STATE OF CALIFORNIA EDMUND G. BROWN JR.,
Governor

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

March 23, 2016

Mr. Jimmie Cho, Senior Vice President **GI2015-10-SCG64-02A**
Gas Operations and System Integrity
Southern California Gas Company
555 West 5th Street, GT21C3
Los Angeles, CA 90013

Subject: General Order (G.O.) 112-F Operation and Maintenance Inspection of Southern California Gas Company's Cathodic Protection Facilities in the Southeast Region Inland East that includes the district of Chino, Corona, and Fontana

Dear Mr. Cho:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a G.O. 112-F Operation and Maintenance Inspection of Southern California Gas Company's (SCG) Cathodic Protection (CP) Facilities in the Southeast Region Inland East Inspection Unit (Chino, Corona, and Fontana) on October 26-30, 2015. The inspection included a review of the Inspection Unit's cathodic protection and bridge/span inspection records for calendar years 2013 and 2014 and random field inspections of pipeline facilities in the Chino, Corona, and Fontana districts. SED staff also reviewed the Inspection Unit's Operator Qualification records, which included field observation of randomly selected individuals performing covered tasks.

SED staff noted 11 probable violations and made two recommendations. These probable violations and recommendations are noted in the attached "Summary of Inspection Findings".

Please provide a written response within 30 days of receipt of this letter indicating any updates or corrective actions taken by SCG.

If you have any questions, please contact Mahmoud (Steve) Intably, at (213) 576-7016.

Sincerely,

Kenneth A. Bruno

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

CC: Mahmoud (Steve) Intably, SED/GSRB, Matthewson Epuna, SED/GSRB, Kan Wai Tong, SED/GSRB, and Jeff Koskie, Sempra Energy Utilities

Summary of Inspection Findings
2015 SCG Southeast Region East Inland Inspection Unit (Chino, Corona, and Fontana)
October 26-30, 2015

I. SED Identified Probable Violations

1. Title 49 CFR, Part 192 §192.13(c) What general requirements apply to pipelines regulated under this part?

"Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part."

A. SCG Gas Standard 223.0100 Pipeline Integrity, Section 7 Abnormal Operating Conditions requires corrective action when a gas meter buried in earth or paving.

During the field inspection of SCG's Cathodic Protection (CP) facilities, SED staff observed that SCG's customer gas meter was partially buried in dirt and in contact with the ground. The gas meters at the following locations exhibited atmospheric corrosion (heavy rust):

1) COLTON REC1, test station R at 965 East E Street (gas curb Meter Set Assembly (MSA) - multiple meters set)
2) COLTON REC1, Gas curb MSA , multiple meter sets, next to subway restaurant at 955 East E Street
3) 3612 Philadelphia Street, Chino
4) Meter number 448291

SCG did not follow its Gas Standard 223.0100 Pipeline Integrity, Section 7 Abnormal Operating Conditions and did not take corrective actions to mitigate the partially buried gas meters at the aforementioned locations. . Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR, Part 192 §192.13(c).

B. SCG Gas Standard 184.12 Inspection of Pipeline on Bridges and Spans, Section 6 Records requires marking "Y*es*" on the "*Bridge and Span Inspection Checklis*t" when special access instructions and/or tools needed.

During the field inspection and record review of SCG's Span number S1006, SED staff observed that the span number S1006 requires special access and the "*Bridge and Span Inspection Checklist*" for special access criteria the "Box" was not checked.

SCG did not to follow its Gas Standard 184.12 Inspection of Pipeline on Bridges and Spans, Section 6 Records and mark the "Yes Box" for special access. Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR Part 192 §192.13(c).

2. Title 49 CFR, Part 192 §192.353 Customer meters and regulators: Location.

(a) Each meter and service regulator, whether inside or outside a building, must be installed in a readily accessible location and be protected from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated. However, the upstream regulator in a series may be buried.
(b) Each service regulator installed within a building must be located as near as practical to the point of service line entrance.
(c) Each meter installed within a building must be located in a ventilated place and not less than 3 feet (914 millimeters) from any source of ignition or any source of heat which might damage the meter.
(d) Where feasible, the upstream regulator in a series must be located outside the building, unless it is located in a separate metering or regulating building.

