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May 6, 2022

Mr. Terence Eng, P.E.
Program Manager, Gas Safety and Reliability Branch
Safety and Enforcement Division
California Public Utilities Commission
505 Van Ness Ave, 2nd Floor
San Francisco, CA 94102

Dear Mr. Eng:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a **General Order (G.O.) 112-F comprehensive and full review inspections of Southern California Gas Company (SoCalGas)'s Operation & Maintenance Procedures and Emergency Plan (OME Procedures Inspection)** on January 10 through 14, 2022. SED staff reviewed SoCalGas' written OME procedures pursuant to G.O. 112-F, Reference Title 49, Code of Federal Regulations (CFR), Parts 191 & 192, and used the Pipeline and Hazardous Materials Safety Administration's (PHMSA) Inspection Assistance (IA) as a reference guide to conduct this inspection.

SED staff identified eight (8) areas of concern. Attached are SoCalGas' written responses.

Please contact Alex Hughes at (949) 697-2539 if you have any questions or need additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read "Alex Hughes", written over a light blue grid background.

Alex Hughes
Pipeline Safety and Compliance Manager

CC:

Sann Naing, SED/GSRB
Gwen Marelli, SoCalGas
Kan Wai Tong, SED/GSRB
Claudia Almengor, SED/GSRB
Matthewson Epuna, SED/GSRB

2022 SoCalGas Operations and Maintenance Audit
1/10/2022 to 1/21/2022

Concern(s)

1. Design and Construction: Construction Welding Procedures (DC.WELDPROCEDURE)

Question Title, ID: Welding Procedures, DC.WELDPROCEDURE.WELD.P

Question: 1. Does the operator have written specifications requiring qualified welding procedures in accordance with 192.225?

References: 192.225

Assets Covered: SoCalGas' Main Office Inspection - Transmission (88388 (40A))

Issue Summary: SoCalGas Gas Standard (GS) 187.0055 -General Welding Requirements requires welding on its pipeline to be done by qualified welders using welding procedure specifications (WPS) qualified by SoCalGas. However, Section 1.2 of the standard states "API 1104 is typically used to qualify welders and welding procedures for pipeline applications where there is a low exposure to cycling or thermal stresses." On January 13, 2022, SED held a meeting with SoCalGas' process owner for this GS, and learned that while the verbiage was accurate, SoCalGas' welding procedure specifications are qualified by API 1104 as a rule. SED recommends SoCalGas to strengthen the language in the GS 187.0055 to cite its usage of API 1104 or any other industry standard approved by 49 CFR Part 192 for qualifying the welders and welding procedures.

On February 8, 2022, SoCalGas provided additional information via an email that stated the GS 187.0055 is currently undergoing extensive revisions and will review SED recommendations. SED requests SoCalGas to elaborate upon its corrective action(s) and outline the key points of its revisions if the updated version has not published.

SoCalGas Response:

SoCalGas GS 187.0055 Section 1.2 states that API 1104 procedures are “*typically*” used. CFR Part 192.225 allows for the use of procedures qualified under API 1104. Most of the time, SoCalGas utilizes procedures under API 1104. However, it also uses procedures qualified under ASME Section IX (procedures for mechanized orbital welding). Welding procedures are qualified in accordance with API 1104 or ASME Section IX, as applicable, by destructive testing (tensile tests, nick breaks, and bend tests).

SoCalGas Corrective Action:

The gas standard is undergoing revisions and will be published by October 1st, 2022. Revisions will be made to provide clarification of welding instructions for field personnel, as well as inspection language in accordance with new company standard requirements. A sentence will be added in Section 1.2 to indicate that the only allowable ASME procedures are the mechanized welding procedures mentioned above.

2. Design and Construction: Design of Pipe (DC.DP)

Question Title, ID: Steel Pipe Design Factor, DC.DP.PIPEDESFACTOR.P

Question: 7. Does the operator have written procedures for determining the Design Factor to be used for steel pipe as required by 192.111?

