

PUBLIC UTILITIES COMMISSION

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June 12, 2019

GI-2019-01-SEM-40-03

Rodger Schwecke, Senior Vice President
Gas Transmission, Storage & Engineering
Southern California Gas Company
555 West 5th Street, GT21C3
Los Angeles, CA 90013

SUBJECT: Closure letter for General Order 112-F Comprehensive Gas Inspection of Southern California Gas Company's and San Diego Gas and Electric Company's Operation and Maintenance Procedures

Dear Mr. Schwecke:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission reviewed Southern California Gas Company's (SCG) Gas Standards and Procedures and San Diego Gas and Electric Company's (SDG&E) response letter dated April 18, 2019 that addressed two (2) violations and eight (8) recommendations identified during General Order 112-F inspection of SCG's and SDG&E's Operation and Maintenance Procedures conducted on January 7, 2019 to January 18, 2019.

Attached is a summary of SED's inspection findings, SCG's and SDG&E's responses to SED's findings, and SED's evaluation of SCG's and SDG&E's responses to the recommendations.

This letter serves as an official closure of the 2019 Comprehensive Inspection of SCG's and SDG&E's Operation & Maintenance Procedures and any matters that are being recommended for enforcement will be processed through the Commission's Citation Program or a formal proceeding.

Thank you for your cooperation in this inspection. If you have any questions, please contact Mahmoud (Steve) Intably, at (213) 576-7016 or by email: mai@cpuc.ca.gov.

Sincerely,

A handwritten signature in blue ink that reads "Dennis Lee".

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

cc: Troy Bauer, Sempra Energy Utilities
Ken Bruno, SED (Kenneth.bruno@cpuc.ca.gov)
Mahmoud Intably, SED (Mai@cpuc.ca.gov)
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Post-Inspection Written Preliminary Findings

Date of Transmittal: 03/12/2019

Dates of Inspection: January 7 through January 18, 2019

Operator: SOUTHERN CALIFORNIA GAS CO. & SAN DIEGO GAS AND ELECTRIC

Operator IDs: 18484 and 18112

Inspection Systems: Comprehensive Gas Inspection (Operation and Maintenance)

Assets (Unit IDs): 88389, 88388, 88390, and 88391

System Type: GT & GD

Inspection Name: 2019 Sempra's Procedures Transmission & Distribution

Lead Inspector: Mahmoud (Steve) Intably

Operator Representative: Khoa Le, Senior Pipeline Safety and Compliance Advisor

Unsatisfactory Results

Violations

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

1. Question Does the process adequately describe how to monitor CP that has been applied to pipelines?

References 192.605(b)(2) (192.465(a))

Assets Covered 88390, 88391 (SCG and SDG&E)

Issue Summary PHMSA Interpretation #PI-71-088

December 20, 1971 -Monitoring tests of "hot spot" protected sections of electrically continuous pipelines must be made each year.

- I. SCG's Gas Standard 186.0005 Cathodic Protection -Mixed Piping System, Section 5.4.3.7 Isolated Services tied to Non-CP mains states, "Each plastic service installed as a new installation or as a result of replacement on a non-cp main, shall have a hot spot 17# anode installed on the main near the service to main connection." SCG's Gas Standard did not require monitoring tests of "hot spot" "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. Therefore, SCG and SDG&E are in violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.465(a). See PHMSA

SCG's and SDG&E's Response:

SoCalGas understands the concern as the term “hot spot” generally implies active corrosion, however the term as used within Gas Standard 186.005 is intended to denote a voluntary action of opportunistically installing 17lb or 32lb anodes as an additional measure when unprotected steel pipe is exposed and accessible. As part of the corrective action, SoCalGas proposes to remove the term “hot spot” to avoid this implication.

Additionally, to protect and monitor a new steel segment of pipe it must be isolated. Since it is physically impossible to isolate these newly installed segments of steel pipe from the unprotected steel system as required by §192.467(a), SoCalGas considers these steel segments of the service installation as unprotected pipeline. Therefore, SoCalGas has managed these steel segments as unprotected pipe and subsequently monitors and evaluates the system through a three-year leak survey cycle in accordance with the requirements of §192.465(e) which is applicable to unprotected pipelines. In addition, as part of the Distribution Integrity Management Program, SoCalGas has developed a replacement program to address poor performing unprotected pipe through analysis leveraging the leak survey and its findings.