SCG Standard 185.0008 Meter Guard - Installation, Section 2, Procedure, 2.1, General, 2.1.1 states

"Meter guards are required where aboveground MSAs are within 3 feet of driveways, roadways, alleys, parking stalls, wheel bumpers, trash collection areas and areas where industrial equipment (forklifts, loaders, etc.) may operate."

During the field inspection, SED staff observed that SCG's customer meters, regulators, and aboveground facilities were exposed to vehicular traffic at the following locations:

1. CP package ID COLTON REC1, test station F (439 Stoddard Ave., San Bernardino)
2. CP package ID CLTN008, test station A, B, and 940 Cypress
3. 12115 Humboldt Place, Chino 91710

SCG did not identify and install appropriate barriers to protect the customer meters, regulators, and aboveground facilities from vehicular traffic at the aforementioned locations. Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR Part 192, Section 192.353(a).

4. Title 49 CFR, Part 192 §192.357(a) Customer meters and regulators: Installation.

"Each meter and each regulator must be installed so as to minimize anticipated stresses upon the connecting piping and the meter."

During the field inspection, SED staff observed that SCG facilities at 439 Stoddard Ave., San Bernardino and 3625 Philadelphia Street, Chino did not have proper support to prevent stress/strain on the service riser.

SCG did not identify and provide proper support to the above ground pipe at the aforementioned location to prevent stress/strain on the service riser. Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR Part 192, Section 192.357(a).

5. Title 49 CFR, Part 192 §192.465(d) External Corrosion Control: Monitoring.

"Each operator shall take prompt remedial action to correct any deficiencies indicated by monitoring."

During the records review of SCG's CP packages, SED staff found that the following CP packages were out of tolerance:

1) SB-0249-1-A found out of tolerance on 5/11/2015 (anode bed depleted) and SCG failed to take action in a timely manner to submit the necessary document to obtain a permit to install a new anode bed.
2) SB0914-A found out of tolerance on 6/2/2015 (anode bed depleted) and SCG failed to take action in a timely manner to submit the necessary document to obtain a permit to install a new anode bed.

SCG did not to take prompt remedial action to correct the deficiencies at the aforementioned locations. Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.465(d).

6. Title 49 CFR, Part 192 §192.479(a) Atmospheric Corrosion Control – General

"Each operator must clean and coat each pipeline or portion of pipeline that is exposed to the atmosphere, except pipelines under paragraph (c) of this section"

During the field inspection of SCG's CP facilities, SED staff observed that SCG's above ground piping at the following locations had severe atmospheric corrosion damage (pitting):

1) CP package COLTON REC1, test station R at 965 East E Street
2) Curb MSA in CP package COLTON REC1 next to Subway restaurant
3) 3612 Philadelphia Street, Chino
4) Piping for meter number 448291

SCG did not clean and coat the aboveground pipelines that had atmospheric corrosion at the aforementioned locations. Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.479(a).

7. Title 49 CFR, Part 192 §192.481 Atmospheric Corrosion Control – Monitoring.

"(a) Each operator must inspect each pipeline or portion of pipeline that is exposed to the atmosphere for evidence of atmospheric corrosion, as follows:

If the pipeline is located:	*Then the frequency of inspection is:*
Onshore	*At least once every 3 calendar years, but with intervals not exceeding 39 months*
Offshore	*At least once each calendar year, but with intervals not exceeding 15 months*

(b) During inspections the operator must give particular attention to pipe at soil-to-air interfaces, under thermal insulation, under disbonded coatings, at pipe supports, in splash zones, at deck penetrations, and in spans over water.

(c) If atmospheric corrosion is found during an inspection, the operator must provide protection against the corrosion as required by Sec. 192.479."

SCG did not provide atmospheric corrosion records of its curbside meter set assemblies (MSAs). SED also sampled MSAs within the districts and observed evidence that inspection for atmospheric corrosion was performed based on the observed MSAs that were partially buried in the ground and aboveground pipeline with rusts. Therefore, SCG is in violation of Title 49 CFR, Part 192 §192.481 for failing to inspect its above ground piping for evidence of atmospheric corrosion.

8. Title 49 CFR, Part 192 §192.491(a) Corrosion Control Records

"Each operator shall maintain records or maps to show the location of cathodically protected piping, cathodic protection facilities, galvanic anodes, and neighboring structures bonded to the cathodic protection system. Records or maps showing a stated number of anodes, installed in a stated manner or spacing, need not show specific distances to each buried anode."