References: 192.111 (192.103, 192.105, 192.107, 192.109, 192.112, 192.115, 192.121, 192.123, 192.125, 192.303, 192.305, 192.307)

Assets Covered: SoCalGas' Main Office Inspection - Transmission (88388 (40A))

Issue Summary: Per review of SoCalGas GS 182.0200 – Design Factors for Steel Piping Systems, SED identified a table within Section 4.2 of the standard (Table 1), which had duplicate lines for "uncased crossing of railroad right of way". The first line referring to this scenario, second in order from the top, had unadjusted design factor values for Class 1 and 2 locations ("0.72", "0.60"). The second line with the correct values can be found on the seventh row (second from the bottom). SoCalGas stated the table values will be revised by removing the first entry.

During SED's follow-up correspondence with the SoCalGas' Pipeline Safety Compliance team, SoCalGas determined that the duplicate line had been present since 1998 which was when the first Document Library version of the Gas Standard was uploaded digitally. Further review found the duplicate line had been present in GS 182.0200 since 1992. The current Document Library in use was created in 1998. While this error is present in the current GS, SoCalGas stated that the DDS Manager planning tool references the correct derating values during pipe design and construction activities and provided supporting evidence. According to SoCalGas, this tool was implemented in the mid-1990s. In addition to the DDS Manager, SoCalGas also stated that Gas Engineering currently reviews and approves pipeline installations for Part 192 compliance.

SoCalGas completed its revision and removed the erroneous derating factor as of February 2, 2022.

SED accepts SoCalGas' proposed corrective actions. However, SED recommends notifying SoCalGas' Integrity Management and other appropriate work groups the possible impact on uncased Class 1 and 2 pipeline crossings with railroad right of way due to this erroneous derating factor in the previous versions of this gas standard. In addition, SED may revisit this matter in subsequent inspections.

SoCalGas Response:

The gas standard (GS 182.0200) was revised to remove the row with the editorial error. The editorial revision was completed on February 2nd, 2022. As previously stated, the gas standard still contained the correct design factors for "*Uncased crossing of railroad right-of-way*" despite this editorial error. This minor error would not have impacted the design and

installation of uncased pipeline railroad crossings in Class 1 and 2 locations.

As recommended by SED, Integrity Management has been notified of this editorial error.

Multiple business controls were in place to verify that the proper design factors were being used prior to, and during, the period that this editorial error existed. These include the following design policies and procedures:

1. Design Data Sheet Manager

The Design Data Sheet (DDS) Manager software program was used since the mid-1990s as a planning tool for pressure tests of pipeline installations to verify Part 192 code compliance and would have identified proper application of the Design Factors for crossings. The program contains information from relevant gas standards, including GS 182.0200, to assist in the planning of pipeline projects. The program automatically assigns the correct design factors from SCG 182.0200 when an uncased pipeline crossing installation in a railroad right-of-way is selected for a specific Class Location.

2. Engineering review and approval of Design Data Sheets for projects

Pipeline Engineering reviews and approves railroad crossing designs prior to the project going into construction. This review includes verifying that the design pressure of the components considering Class Location meets the DL/MAOP of the pipeline system. As shown in the Company Form Instruction 3222 from 1975, this review and approval practice has been in place for over 46 years.

3. Loading evaluations with PC-Pisces

Piping projects that cross a railroad require a review by Pipeline Engineering. The review includes verifying that the proposed depth of cover for the pipeline is sufficient for the anticipated railroad loading. SoCalGas has utilized the PC-Pisces program, which was created prior to 1992 and evaluates the railroad loading over a pipeline, to confirm the combined loading from the railroad, soil, and internal pressure are within the allowable stress limits.

Based on the above assessments, the railroad crossings should not have presented any safety concerns due to this previous editorial error in the Gas Standards.

SoCalGas Corrective Action:

As noted above the gas standard (GS 182.0200) was revised to remove the row with the editorial error. The editorial revision was completed on February 2nd, 2022.

3. Emergency Preparedness and Response: Emergency Response (EP.ERG)

1. Question Title, ID: Emergency Plan Review, EP.ERG.REVIEW.P

Question: 1. Does the process include a requirement to review the manual at intervals not exceeding 15 months, but at least once each calendar year?

References: 192.605(a)

Assets Covered: SoCalGas' Main Office Inspection - Transmission (88388 (40A))

Issue Summary: Title 49 CFR Part 192, §192.605(a) states in part:

“General. Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. For transmission lines, the manual must also include procedures for handling abnormal operations. This manual must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least once each calendar year....”

