STATE OF CALIFORNIA GAVIN NEWSOM, *Governor*

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

GI-2019-10-SEM-40-08

March 24, 2020

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

SUBJECT: General Order 112 Closure Letter for the inspection of the Southern California Gas Company's and San Diego Gas and Electric Company's Gas Transmission Pipeline Integrity Management Program (TIMP) – ILI Focused

Dear Mr. Schwecke:

On behalf of the Safety and Enforcement Division (SED) of the California Public Utilities Commission, Paul Penney, Kai Cheung and James Zhang conducted a General Order 112 inspection of Southern California Gas Company and San Diego Gas and Electric Company Transmission Integrity Management Programs (TIMP) the weeks of October 7-11, 2019, October 14-18, 2019 and November 12-15, 2019. The inspection included a review of procedures and records related to the TIMP ILI program.

A summary of the inspection findings documented by SED, SDG&E and SoCal Gas response to our findings, and SED's evaluation of PG&E's response taken for each finding are outlined for each violation, concern and recommendation in this letter. Where indicated below, please provide a written response where GSRB has found SoCalGas/ SDG&E's response to be inadequate.

This letter serves as the official closure of the 2019 Inspection of SDG&E and SoCal Gas's TIMP –ILI Focused.

If you have any questions, please call Paul Penney at (415) 703-1817.

Sincerely,

Dennis Lee

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

cc: Terence Eng, GSRB
Claudia Almengor, GSRB
Khoa Le, SoCal Gas and SDG&E

Summary of Inspection Findings, SDG&E and SoCal Gas's Response, And GSRB's Evaluation of each Response

Violation and Concerns Identified from IA

1. Integrity Management : Quality Assurance (IM.QA)

Question Title, ID	Measuring Program Effectiveness , IM.QA.IMPERFEFECTIVE.P
Question Text	Does the process for measuring IM program effectiveness include the elements necessary to conduct a meaningful evaluation?
References	192.945(a) (192.913(b), 192.951)
Assets Covered	SoCalGas' Main Office Inspection - Transmission (88388 (40A))
Issue Summary	UNSAT

192.945(a) states "*General. An operator must include in its integrity management program methods to measure whether the program is effective in assessing and evaluating the integrity of each covered pipeline segment and in protecting the high consequence areas These measures must include the four overall performance measures specified in ASME/ANSI B31.8S (incorporated by reference, see §192.7 of this part), section 9.4, and the specific measures for each identified threat specified in ASME/ANSI B31.8S, Appendix A. An operator must submit the four overall performance measures as part of the annual report required by §191.17 of this subchapter*."

Southern California Gas Company and San Diego Gas and Electric Company meets the requirements for four overall performance metrics and nine threat specific performance metrics required under 192.945(a). However, as identified in the first sentence of 192.945(a), each operator must include measures to evaluate the integrity of each covered pipeline segment. Both the nine threat specific performance metrics and the four overall performance metrics are aggregate performance metrics and do not evaluate the integrity of each covered pipeline segment.

Southern California Gas Company and San Diego Gas and Electric Company has no performance metrics to evaluate the integrity of each covered pipeline segment in accordance with 192.945(a).

According to DR #37, Southern California Gas Company and San Diego Gas and Electric Company does not include any other performance metrics, which is required by code.

SDG&E and SoCal Gas's Response:

SoCalGas/SDG&E have implemented a prescriptive Integrity Management (IM) program that meets the requirements of 192.945(a) through the aggregation and analysis of the overall and threat-specific performance metrics specified in ASME/ANSI B31.8S. As reiterated in the PHMSA Advisory ADB–2014–05, "the[se] gas requirements invoke ASME B31.8S–2004, Managing System Integrity of Gas Pipelines. Section 9 of this standard provides guidance on the selection of performance measures." ASME/ANSI B31.8S directs operators to measure performance including all the threat-specific metrics in Nonmandatory Appendix A (Table 9) and the four program measurements specified in 9.4(b). As stated in the 2019 TIMP Audit DR#37, SoCalGas/SDG&E has incorporated PHMSA's approach to performance self-evaluations of covered segments.

SoCalGas/SDG&E agree that a TIMP performance evaluation process should continually evaluate opportunities to implement relevant performance metrics beyond those required by the Code of Federal Regulations (CFR) and actively practice this. SoCalGas/SDG&E will perform this evaluation during the 2020 calendar year.

GSRB's Conclusion:

This IA question and SoCalGas/ SDG&E's response will be further evaluated during 2020 TIMP audit scheduled for the last two weeks in April.