During the field inspection of SCG's CP facilities, SED staff observed that SCG's CP package ID SB0248-A did not have records or maps showing the location of the galvanic anode bed.

SCG did not maintain records or maps of the galvanic anode bed location for the CP package ID SB0248-A. Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.491(a).

9. Title 49 CFR, Part §192.365(b) Service Lines: Location of valves

"Outside valves. Each service line must have a shutoff valve in a readily accessible location that, if feasible, is outside of the building."

During the field inspection of SCG CP facilities, SED staff observed that SCG service shutoff valve at the following locations were inaccessible (buried in dirt (sand)):

1) NORCO7, test station C, E, and F (1024 2nd St., 1178 2nd St., and 1639 Temescal Rd.)
2) Meter number 448291
3) GT019, test station C

SCG did not identify and ensure that the shutoff valves at the aforementioned locations were readily accessible. Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.365(b).

10. Title 49 CFR, Part 192 §192.467 (a) & (d) External corrosion control: Electrical isolation.

(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.

(d) Inspection and electrical tests must be made to assure that electrical isolation is adequate.

SCG did not provide inspection/test records to ensure that the electrical isolation of the casings from the gas carrier pipe in accordance with Part 192 section 192.467(d). SCG did not have test leads on each casing to perform monitoring tests and to document that the casing is electrically isolated and clear of all metallic shorts and electrolytic contacts.

11. Title 49 CFR, Part 192 §192.465(a) External corrosion control: Monitoring.

" 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. However, if tests at those intervals are impractical for separately protected short sections of mains or transmission line, not in excess of 100 feet (30 meters), or separately protected service line, these pipelines may be surveyed on a sampling basis. At least 10 percent of these protected structures, distributed over the entire system must be surveyed each calendar year, with a different 10 percent checked each subsequent year, so that the entire system is tested in each 10-year period."

The regulation requires separately protected short sections of mains or transmission line, not in excess of 100 feet, or separately protected service line to be tested at least once each calendar year but with interval not to exceed 15 months. The regulation gives an exception for those sections that are impractical to survey on a sampling basis. SED observed during the field inspection that some of the CP packages that were separately protected service lines were classified as ten percenter (10% CP) and were surveyed on a 10 % sampling basis without justification to why the testing of those separately protected service lines were impractical to be monitored at least once each calendar year but with interval not to exceed 15 months.

SCG did not provide justification to why those separately protected short sections were impractical to be monitored at least once each calendar year but with interval not to exceed 15 months. SCG did not provide factors that made it impractical to monitor these CP points at least once each calendar year but with interval not to exceed 15 months. Therefore, SCG is in violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.465(a).

II Concerns and Recommendations

1. SCG Gas Standard 186.0135 operation and Maintenance of Cathodic Protection Facilities, Section 4.3 Monitoring Frequency, Sub-Section 4.3.2 states:

"Ten percent of cathodically protected isolated services and segments of main 100 feet or less in length shall be monitored each year and a different ten percent

each subsequent year so that all facilities are monitored within a ten year period."

SCG Standard 186.0135 Operation and Maintenance of Cathodic Protection Facilities failed to address impractical to justify the survey on a sampling basis for the separately protected short sections. We recommend that SCG review/revise its Standard 186.0135 to address "impractical" and provide justification to why the testing once each calendar year is impractical for each separately protected short section.

2. SCG Gas 182.0095 Piping Spans-Unsupported, Section 1.3 States:

"Stresses and deflections can vary due to a number of conditions such as end restraints, pipe properties and operating conditions. If the span length exceeds the maximum allowable length shown in Table 1, ***Pipeline Design*** *shall be consulted to determine if actual conditions justify increasing the allowable length for the span being evaluated."*

During a field inspection SED staff observed that:

1) Span number S95 had deflection
2) Span number B1105 is an encased carrier pipe that was not properly supported

SED recommends that SCG consult with Pipeline Design Department to determine if additional support is needed.

During field visit SED observed the following rectifiers with current output that exceeded its established upper limit, which is an indication of depleting anode bed.

Table-X: Rectifier DC Current Output

District	Rectifier	DC Current Output (amps)	DC Current Output Upper Limit (amps)
CORONA	NORCO-REC3	6.4	6
CORONA	NORCO REC4	2.94	2.9

SED recommends that SCG review/revise its procedure and be proactive in replacing the anode bed to ensure continuous cathodic protection on its facilities.