SoCalGas' Emergency Management Preparedness and Response Policy (ER-1), Section 5.1.1 Operation Emergency Manuals states in part:

“... Applicable OEM standards are reviewed each calendar year as part of the Operations and Maintenance plan review. ...”

SED recommends SoCalGas revise this section to be consistent with the language stated in the regulation including *“at intervals not exceeding 15 months, but at least once each calendar year”* to avoid potential misleading and misunderstanding, and to be precise with code language.

On February 8, 2022, SoCalGas, provided additional information via an email, stating that it has republished the ER-1 to include *“at intervals not exceeding 15 months, but at least once each calendar year”* and provided the revised version. SED has reviewed SoCalGas' response and accepts the corrective action that it has articulated and implemented.

SoCalGas' Emergency Management Preparedness and Response Policy (ER-1), Section 5.1.1 states in part:

“...Each Region maintains an OEM which includes standards that have been identified as essential to sustaining operations and maintenance during an emergency.....

Applicable OEM standards are reviewed each calendar year as part of the Operations and Maintenance plan review. ...”

SED randomly reviewed some of the Operation Emergency Manuals (OEM) (for example OEM 01.010-I – Emergency Incidents/Local Instructions) and found that no review date was recorded in the document profile summary box of the document. In addition, SoCalGas said that it currently does not have a system to keep track of review of OEMs. SED recommends SoCalGas to have a system to keep track of reviews of its OEMs.

On February 8, 2022, SoCalGas, provided additional information via an email, which stated that it is currently undergoing a document library update and has provided project requirements for future implementation of SED's recommendation. SED requests SoCalGas to elaborate upon its corrective action(s) and outline the key points of its revisions if the updated version has not been published.

SoCalGas Response:

SoCalGas appreciates SED's suggestion and commits to adding a new metadata field entitled "Last OEM Review Date", for OEM documents, which will store the annual date that the OEM document was last reviewed.

SoCalGas Corrective Action:

This addition will be activated in the NEW Document Library system early 2023, after the Q4 2022 launch, when production enhancements can be implemented.

2. Question Title, ID: Emergency Response, EP.ERG.READINESS.P

Question: 9. Does the process include procedures for ensuring the availability of personnel, equipment, tools, and materials as needed at the scene of an emergency?

References: 192.615(a) (192.615(a)(4))

Assets Covered: SoCalGas' Main Office Inspection - Transmission (88388 (40A))

Issue Summary: Title 49 CFR Part 192, §192.615 Emergency plans states in part:

“(a) Each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:

(1)...(4) The availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency.”

SoCalGas stated that its Gas Standard (GS) 183.0130 - Materials and Supplies for Emergency Situations addresses the availability of equipment and tools during emergency response as well.

SED reviewed SoCalGas' GS 183.0130 and Operation Emergency Manual (OEM) document 06.050-COM - Emergency Materials - Pico Rivera. SED noticed that the standards mostly address materials and supplies but did not explicitly address procedures for availability of tools. SED recommends SoCalGas to review its standards that address §192.615(a)(4) and revise them to address the items in the language as prescribed in the code.

SoCalGas Response:

To meet the code section requirements, SoCalGas currently has emergency tools and equipment specifically ready for emergency response.

SoCalGas Corrective Action:

SoCalGas will add the wording to GS 183.013 to specifically state “*Tools and emergency equipment*”. This update will be sent for publishing by 6/01/2022.

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

Question Title, ID: Normal Operations and Maintenance Procedures,
MO.GOMAOP.MAOPLIMIT.P

Question: 2. Does the process include requirements for starting up and shutting down any part of the pipeline in a manner to assure operation with the MAOP limits, plus the build-up allowed for operation of pressure-limiting and control devices?

References: 192.605(a) (192.605(b)(5))

Assets Covered: SoCalGas' Main Office Inspection - Transmission (88388 (40A))

Issue Summary: SoCalGas Gas Standard (GS) 223.0145 - Planning Shutdowns for Transmission and Storage lists the Title 49 CFR Part 192, §192.605(b)(5) to be the code that impacted the standard (i.e. the standard satisfies this code section).