SoCalGas believes this approach is consistent with “Interpretations of corrosion control regulations, Date: March 22, 1983” (Interpretations 83-1, 83-2):

“Pipelines on which anodes have been voluntarily installed would, however, be subject to the 3-year re-evaluation requirements of §192.465(e) which by logical extension of the above reasoning, apply to pipelines that are not cathodically protected as required by Subpart I.

SDG&E does not operate any unprotected steel pipelines.

Corrective Actions:

Remove the term “hot spot” from Standard 186.0005. As stated above, the term “Hot Spot” as used in this section is not intended to imply active corrosion.

SED's Conclusion:

SED has reviewed SCG & SDG&E's response and determined it to be unacceptable. SED finds having a newly installed steel segment unmonitored for the Cathodic Protection does not comply with the Title 49 CFR, Part 192, Section 192.465(a). Therefore, the aforementioned violation by SCG and SDG&E remains.

- II. SCG's Gas Standard 184.0225 Leak Repair Methods for Distribution Steel Pipelines, Section 1.6 states, “Hot spot cathodic protection shall be applied to existing non-cathodically protected buried or submerged metallic gas piping whenever an external corrosion leak is repaired or external corrosion without leakage requires repair” and Section 4.5 Pipe Repair Clamp-Installation, Sub

Section 4.5.6 states, “When leakage is found on a main that is not cathodically protected, install hot spot cathodic protection using either a 17# or a 32# anode”. SCG's Gas Standard did not require monitoring tests of “hot spot” “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. Therefore, SCG and SDG&E are in violation of G.O. 112-F, Reference Title 49 CFR, Part 192 Section 192.465(a). See PHMSA Interpretation #PI-71-088 December 20, 1971.

SCG's and SDG&E's Response:

As discussed in the previous response, SoCalGas will modify the gas standard to appropriately reflect the terms and intended action. The cited gas standard is intended to provide guidance on the voluntary installation of a localized anode following the repair and mitigation of corrosion on an unprotected steel pipeline. As previously accepted in the San Joaquin Valley 2014 Audit SED Closure Letter (Dated July 8, 2016), SoCalGas places anodes in excavations following the repair and mitigation of a corrosion leak. Given the mitigation of the corrosion with the repair, the locations no longer have active corrosion, and thus SoCalGas is not creating a cathodic protection area that would require monitoring. The installation of anodes is strictly a voluntary action made by SoCalGas and does not require monitoring under Section 192.465(a).

The interpretation (#PI-71-088) referenced in the NOPV above states “when a bare distribution or transmission pipeline is **under full cathodic protection...**” SoCalGas does not find this interpretation applicable to the voluntary installation of anodes on unprotected steel pipe.

Corrective Actions:

SoCalGas will remove the term “hot spot cathodic protection” from section 1.6 of GS 184.0225. The remedial actions taken to repair the leakage have eliminated the active corrosion. Thus, the installation of an anode on a leak repair is a voluntary measure used to assist in reducing the risk of potential, future leakage.

SED's Conclusion:

SED has reviewed SCG & SDG&E's response and determined it to be unacceptable. SED finds having an active corrosion on pipeline without monitoring does not comply with the Title 49 CFR, Part 192, Section 192.465(a). Therefore, the aforementioned violation by SCG and SDG&E remains.

2. Question : What general requirements apply to pipelines regulated under this part?

References 192.13(c)

Assets Covered 88390, 88391 (SCG and SDG&E)

Issue Summary

SED noted that Gas Standard PP01.002 Management of Company operation standard, Section 1.1 states, " Five Years Life Cycle - The Time-Frame established by the Company by which all Company Operations Standards are periodically

reviewed for accuracy and compliance." SED found that the following Gas Standards missed their "Five Years Life Cycle" review:

- 223.0330 Main Centrifugal Gas Compressor Unit Maintenance
- 182.0130 Steel Service Design 61-1000 PSIG
- 182.0125 Steel Service Design - 60 PSIG or Less
- 166.0077 Confined Space Operations
- 223.0400 Gas Detectors in Compressor Station
- 182.0030 Aboveground Storage Tanks
- 186.06 Cathodic Protection - Electrical Isolation

Therefore, SCG and SDG&E are in violation of G.O. 112-F, Reference Title 49 CFR, Part 192, Section 192.13(c)

SCG's and SDG&E's Response:

- 223.0330 - had its 5-year-review done on 12/11/18, after the gas standards were loaded into the CPUC SharePoint (12/6/18) but before the O&M audit.
- 182.0130 - had its 5-year review done on 12/13/18, after the gas standards were loaded into the CPUC SharePoint (12/6/18) but before the O&M audit.
- 182.0125 - had its 5-year-review done on 12/13/18, after the gas standards were loaded into the CPUC SharePoint (12/6/18) but before the O&M audit.
- SoCalGas committed to having the remaining 4 gas standards complete their 5-year-reviews by 4/1/19.

