline supports at Union Carbon Chemical Plant regulator station were not in contact with the pipe. Furthermore, the station yard was overgrown with tall weeds. However, the aboveground section of piping was relatively short, and the missing supports were unlikely to introduce undue strain or vibration on the equipment, so SED does not see this as a violation of 49 CFR 192.161, however concern remains.

Per response to BA-E#108:

Vegetation was cleared on 7/16/19

SAP notification to fix pipe supports: 117603434. Work completed on 7/16/19.

Richmond

On Friday 7/12, while observing transmission span equipment ID 43187970 (Span at Wildcat Creek Xing), SED observed that an adjacent distribution span had two dents in the pipeline. This is being followed up via a request to GOST. An update is required on the action taken.

(5) Maintenance and Operations : Gas Pipeline Maintenance (MO.GM)

Question Text: Do records indicate proper inspection of each vault to determine whether it is in good physical condition and adequately ventilated as required and any necessary action taken to remediate deficiencies?

References: 192.605(b)(1) (192.749(a), 192.749(b), 192.749(c), 192.749(d))

Assets Covered: Bay Area East Transmission (86285 (74))

Issue Summary

Oakport

The same issues were found 5 years in a row for the vaults at the Coral Rd & Tunis Rd regulator station (RC-21), from 2013 through 2018 for repairs needed on the pipeline coating, the vault lids, and the ventilation system.

Notifications 109215186 and 109215187 were generated in 2014 to repair the vault lid and vents, but were canceled in 2015 and never recreated. The coating notification was not created until 2018 (notification 114852552).

49 CFR §192.749 states, in part:

> (c) The ventilating equipment must also be inspected to determine that it is functioning properly. (d) Each vault cover must be inspected to assure that it does not present a hazard to public safety.

While the vaults in question have been inspected regularly, PG&E has not taken prompt action to repair the safety issues found. SED strongly encourages PG&E to address these hazards.

Diablo

A vault in Antioch Terminal (SAP# 41465879, vault for Tubes 17 & 18 V-105R) had a vent tube that was observed to be broken 7/30/16 and every year since including the latest inspection on 6/26/19. An OCW was created along with notification # 112134782 . However, the OCW did not generate an order to have M&C schedule the work.

(6) Maintenance and Operations : Gas Pipeline Operations (MO.GO)

Question Text: Are unsatisfactory conditions being captured and addressed by continuing surveillance of facilities and the pipeline as required by 192.613?

References: 192.613(a) (192.613(b), 192.703(a), 192.703(b), 192.703(c))

Assets Covered: Bay Area East Transmission (86285 (74))

Issue Summary: Richmond

On Friday 7/12, SED observed that all six pipeline supports at Union Carbon Chemical Plant regulator station were not in contact with the pipe. Furthermore, the station yard was overgrown with tall weeds. However, the aboveground section of piping was relatively short, and the missing supports were unlikely to introduce undue strain or vibration on the equipment, so SED does not see this as a violation of 49 CFR 192.161, however concern remains.

Per response to BA-E#108:

Vegetation was cleared on 7/16/19

SAP notification to fix pipe supports: 117603434. Work completed on 7/16/19.

Richmond

On Friday 7/12, while observing transmission span equipment ID 43187970 (Span at Wildcat Creek Xing), SED observed that an adjacent distribution span had two dents in the pipeline. This is being followed up via a request to GOST. An update is required on the action taken.

Question Text Are construction records, maps and operating history available to appropriate operating personnel?

References 192.605(a) (192.605(b)(3))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary There are situations where the records were not updated. For example, the construction projects, 31282195 and 74004041 were completed in 2016 and 2017 respectively and updated records were not available. There were other projects completed in 2018, and no updated records were available.

A number of CPA monitoring records extracted from SAP had missing data.

In some cases, operating diagrams of regulator stations were red lined, but these were not updated. In case of loss of red-lined version, the important information will be lost and safety will be compromised.

GO-112 F Annual report for 2018, section 123.2(e) shows that there are 2309 records that have not been updated for more than 360 days.

This results in a concern that PG&E staff do not have access to updated records which can cause safety issues.

Mission

Smith St & SPPR (Fremont) – GT RF-41

Outlet fire valve E-85 (41433021) valve card lists it as a distribution valve. It should be transmission since the outlet MAOP is 230#, making this a transmission valve per PG&E's internal definition of transmission. GPOM supervisor redlined the valve card on 7/16/19

Santa Rita Meter Station (Livermore) – GT RL-37

Inlet fire valve D-23 (44239473), valve card says normally closed, but station diagram and maintenance records show it is normally open. GPOM supervisor redlined the valve card on 7/16/19

Valve D-101 (44229275) valve card says normally closed. Diagram says normally open. Per response from PG&E, this valve does not affect station operation, so it had been standard practice to alternate its state each year. However, after further consideration, GPOM supervisor redlined the valve card on 7/17/19 and the valve will be maintained as normally open from now on.

Timber & Central (Fremont) – RF-61

Inlet fire valve X-115, valve card marked as distribution. It should be transmission since the inlet MAOP is 250#. GPOM supervisor redlined the valve card on 7/17/19.