2. Assessment and Repair : In-Line Inspection (Smart Pigs) (AR.IL)

Question Title, ID	Qualification of Operator/Vendor Personnel (including Supervisors) Who Evaluate ILI Results , AR.IL.ILIREVIEWQUAL.P
Question Text	Does the process require that operator/vendor personnel (including supervisors) who review and evaluate ILI assessment results meet appropriate training, experience, and qualification criteria?
References	192.915(a) (192.915(b))
Assets Covered	SoCalGas' Main Office Inspection - Transmission (88388 (40A))
Issue Summary	CONCERN

In the ILI standard 167.0210, Rev 2.4, page 7, Southern California Gas Company and San Diego Gas and Electric Company summarizes the training requirements for each job category in Table 1. But in standard 167.0210, Rev 3, Southern California Gas Company and San Diego Gas and Electric Company does not have a table summarizing the training requirements for each job category.

GSRB staff **recommends** Southern California Gas Company and San Diego Gas and Electric Company include a table to summarize the training requirements and if the training is periodic including the TIMP101 training.

SDG&E and SoCal Gas's Response:

SoCalGas/SDG&E acknowledges the recommendation from the GSRB staff. The current in-line inspection gas standard for both utilities will be updated to include the minimum training qualifications for each job category.

GSRB's Conclusion:

SDG&E and SoCal Gas's response adequately addresses this concern.

Question Title, ID	Validation of ILI Results , AR.IL.ILIVALIDATE.P
Question Text	Does the process for validating ILI results ensure that accurate integrity assessment results are obtained?
References	192.921(a)(1) (192.937(c))
Assets Covered	SoCalGas' Main Office Inspection - Transmission (88388 (40A))
Issue Summary	CONCERN

For a level 2 validation (as defined in API 1163, Section 8), 167.0210, Section 9.4.2 says you need at least two digs to get to this level.

For a level 3, Southern California Gas Company and San Diego Gas and Electric Company does not have a hard and fast rule that defines the difference between the two levels of validation. GSRB staff advocates for a hard and fast rule to define the difference.

SDG&E and SoCal Gas's Response:

API 1163, In-line Inspection Systems Qualification, will be incorporated by reference into 49 CFR Part 192.493 as part of the new rulemaking changes initiated by PHMSA, which go into effect on July 1, 2020. SoCalGas/SDG&E will develop guidelines to differentiate between the 3 levels of validation identified in the standard. These requirements will be incorporated into the in-line inspections standards, for both utilities, by the time the new regulation goes into effect.

GSRB's Conclusion:

SDG&E and SoCal Gas's response adequately addresses this concern.

3. Integrity Mangement : Quality Assurance (IM.QA)

Question Title, ID	Invoking Non-Mandatory Statements in Standards , IM.QA.IMNONMANDT.P
Question Text	Does the process include requirements that non-mandatory requirements (e.g., "should" statements) from industry standards or other documents invoked by Subpart O (e.g., ASME B31.8S-2004 and NACE SP0502-2010) be addressed by an appropriate approach?
References	192.7(a)
Assets Covered	SoCalGas' Main Office Inspection - Transmission (88388 (40A))
Issue Summary	CONCERN

RECOMMENDATION: Add language to define "should" statements, which are consistent with this IA question and address FAQ 244. The language can be put in TIMP.1 or any other standard Southern California Gas Company and San Diego Gas and Electric Company deems appropriate.

SDG&E and SoCal Gas's Response:

SoCalGas/SDG&E currently address the requirements of PHMSA FAQ 244 and CFR section. PHMSA FAQ 244 begins by stating that "OPS expects operators to implement "should" statements in industry standards that are invoked by the rule." NACE SP0502, Pipeline External Corrosion Direct Assessment Methodology, is incorporated by reference in 49 CFR 192.7. SoCalGas/SDG&E have defined and incorporated all "should" statements in the recommended practice into the Definitions section of Gas Standards 167.0209/G8179, External Corrosion Direct Assessment Procedure.

GSRB's Conclusion:

SDG&E and SoCal Gas's response does not adequately address this recommendation. GSRB staff does not disagree with what SoCalGas/SDG&E said in its response as it relates to NACE SP0502 and Gas Standard 167.0209. However, the focus of the audit was In-Line-Inspection standards and records, not External Corrosion Direct Assessment Procedure (ECDA) procedures and records. A SoCalGas/ SDG&E engineer could reasonably interpret "should" statements as applying to the ECDA process only.

GSRB staff expects In-line Inspection standards used by SoCalGas/ SDG&E to define should statements to provide clarity to SoCalGas/ SDG&E engineering staff as applied to these standards. For example, the standard B31.8S-2004 is also referenced above in the IA question. Section 6.2 (Pipeline In-line Inspection) of this standard discusses ILI requirements; "should" statements are included in this section of the standard. As another example, the newly incorporated standard, API 1163 (Inline Inspection System Qualification) has should statements in it. GSRB staff believes that at least one (or more) SoCalGas/ SDG&E ILI standards should define "should" statements.

Please provide a response in writing indicating what SoCalGas/ SDG&E will do.

