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

May 15, 2018 GI-2018-02-SCG-54

Jimmie Cho, Senior Vice President
Gas Operations and System Integrity
Southern California Gas Company
555 West 5th Street, GT21C3
Los Angeles, CA 90013

SUBJECT: GO112 Gas Inspection of SCG's San Juaquin Valley Transmission Inspection Unit

Dear Mr. Cho:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a General Order 112 inspection of Southern California Gas Company (SCG) San Juaquin Valley Transmission Inspection Unit from February 26 through March 2, 2018. The inspection included a review of the Inspection Unit records of maintenance activities for the period of January 1, 2015 through December 31, 2017 and a representative sample of SCG facilities field inspections in the Taft, Valencia, Bakersfield, & Visalia districts. SED staff also reviewed the Inspection Unit's Operator Qualification records, which included field observation of randomly selected individuals performing covered tasks.

A Summary of Inspection Findings (Summary), which contains probable violations and areas of concerns and recommendations identified by SED staff, is included as an attachment to this letter.

Please provide a written response indicating the measures taken by SCG to address the probable violations, areas of concerns, and recommendations within 30 days from the date of this letter.

If you have any questions, please contact Alula Gebremedhin at (415) 703-1816 or by email at ag5@cpuc.ca.gov.

Sincerely,

Kenneth A. Bruno

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

Enclosure: Summary of Inspection Findings
cc: Troy Bauer, SCG Regulatory Compliance
Dennis Lee, SED/GSRB

Matt Epuna, SED/GSRB
Kan-Wai Tong, SED/GSRB

SUMMARY OF INSPECTION FINDINGS

I. Probable Violations

1. Title 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 ...."*

1.1. SCG's Gas Standard 186.0103, *External Surface Preparation and Field Applied Coating for Buried Pipelines,* Section 4.3.2 states in part:

*"**Liquid coatings**: .... Approved coatings are:*

*4.3.2.1. **3M 323 Liquid Epoxy Coating**, 25 to 60 mils DFT with an average between 25 to 40 mils DFT"*

However, during review of SCG's coating records, SED found that:

i. Coating Inspection Report for project # WOA 92404, dated 11/22 - 23/2016, shows that the coating was approved with Dry Film Thickness (DFT) average value of 23.1 mils,
ii. Coating Inspection Report for project # WOA 91802, dated 2/2/2016 shows that the coating was approved with DFT average value of 20 mils,

Therefore, SCG is in violation of GO 112-F, Referenced Title 49 CFR §192.605(a), for its failure to follow its own procedure by accepting out of range DFT values.

1.2. SCG's Gas Standard 186.0103, External Surface Preparation and Field Applied Coating for Buried Pipelines, Section 4.2.1 states in part

"4.2. SURFACE PREPARATION:

4.2.2. All weld spatter or sharp edges shall be filed or ground flat by hand prior to blasting. Blast cleaned metal surfaces, whether using the dry or wet method, shall have a sharp angular anchor profile between 2-4 mils, as determined by replica tape (NACE RP 0287) or other suitable and reliable profiling tool. For power tool cleaned surfaces, any original surface profile should not be removed (i.e. surface shall not be buffed smooth) but left with minimum 1 mil profile whenever possible."

And

SCG's Gas Standard SCG 186.0104, Surface Preparation and Coating for Above Ground Piping and Steel Components, Section 4.3.3 also stated that, (PS: the 2011 version of the standard has also similar information)

"4.3. SURFACE PREPARATION:

4.3.3. The resulting surface anchor profile shall measure between 1.5 to 3.5 mils as confirmed by Testex replica tape (NACE RP0287) or other suitable profiling tool."

In addition, SCG Standard 4005 *Coating Inspection Report (published on 02/11/2016), DATA ENTRY INSTRUCTIONS,* Section G, requires Anchor Profile (G3) and DFT Average (G4) values need to be recorded.

However, during review of SCG's coating records, SED found that:

Anchor profile was not recorded on the coating inspection forms for project # WOA 90887, dated 9/23/2016, and project # WOA 91337, dated 1/9/2015, to confirm its acceptability.