Corrective Actions:

- SoCalGas committed to have the remaining 4 gas standards complete their 5-year-reviews by 4/1/19:
 - 166.0077 - 5-year-review was completed 3/11/19
 - 223.0400 - 5 year-review was completed 1/30/19
 - 182.0030 - gas standard canceled 2/25/19 (information previously consolidated into Environmental Fact Sheet FSoCalGas-S005)
 - 186.06 - 5-year review was completed 2/28/19

SED's Conclusion:

SED has reviewed SCG's and SDG&E's response and accepts the corrective actions that it has articulated and implemented. However, SED may review the records of the corrective action during future inspections.

Concerns

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

1. Question **As applicable to the project, does the process require that vaults and valve pits are designed in accordance with 192.183?**

References	192.143(a) (192.143(b), 192.183(a), 192.183(b), 192.183(c))
Assets Covered	88389, 88388 (SCG and SDG&E)

Issue Summary

SCG Gas Standard MSP 76-94 Vault, Prefabricated, Concrete, Section 4.1.1, states, “The vault and covers shall also meet the LACDPW S-601-2 requirements for concrete vaults and covers intended for use in pedestrian traffic areas”.

SCG Gas Standard MSP 76-94.2 Vault, Prefabricated, Non-Concrete, Section 4.1, states, “The vault body and cover shall meet Federal and State requirements and the requirements of the City of Los Angeles Department of Public Works and the latest edition of Standard Plan S-601-2”.

City of Los Angeles Department of Public Works, Standard Plan S-601-3, “Handholes, Maintenance Hole Covers and Frames, Detectable Warning Surface, Tree Well Covers, Pavers and Similar Installations”, revised on September 9, 2008, supersedes Standard Plan S-601-2.

SED recommends that SCG review/revise its Gas Standards MSP 76-94 and MSP 76-94.2 to reference the latest edition of Standard Plan S-601 which is S-601-3.

SCG's and SDG&E's Response:

Gas Standards MSP 76-94 and MSP 76-94.2 will be revised to change the revision of the referenced LACDPW standard plan S-601-2 to S-601-3.

Standard Plan S-601-3, Part 2, Section 1.2a, states in part, “a Citywide use approval pre-approves and pre-qualifies the material and products to be used at any location within the City.” Gas Standards MSP 76-94 and MSP 76-94.2 will be revised to specify the materials and products used as well as the conditions on the Citywide approval.

SED's Conclusion:

SED has reviewed SCG's and SDG&E's response and accepts the corrective actions that it has articulated and implemented. However, SED may review the records of the corrective action during future inspections.

2. Question **Generic Questions: Generic Questions (GENERIC.GENERIC)**

Assets Covered	88389, 88388 (SCG and SDG&E)
Issue Summary	

SED noted that Gas Standard 3222, *Design Data Sheet (DDS)*, Section 3.5.1 states, “The Approver must be a knowledgeable and trained engineer, capable of confirming the validity of the selection of all components listed on the DDS. See

Table 1 for typical Approvers for each organization”.

On November 14, 2018, National Transportation Safety Board released their Safety Recommendation Report, *Natural Gas Distribution System Project Development and Review (Urgent)*, regarding the Merrimack Valley incident on September 13, 2018. In its Engineering Work Package Approval Process section, the report states in part, “The seal of a PE should be required on all public utility engineering plans to reduce the likelihood of accidents...”. To NiSource, Inc., the corporation Columbia Gas was a subsidiary, NTSB made a safety recommendation stating, “revise the engineering plan and constructability review process [...] to ensure [...] accuracy, completeness, and correctness, and that the documents or plans be sealed by a professional engineer ... (P-18- 006)”. Following this recommendation, NiSource, Inc. stated in a response to NTSB on December 14, 2018 that they would comply with and follow NTSB's recommendation regarding sealing relevant construction documents with a professional engineer's seal.