4. Time-Dependent Threats : Stress Corrosion Cracking (TD.SCC)

Question Title, ID	SCC on HCA Sections , TD.SCC.SCCIM.P
Question Text	Does the integrity management program have a process to identify and evaluate stress corrosion cracking threats to each covered pipeline segment?
References	192.911(c) (192.917(a)(1))
Assets Covered	SoCalGas' Main Office Inspection - Transmission (88388 (40A))
Issue Summary	CONCERN

The screening criteria identified in ASME B31.8S-2004, Appendix A3, for the High pH Stress Corrosion Cracking (SCC) threat is not absolute. These criteria do not account for approximately 25-35% of historical SCC failures. As noted in the National Association of Corrosion Engineers (NACE) RP0204-2004 (Stress Corrosion Cracking Direct Assessment

Methodology), Section 1.2.1, ***"…It is recognized that these screening factors will identify a substantial portion of the susceptible locations, but not all of them."***

CONCERN: SEMPRA has two pipelines where the screening criteria in B31.8S-2004 are almost met. These pipelines are Line 225 and Line 2001 East. GSRB staff advocates two things:

1. Include a footnote in your threat identification procedure (167.0203) to alert engineers of the fact that the screening criteria do not account for approximately 25-35% of SCC failures.

2. Do an integrity assessment for SCC on the two pipelines identified above.

SDG&E and SoCal Gas's Response:

SoCalGas/SDG&E conducts identification of threats of each covered segment in accordance with 192.911(c), 192.917(a)(1) and ASME/ANSI B31.8S-2004 (incorporated by reference). Specific to the Stress Corrosion Cracking (SCC) threat, ASME/ANSI B31.8S-2004 Appendix A3.3 lists the criteria to consider:

(a) operating stress > 60% SMYS
(b) operating temperature > 100°F
(c) distance from compressor station ≤ 20 miles
(d) age ≥ 10 years
(e) all corrosion coating systems other than fusion-bonded epoxy (FBE)

SoCalGas/SDG&E considers these criteria in accordance with ASME/ANSI B31.8S-2004 Appendix A3.3. The NACE RP0204-2004 Stress Corrosion Cracking Direct Assessment Methodology document acknowledges ASME B318S as the primary guidance document for SCC threat evaluation, and further the NACE document clarifies that its function is to serve as guidance for SCC assessment in situations where 1) the threat has been both identified as a risk for significant SCC, and 2) where SCCDA is identified an appropriate approach. As such, the NACE document is not incorporated by reference in 49 CFR Part 192 or included as amplifying threat identification criteria.

The preceding discussion aside, neither ASME or NACE preclude the use of additional actions to enhance the threat management process, and as a proactive measure, SoCalGas/SDG&E have also implemented additional NDE actions (magnetic particle inspections) at every TIMP related direct examination site (regardless of the SCC threat identification criteria) to enhance the data collection utilized as part of the threat identification process. This supplemental inspection of the pipe condition is valid for all forms of surface cracking including those not explicitly identified in any threat criteria. Thus far, SCC has not been detected at any direct examination site. This measure (which is above and beyond code requirements and includes pipeline segments that do not meet above SCC criteria) serves to provide an additional measure of detection for risk factors related to significant SCC.

The threat identification process is applied across all covered pipe segments (in accordance with the regulations) in order to ultimately assign the appropriate assessment methods to each covered segment in a consistent manner. Neither L225 nor L2001 East have a history of failure due to SCC. They do not have any indications of SCC detected through direct examination and do not satisfy the programmatically consistent threat identification criteria for an active SCC threat identified by the process described above. Therefore, a SCC assessment for those pipelines is not required or necessarily appropriate at this time.

GSRB's Conclusion:

GSRB staff agrees that B31.8S-2004 is the primary document used for filtering covered segments for the threat of High PH SCC and is incorporated into Part 192 by reference. The quote above from (NACE) RP0204-2004, Section 1.2.1 concludes that these filtering criteria will identify "…***a substantial portion of the susceptible locations, but not all of them."***

SoCalGas/ SDG&E's discussion in the second paragraph above is not relevant to the fact that the B31.8S-2004, Appendix A3 filtering criteria will not identify all locations that will are susceptible to high PH SCC. What is relevant is SoCalGas/ SDG&E's use of data from magnetic particle inspections at all locations as discussed in paragraph three. GSRB staff finds this to be a laudable procedure that will help identify locations that may or may not be within the filtering criteria in B31.8S-2004, Appendix A3.

The point GSRB staff was making was specific locations along SoCalGas/SDG&E's pipeline system where filtering criteria are close to that in B31.8S-2004, Appendix A.3 but do not meet the filtering criteria (i.e., a pipeline operating at 59.9% of SMYS instead of >60% of SMYS) are potentially susceptible to high PH SCC. Certainly, extra data from direct examinations will add to the risk analysis, especially if the direct examinations show no indication of SCC, but the data does not exclude the possibility of SCC occurring somewhere within the potentially affected area (i.e., within the 20 miles downstream of the compressor station).

SoCalGas/ SDG&E is correct that an SCC assessment is not required. As such, SoCalGas/ SDG&E's response adequately addresses these two recommendations.