Therefore, SCG is in violation of GO 112-F, Referenced Title 49 CFR §192.605(a), for its failure to follow its own procedure by not recording the Anchor Profile to confirm they were within the acceptable range stated in its procedure.

2. Title 49 CFR §192.743(a) states in part:

"(a) Pressure relief devices at pressure limiting stations and pressure regulating stations must have sufficient capacity to protect the facilities to which they are connected.

Except as provided in §192.739(b), the capacity must be consistent with the pressure limits of §192.201(a). This capacity must be determined at intervals not exceeding 15 months, but at least once each calendar year, by testing the devices in place or by review and calculations"

However, during review of SCG's relief valve maintenance records, SED found that, neither relief valve capacity calculation nor annual capacity recheck performed for relief valves RV-1 and RV-2 at station 8120-0.01S, and no capacity check in 2017 for valve BRNG 156.

Therefore, SCG is in violation of GO 112-F, Referenced Title 49 CFR §192.743(a), for its failure to calculate the capacity of its relief valves and check it annually.

3. Title 49 CFR §192.739(a) states in part:

"(a) Each pressure limiting station, relief device (except rupture discs), and pressure regulating station and its equipment must be subjected at intervals not exceeding 15 months, but at least once each calendar year, to inspections and tests to determine that it is–".

And

3.1. SCG Gas Standard 223.0345, *Pressure Relief/Pressure Limiting Devices, Testing/ Inspection,* Section 11.6.4. states in part,

"11. Method — Pressure Limiting

11.6.4 ***Check lockup*** *if applicable (i.e. – any soft seated regulator such as a Grove, Mooney, Fisher, etc.) Metal to metal seated regulators and valves used as control valves that are functioning as service regulators do not apply."*

However, during review of SCG's pressure limiting station maintenance records, SED found that, no lock-up test performed for station 85-94.305 (2016 & 2017 maintenances) and station 173-5.22 (2017 maintenance)

Therefore, SCG is in violation of GO 112-F, Referenced Title 49 CFR §192.739(a), for its failure to conduct complete inspection of its pressure regulating station as required by its procedure.

3.2. SCG Gas Standard 223.0345, Pressure Relief/Pressure Limiting Devices, Testing/ Inspection, that was revised and published on 12/29/2016, Section 13.2.1. states in part,

"13. Method – Pressure Relieving, Signaling Device

13.2. Is set to function at the correct pressure and, after closing, has a positive shut-off. This determined by test

*13.2.1. When inspections and tests disclose positive shut off does not occur **within 90% of set pressure**, take steps without delay to readjust, repair, replace or install additional devices as appropriate*

However, during review of SCG's relief valve maintenance records, SED found that, the relief positive shutoff or re-seat pressures was below 90% of set pressures and no corrective measures were taken as per SCG's standard, for stations 13.5, 85-78.60S, 103-9.14, & GNN 38339, during the 2017 maintenances of the valves.

Therefore, SCG is in violation of GO 112-F, Referenced Title 49 CFR §192.739(a), for its failure to conduct complete inspection of its relief valves as required by its procedure.

4. Title 49 CFR §192.463(a) states:

"*Each cathodic protection system required by this subpart must provide a level of cathodic protection that complies with* ***one or more of the applicable criteria contained in Appendix D of this part****. If none of these criteria is applicable, the cathodic protection system must provide a level of cathodic protection at least equal to that provided by compliance with one or more of these criteria"*

And,

Appendix D, Section III states in part, regarding 100mV polarization voltage shift criteria under Section I (3)

"*III. The polarization voltage shift must be determined by interrupting the protective current and measuring the polarization decay"*

During a field visit, SED observed that SCG takes an "on" read, and then compares it to a previously established lower limit. That voltage shift is then compared to the native potential to determine if the 100 mV shift criteria are met. SCG does not interrupt the rectifiers that are influencing the read point, rather SCG establishes a lower bound and upper bound, and if the read is in between these two reads, then the read is deemed OK. SED also observed this practice in other districts, which implies it is a system wide practice.

This is contrary to 192.463(a), which references Appendix D for measuring the 100 mV shift criteria. Appendix D Section III requires the protective current must be interrupted to measure the polarization shift voltage at that moment.