Similar to the Commonwealth of Massachusetts' exemption in their state's licensing laws regarding PE approval for industrial, public utility, and other purposes, the State of California maintains exemptions regarding PE approval for industrial and utility work in the state. The California Business and Professions Code, Section 6704.(a), Defines who may use engineer titles, “In order to safeguard life, health, property, and public welfare, no person shall practice civil, electrical, or mechanical engineering unless appropriately licensed or specifically exempt from licensure under this chapter, and only persons licensed under this chapter shall be entitled to take and use the titles consulting engineer, professional engineer, or registered engineer...”. As a result of the incident, NTSB issued a safety recommendation in their Safety Recommendation Report to “eliminate the professional engineer licensure exemption for public utility work and require a professional engineer's seal on public utility engineering drawings. (P-18-005)”.

While the current text of the State of California's licensure law maintains the aforementioned exemption in the California Business and Profession Code, SED recommends that SCG consider the recent Merrimack Valley NTSB Safety Recommendation Report and its findings in augmenting and enhancing design safety oversight in SCG's future engineering planning.

SCG's and SDG&E's Response:

SoCalGas and SDG&E are continuing with the active evaluation and adoption of certain measures contained in the NTSB Safety Recommendation Report, *Natural Gas Distribution System Project Development Review (Urgent)*, dated November 14, 2018. Similarly, SoCalGas and SDG&E are working to incorporate significant elements of the ensuing AGA best practices document entitled, *Leading Practices to Reduce the Possibility of a Natural Gas Over-Pressurization Event*, dated November 26, 2018.

On the specific matter of Work Plan reviews: As referenced in our response from Mr. David Buczkowski to the SED's Mr. Steve Intably on this subject dated January 19, 2019, SoCalGas and SDG&E will formulate recommendations on work plan review processes by no later than July 1, 2019. Recommendations at that time

will include defining the scope of activity and documentation which SoCalGas and SDG&E believe may benefit from review and sign-off by a registered Professional Engineer (PE) or other employee held certifications/qualifications.

Regarding the SED observation on our Design Data Sheet review process: The determination of personnel who are qualified to sign off under this form instruction is established pursuant to specific and documented protocols: primarily based on a demonstrated understanding of Company requirements and successful completion of DDS Approver Training. The SoCalGas Pipeline Engineering Team has overall responsibility for verifying material selection and defining pressure testing parameters across the companies and is the primary team that approves all DDS's that have MAOPs greater than 20% Yield Pressure (YP). Some project teams such as PSEP Engineering, have been given the authority to approve DDS's up to 50% Yield Pressure (YP) that meet certain criteria defined by Pipeline Engineering based on supplemental training.

Our comprehensive pursuit of quality in engineering also includes knowledgeable pipeline engineering personnel to oversee and sample the PSEP-approved DDS's to verify an understanding of the policy in addition to providing PSEP more extensive training on approving high pressure designs. Approval of other high-pressure DDS's that are less than 20% YP has been granted to those individuals that have successfully met the training requirements, including the successful completion of a proficiency assessment.

Successful completion of DDS Approver Training requires demonstrating a solid understanding of Company pressure testing requirements, including the governing Company Gas Standards, the DDS Program and Form Instruction, and performing related engineering calculations. These assessments were developed by the Pipeline Engineering Team and led by a registered Professional Engineer. This training process has been shown to be highly effective. Only those personnel who successfully complete the proficiency assessments can approve these lower risk, less than 20% YP, pressure tests.

SoCalGas and SDG&E acknowledge that DDS approval is one of many processes that can be interpreted under the general category of work package and engineering/design plan developments. SoCalGas will be reaching out to meet directly with the SED to discuss its thoughts and other important considerations with respect to implementation of some of the recommendations from the Merrimack incident.

SED's Conclusion:

SED reviewed SCG and SDG&E's response and met with both Operators on April 25, 2019, at the Gas Tower. The exchange of ideas was productive, but the current position of both Operators falls short in the implementation of the NTSB's Safety Recommendation Report. SED expects both Operators to migrate toward full compliance with the NTSB's recommendations.

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

- 3. Question** Does the process include requirements for periodically reviewing the work done by operator personnel to determine the effectiveness, and adequacy of the processes used in normal operations and maintenance and modifying the processes when deficiencies are found?

References 192.605(a) (192.605(b)(8))
Assets 88390, 88391 (SCG and SDG&E)
Covered

- Issue I. SED noted that SDG&E failed to provide procedures to determine the effectiveness, and adequacy of the processes for activities other than leak survey when reviewing work for company and contractor personnel. SED recommends that SDG&E review/revise its Gas Standards to include a process for periodic review of the work done by company personnel and contractor.