§192.605 Procedural manual for operations, maintenance, and emergencies states in part:

“... (b) Maintenance and normal operations. The manual required by paragraph (a) of this section must include procedures for the following, if applicable, to provide safety during maintenance and operations.

(1)....(5) Starting up and shutting down any part of the pipeline in a manner designed to assure operation within the MAOP limits prescribed by this part, plus the build-up allowed for operation of pressure-limiting and control devices.”

GS 223.0145 does not explicitly mention MAOP limits as prescribed by code even though the standard implies the safe shutting down operations for completion. SoCalGas should amend this procedure to include the language prescribed by this code to explicitly state that during starting up and shutting down, the pressure of the pipeline must stay within the MAOP limits, plus the build-up allowed for operation of pressure-limiting and control devices if it does not reference any other procedures within its

Operations and Maintenance Plan (O&M Plan) that meet these code section requirements.

On February 8, 2022, SoCalGas, provided additional information via an email, which stated that GS 223.0145 will be revised and republished on May 1, 2022. SED requests SoCalGas to elaborate upon its corrective action(s) and outline the key points of its revisions if the updated version has not been published.

SoCalGas Response:

To meet code section requirements, SoCalGas will amend GS 223.0145 to explicitly state that during start up and shut down operations the pressure of the pipeline must stay within MAOP limits, plus the build-up allowed for operation of pressure-limiting and control devices.

SoCalGas Corrective Action:

SoCalGas updated sections 4.2.4 and 4.2.5 (see language below) of GS 223.0145 to incorporate the pipeline startup and shutdown requirements from Title 49 CFR Part 192, §192.605(b)(5). This update was published on May 5th, 2022 in accordance with SoCalGas publishing requirements.

The update is as follows:

“Procedure for starting up or shutdown of any part of the pipeline in a manner to assure operation within the MAOP limits plus the build-up allowed for operation of pressure-limiting and control devices.”

5. Assessment and Repair: Repair Criteria (O and M) (AR.RCOM) & Time-Dependent Threats: Internal Corrosion - Preventive Measures (TD.ICP)

Question Title, ID: Repair of Corroded Pipe, AR.RCOM.REPAIR.P (also presented in: TD.ICP)

Question: 1. Does the process give sufficient guidance for personnel to repair or replace pipe that has corroded to an extent that there is no longer sufficient remaining strength in the pipe wall?

References: 192.605(b)(2) (192.487(a), 192.487(b), 192.489(a), 192.489(b), 192.491(c))

Assets Covered: SoCalGas' Main Office Inspection - Distribution (88391 (40B))

Issue Summary: SoCalGas' Gas Standard (GS) 182.0050 - Predicted Failure Pressure Analysis for Corrosion Metal Loss, Section 1.6 states, "distribution pipe ... where uniform corrosion or closely grouped corrosion pitting results in large areas of pipe where the remaining wall thickness is less than 30% nominal wall, should be repaired or replaced". Section 3.9 defines "should" as "a recommendation that is desirable to follow whenever possible. Deviating from the recommendation does not require documentation or approval." and Section 3.8 defines "shall" as "a

requirement that must be followed or its exception must be approved and documented in accordance with Section 5 of this standard."

§192.487 states in part:

"...distribution line pipe with a remaining wall thickness less than that required for the MAOP of the pipeline, or a remaining wall thickness less than 30 percent of the nominal wall thickness, must be replaced. However, corroded pipe may be repaired by a method that reliable engineering tests and analyses show can permanently restore the serviceability of the pipe."

SED interprets the verbiage GS 182.0050, particularly between "should" and "shall", to be less stringent than Part 192 requirements.

On January 21 and February 8, 2022, SoCalGas, provided additional information via emails, which stated that GS 182.0050 is not applicable for distribution pipelines with a remaining wall thickness less than 30% of the nominal wall and that Section 1.6 will be revised. SoCalGas also stated that the reader will be directed to GS 186.02 – Inspection of Exposed Pipe for remediation guidance.

SED has reviewed SoCalGas GS 186.02 Section 4.3.1.5.1 which states: "Replace each segment of generally corroded pipe when the depth of the corrosion 70% or more of the nominal wall thickness. See GS G8146, *Replacement Criteria for Distribution Mains and Services*."