Isabel Ave. W/O Stanley Blvd. (DFM) (Livermore) – GT RL-07

The data sheet for this reg. station does not list any valve as fire valves, and there are no valve maintenance records in the binder. Per response to data request BA-E#148, the fire valves are maintained by Tracy. SED recommends updating the data sheet to list the correct fire valves, and adding a sheet under the valve tab in the station binder stating that these valves are maintained by Tracy.

Question Text Are construction records, maps and operating history available to appropriate operating personnel?

References 192.605(b)(3)

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary The updated records were not available during field visits, and also in some instances crew was not able to locate assets in field, especially in Oakport area.

(7) Maintenance and Operations : ROW Markers, Patrols, Leakage Survey and Monitoring (MO.RW)

Question Text Do records indicate leakage surveys conducted as required?

References 192.709(c) (192.706, 192.706(a), 192.706(b), 192.935(d))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary Leak # 114557374 was reopened after SED field visit; this was earlier reported by PG&E as zeroed out.

(8) Time-Dependent Threats : Atmospheric Corrosion (TD.ATM)

Question Text Is pipe that is exposed to atmospheric corrosion protected?

References 192.481(b) (192.481(c), 192.479(a), 192.479(b), 192.479(c))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary Diablo Division

During the field inspection on 7/18, SED found that the span #43161602 at s/s Alhambra Way, 300’ e/o Alhambra Ave at the bridge had heavy vegetation at one side of the air-to-soil transition. The same issue was found in 2017 atmospheric inspection. SED suggest PG&E take more frequent action to prevent the growth of vegetation.

Question Text Do records document inspection of aboveground pipe for atmospheric corrosion?

References 192.491(c) (192.481(a), 192.481(b), 192.481(c))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary On the 2017 Atmospheric Corrosion Inspection Record, PG&E personnel (LAN ID GGL2) noted on a span (equipment # 43161602) that "PIPE TO SOIL TRANSITION ON WEST SIDE OF PIPE COVERED WITH IVY", and the photo showed that the air-to-soil transition was not visible. SED had an impression that the inspection was not completed if the air-to-soil transition was not visible, and PG&E should have document showing the air-to-soil condition after removing the vegetation to complete the 2017 atmospheric corrosion inspection.

After talking to concerned PG&E staff Gary (GGL2), he said that he pushed the ivy away to inspect the air-to-soil transition. However, he did not take the picture showing the air-to-soil condition. SED recommend PG&E's vegetation control remove the vegetation before the AC inspection in the future.

(9) Time-Dependent Threats : External Corrosion - CP Monitoring (TD.CPMONITOR)

Question Text Are impressed current sources properly maintained and are they functioning properly?

References 192.465(b)

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary Richmond

On Thursday 7/11, Rectifier #17 (equipment # 42711824) was observed to be not producing any current. Per technicians in the field (DEBS and GXLA), this line is protected by other rectifiers. No low pipe-to-soil readings were observed at any point on the affected line (SP3) by SED.

Per response to BA-E#107, SAP notification 117600609 was generated and the rectifier underwent additional investigation the following day (Friday 7/12). This rectifier is under plans to be replaced by a new rectifier which will be active in August (under PM 97005942), which will ultimately render this issue obsolete.

Question Text Do records document an effective program is in place to minimize detrimental effects of interference currents and that detrimental effects of interference currents from CP systems on other underground metallic structures are minimized?

References 192.491(c) (192.473(a))

Assets Covered Bay Area East Transmission (86285 (74))

Issue Summary PG&E experiences significant dynamic DC interference from BART in the East Bay region. This causes pipe-to-soil reads to fluctuate significantly while technicians take the reading. Per conversation with corrosion supervisors, the standard practice is for technicians to take an average over time. However there is no procedure or job aid that specifies to do this, or provides any guidance on how to do so (e.g., how long to average readings over). The East Bay Guidance Handbook for Dynamic DC Interference provided in response to data request BA-E#76 states, "Dynamic DC Interference is the top threat of External Corrosion." In light of this, SED strongly recommends PG&E develop a more robust procedure for measuring pipe-to-soil potentials in areas heavily impacted by dynamic DC interference, and train all technicians on this practice to ensure uniformity across the board.

SED further recommends PG&E look into whether simply taking an average is sufficient to ensure adequate coverage of the pipeline. For example, a more conservative method might be to take the average and subtract one standard deviation to provide more confidence in the fluctuating read.

Table 1.

Item	Equipment Type	Excel Workbook	Tab	Equipment #	Violation Number	Description of Issue
1	Rectifier	Concord	SP3DIV	42734204	192.465(c)	For calendar year 2016, the rectifier exceeded its required two and a half month interval between rectifier checks between 6/9 and 11/29
2	ETS	Concord	3017-01	42579970	192.465(a)	This ETS was RPO'd on 11/28/18. But there was no record for 2016 and 2017. In the absence of maintenance records, this is a violation.
3	Rectifier	Concord	D4709	41294719	192.465(c)	Records for 2018 were unavailable for review. In the absence of maintenance records, this is a violation.
4	ETS	Concord	Contra Costa	42671317	192.465(a)	Records for 2016 and 2017 were unavailable for review. In the absence of maintenance records, this is a violation.
5	ETS	Hayward	2408-11	42709440	192.465(a)	The 2016 and 2017 records were unavailable for review. In the absence of maintenance records, this is a violation