Further, the IR drop will change over time with changes in ground moisture and the current output from rectifier settings. This results in an unknown IR drop.

Therefore, SCG is in violation of GO 112-F, Referenced Title 49 CFR §192.463(a), for its failure to properly follow the requirement of Appendix D, referenced by Part 192, by not interrupting the protective current source to determine the adequacy of its cathodic protection under the 100mV polarization voltage shift criteria.

II. Areas of Concern / Recommendations/ Observations

1. SCG stated that the Coating Inspector is responsible for completing Coating Inspection Report (CIR). SCG also stated that the role of the inspector is to verify, observe or test, and document to a specific SCG Gas Standard and inspector may use their own tool to verify coating Dry Film Thickness (DFT) against the applicator's tool. One of the sections in the CIR is to record holiday inspection result(s).

SED believes Coating Inspector's role is very important for integrity of the gas pipeline. CFR Part 192 Section 192.461(c) also states:

> "*Each external protective coating must be inspected just prior to lowering the pipe into the ditch and backfilling, and any damage detrimental to effective corrosion control must be repaired*"

However, SCG does not specify any standards for Coating Inspector's qualification and/or did not provide Inspector's qualification records.

SED is concerned that Coating inspection could be performed by personnel who weren't qualified and/or did not have the necessary qualification to perform the job, unless a written qualification requirements is set and followed by SCG.

In addition, SED also noticed that SCG is inconsistent in the use of Coating Inspection Report (CIR) forms and data entries on the CIRs. The following are examples from SED's review on selected projects.

i. SCG revised its Coating Inspection Report form (Form 4005) and published on 02-11-2016. However, SED noted that SCG is still using old version form for the project # WOA 92404, dated 11/23/16, whereas SCG used its new version of the form for project WOA 90887, dated 9/23/2016.

ii. Coating Inspection Report for the project with WOA 90887, dated 9/23/2016, stated SCG's Gas Standard 186.0104; however, its Daily Inspection Report for same project for same day stated Gas Standard 186.0103.

2. During SED's field visit of pressure limiting station 6351 maintenance, SED observed that the intermediate piping experienced an upstream pressure of 283 psig (MAOP 400 psig) during the monitor regulator set point check.

Even though, SED requested the MAOP establishment records, which validates the intermediate piping qualification for the upstream pressure (MAOP 400 psig), SCG has not provided test records with complete information showing the intermediate pipe, so far.

Therefore, please provide a complete record that demonstrates the intermediate pipe is qualified for the upstream pressure or provide us with the necessary correction actions.

3. During SED's field visit of Valve maintenance, SED observed that the technician didn't check leakage on the equipment itself (CGI) he was using to check leaks, before performing a leak check on a pipe. Gas Standard 107.0287, section 4.4.1 requires to "Perform Sample Fault" to check leak on the equipment itself prior to the activity.

4. Valve maintenance field check observations:

i. During SED's field visit of Valve 26.81-1 on Line 225 maintenance, SED observed an open wooden vault, which allowed dirt to pile up within the vault.

ii. During SED's field visit of Valve 45-1001-5 and 45-1001-6 maintenances, SED observed that the electronic record (MDT) showed the valves in open position, whereas the valves were found in closed position.

5. Incorrect input in pressure limiting, relief valve, and pressure control valve maintenance forms:

i. During record review, SED observed that SCG uses pressure limiting station maintenance forms to record input for relief valve and pressure control valve maintenances. As a result, incorrect information's recorded that doesn't apply either for relief or pressure control valves. For example,

a. A 'Lock-Up" pressure value is recorded for relief valve, where that value is the relief valve's "Re-Seat" pressure.
Examples: - Stations 85-78.60S, 13.5, & GNN 38339

b. A "Lock-Up" pressure value is recorded for pressure control valve, where that value is the control valve's "Re-Open" or "Dead Bend" pressure.
Example: - Station 7053-8.25S

ii. During a review of the 2017 pressure limiting station maintenance records used in Bakersfield and Visalia districts, SED observed in majority of the records where the unit for "As-Found setting" recorded as "EA", which stands for "EACH", that needs to be corrected to "PSIG" in the future.