SED accepts SoCalGas' corrective plan that it has articulated. However, SED may review the records of the corrective action during future inspections.

SoCalGas Response: No Response Required.

SoCalGas Corrective Action: No Response Required.

6. Design and Construction: Construction Welding Procedures (DC. WELD PROCEDURE)

Question Title, ID: Welding Procedures, DC. WELD PROCEDURE.WELD.P

Question: 1. Does the process require welding to be performed by qualified welders using qualified welding procedures and are welding procedures and qualifying tests required to be recorded in detail?

References: 192.225(a) (192.225(b))

Assets Covered: SoCalGas' Main Office Inspection - Distribution (88391 (40B))

Issue Summary: SoCalGas GS 187.0055 - General Welding Requirements requires welding on its pipeline to be done by qualified welders using welding procedure specifications (WPS) qualified by SoCalGas. However, Section 1.2 of the standard states "API 1104 is typically used to qualify welders and welding procedures for pipeline applications where there is a low exposure to cycling or thermal stresses." On January 13, 2022, SED held a meeting with SoCalGas' process owner this GS, and learned that while the verbiage was accurate, SoCalGas' welding procedure specifications are qualified by API 1104 as a rule. SED thus recommends SoCalGas to strengthen the language in GS 187.0055 to precisely cite its usage of API 1104 or any other industry standard approved by 49 CFR Part 192 for qualifying the welders and welding procedures.

On February 8, 2022, SoCalGas, provided additional information via an email that stated the GS 187.0055 is currently undergoing extensive revisions and will review SED recommendations. SED requests SoCalGas to elaborate upon its corrective action(s) and outline the key points of its revisions if the updated version has not published.

SoCalGas Response:

SoCalGas GS 187.0055 Section 1.2 states that API 1104 procedures are “*typically*” used. CFR Part 192.225 allows for the use of procedures qualified under API 1104. Most of the time, SoCalGas utilizes procedures under API 1104. However, it also uses procedures qualified under ASME Section IX (procedures for mechanized orbital welding). Welding procedures are qualified in accordance with API 1104 or ASME Section IX, as applicable, by destructive testing (tensile tests, nick breaks, and bend tests).

SoCalGas Corrective Action:

The gas standard is undergoing revisions and will be published by October 1st, 2022. Revisions will be made to provide clarification of welding instructions for field personnel, as well as inspection language in accordance with new company standard requirements. A sentence will be added in Section 1.2 to indicate that the only allowable ASME procedures are the mechanized welding procedures mentioned above.

7. Emergency Preparedness and Response: Emergency Response (EP.ERG)

Question Title, ID: Emergency Response, EP.ERG.READINESS.P

Question: 4. Does the process include procedures for ensuring the availability of personnel, equipment, tools, and materials as needed at the scene of an emergency?

References: 192.615(a) (192.615(a)(4))

Assets Covered: SoCalGas' Main Office Inspection - Distribution (88391 (40B))

Issue Summary: Title 49 CFR Part 192, §192.615 Emergency plans states in part:

“(a) Each operator shall establish written procedures to minimize the hazard resulting from a gas pipeline emergency. At a minimum, the procedures must provide for the following:

“ ... (4) The availability of personnel, equipment, tools, and materials, as needed at the scene of an emergency.”

SoCalGas stated that its GS 183.0130 - Materials and Supplies for Emergency Situations addresses the availability of equipment and tools during emergency response as well.

SED reviewed SoCalGas’ Gas Standard 183.0130 and Operation Emergency Manual (OEM) document 06.050-COM - Emergency Materials - Pico Rivera. SED noticed that the standards addressed materials and supplies but did not explicitly address procedures for availability of tools. SED recommends SoCalGas to review its standards that addressed §192.615(a)(4) and revise them to address the items in the language as prescribed in the code.

SoCalGas Response:

To meet the code section requirements, SoCalGas Company currently has emergency tools and equipment specifically ready for emergency response.

SoCalGas Corrective Action:

SoCalGas will add the wording to GS 183.013 to specifically state *“Tools and emergency equipment”*. This update will be sent for publishing by 6/01/2022.