SCG's and SDG&E's Response:

SoCalGas and SDG&E will move to address 192.605(b)(8) through the Operator Qualification (OQ) program and away from using the D8168 QA Leak Survey Audit and other Self Audit procedures to address this code section. The OQ program provides a better opportunity, while evaluating of employees performing work as part of the OQ evaluation, to also determine the effectiveness and adequacy of the process and procedures. During the evaluation, the evaluator and employee will address the effectiveness and adequacy of the processes and procedures used in normal operations and maintenance.

SED's Conclusion:

SED has reviewed SCG's and SDG&E's response and accepts the corrective actions that it has articulated and implemented. However, SED may review the records of the corrective action during future inspections.

- II. SED noted that Gas Standards 203.016 and D8168 are applicable to leak survey's quality assurance. Gas Standard 203.016, Section 4.2 has a minimum required amount of footage for the QA person to check while Gas Standard D8168 did not specify a minimum amount of footage for the OA person to check. SED recommends that SDG&E to review/revise its Gas Standard to clearly specify the minimum amount of footages for the QA person to check.

SCG's and SDG&E's Response:

As noted in 3.I. response above, SoCalGas and SDG&E will move to address 192.605(b)(8) through the Operator Qualification (OQ) program. SDG&E is currently in the process of evaluating target QA footages for D8168.

SED's Conclusion:

SED has reviewed SCG's and SDG&E's response and accepts the corrective actions that it has articulated and implemented. However, SED may review the records of the corrective action during future inspections.

- III. SED noted that Gas Standard 184.0200, Section 2.11 and Gas Standard G8123, Section 2.8 talks about periodically reviewing the performance of company or contractor employees based on certain criteria which were not clear to SED during this inspection. The minimum sampling rate nor the inspection frequency of their work was provided to SED. SED recommends that SCG and SDG&E to establish a minimum frequency to review an employee/contractor's performance.

SCG's and SDG&E's Response:

SoCalGas and SDG&E agree to address the meaning of "periodically" and clarify the process and documentation to include retention periods. The updates will also address how to notify the Operator Qualification (OQ) department if necessary.

SED's Conclusion:

SED has reviewed SCG's and SDG&E's response and accepts the corrective actions that it has articulated and implemented. However, SED may review the records of the corrective action during future inspections.

- 4. Question** Generic Questions: Generic Questions (GENERIC.GENERIC)
- | | |
|----------------|---|
| Assets Covered | 88390, 88391 (SCG and SDG&E) |
| Issue Summary | I. SED noted that the last page in some of the SCG's Gas Standards under "Document Profile Summary" had "Last Full Review Completed On" and "Last O&M Review Date" were not updated to reflect the actual date the Gas Standards reviewed. SED recommends SCG to review the Gas Standards and update the dates in "Document Profile Summary". |

SCG's and SDG&E's Response:

As stated above in Question #2, three of the gas standards where the Last Full Review Completed On dates were not updated had been loaded into the SharePoint application BEFORE the full reviews were complete later in December 2018. In addition, all of the Last O&M Review Dates were updated previously with the 2018 dates that they were reviewed for O&M codes.

SED's Conclusion:

SED has reviewed SCG's and SDG&E's response and accepts the corrective actions that it has articulated and implemented. However, SED may review the records of the corrective action during future inspections.

- II. SED noted that some of the SCG's Gas Standards had references to the previous General Order and did not reference the current General Order 112-F. SED recommends SCG to apply references to the current G.O. where

applicable.

SCG's and SDG&E's Response:

SoCalGas completed an effort to update all gas standards to reference the current General Order 112-F on 3/18/19.

SED's Conclusion:

SED has reviewed SCG's and SDG&E's response and accepts the corrective actions that it has articulated and implemented. However, SED may review the records of the corrective action during future inspections.

- III. SED noted that Gas Standards 184.0275 and T8172 are applicable to both the transmission and distribution groups but only T8172 references Maximo. SED recommends that SCG review/revise Gas Standard 184.0275 to reference Maximo.

SCG's and SDG&E's Response:

SoCalGas is in the process of reviewing/revising gas standard 184.0275 to reference Maximo. The revised gas standard will be published by 6/1/19.

SED's Conclusion:

SED has reviewed SCG's and SDG&E's response and accepts the corrective actions that it has articulated and implemented. However, SED may review the records of the corrective action during future inspections.