

PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE
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December 28, 2020

GI-2020-09-SWG-30-09

Jerry Schmitz
Vice President, Engineering
Southwest Gas Corporation
5241 Spring Mountain Road
Las Vegas, NV 89193-8510

SUBJECT: Closure letter for General Order (GO) 112-F Gas Inspection of Southwest Gas Company's Distribution Integrity Management Program (DIMP)

Dear Mr. Schmitz,

The Safety and Enforcement Division (SED) of the California Public Utilities Commission has reviewed response of Southwest Gas Company (SWG) for the findings identified during the General Order (GO) 112-F inspection of its Distribution Integrity Management Program (DIMP). The Inspection was conducted between September 21-25 and September 28 – October 2, 2020.

Included is SED's evaluation of SWG's response for identified Areas of Concern/Recommendations.

This letter serves as the official closure of the 2020 GO 112-F Inspection of SWG's Distribution Integrity Management Program.

Thank you for your cooperation in this inspection. If you have any questions, please contact Sikandar Khatri at (415) 703-2565 or by email at Sikandar.Khatri@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

Enclosure: Summary of Inspection Findings

cc:

Laurie Brown, Southwest Gas Company
Terence Eng, SED

Summary of Inspection Findings

Dates of Inspection: September 21-25 and September 28 – October 2, 2020

Operator: SOUTHWEST GAS CORP

Operator ID: 18536 (primary)

Inspection Systems: Distribution Integrity Management Program (DIMP)

Assets (Unit IDs): Main Office (Specialized Inspections) (88373)

System Type: GD

Inspection Name: Southwest Gas DIMP 2020

Lead Inspector: Sikandar Khatri

Operator Representative: Laurie Brown

Unsatisfactory Results

No Preliminary Findings.

Concerns

Gas Distribution Integrity Management : Knowledge of the System (GDIM.KN)

- (1) Question Does the plan list the additional information needed to fill gaps due to missing, inaccurate, Text or incomplete records?

References 192.1007(a)(3)

Assets Covered Main Office (Specialized Inspections) (88373 (30))

Issue Summary Title 49 Code of Federal Regulation, §192.1007(a)(3) States:

"Identify additional information needed and provide a plan for gaining that information over time through normal activities conducted on the pipeline (for example, design, construction, operations or maintenance activities)."

DIMP Manual, section 5.1.3.2, talks about additional data and its collection, for example using UOCMU (Unusual Operating Conditions Mapping Update) process. This section also outlines some missing/inaccurate information examples, and demonstrations of some examples were made during WebEx sessions. It was discussed and pointed out that, for example, in Mechanical Fitting Failure Forms of 2019, there was missing information about the manufacturer and model. Additionally, there may be older pipeline segments that do

not have mechanisms to mitigate earthquakes, and collecting such information, when there is an opportunity, is vital. Similar gaps may exist in other parts of the system.

Therefore, Southwest Gas (SWG) should keep missing/inaccurate information list updated as gaps are identified and fill these gaps through normal operation and maintenance process, and additionally use other information sources such as purchase orders, knowledge of field personnel and other appropriate means, as necessary.

SWG's Response:

Southwest Gas appreciates SED's concern and will evaluate plans to list gaps in system knowledge to cover more of the typical instances where gaps are known in the system. An example of this type of gap includes natural gas systems acquired by Southwest Gas. In some instances, these acquired systems do not have documentation that reflects the pipe materials installed in the ground. Facilities mapped as plastic from the acquired system operator's records are discovered to be steel or vice versa. These discrepancies in material type are corrected as discovered through the Company's Unusual Operating Condition Mapping Update (UOCMU) process. Updates to the gap list as a result of the review will be published in the July 31, 2021 Operations Manual release.

SED's Conclusion:

SED has reviewed the response and appreciates SWG's proactive approach of keeping updated the list of missing/inaccurate information and fill the gaps as information becomes available.

Gas Distribution Integrity Management : Identify Threats (GDIM.TH)

- (2) Question In identifying threats, do the procedures include consideration of all of the required threat Text categories to each gas distribution pipeline?

References 192.1007(b)

Assets Covered Main Office (Specialized Inspections) (88373 (30))

Issue Summary Title 49 Code of Federal Regulations, §192.1007(b) states:

"An operator must consider reasonably available information to identify existing and potential threats. Sources of data may include, but are not limited to, incident and leak history, corrosion control records, continuing surveillance records, patrolling records, maintenance history, and excavation damage experience."

The Section 6.1. Threat Categories of SWG DIMP Plan, identifies the threat categories that include: Corrosion Failure; Natural Force Damage; Excavation Damage; Other Outside Force Damage; Pipe, Weld, or Joint Failure; Equipment Failure; Incorrect Operation; and Other Cause. The section 7.2.1 states that the 'riser leaks' are not to be included in "Leak Evaluation" process for DIMP Analysis. Additionally, SWG does not do in-depth analysis of the leaks falling under "Other Cause". Therefore, SWG should:

(1) Analyze "riser leaks" at an appropriate time interval set by SWG to determine the causes of failure which may result in useful insight regarding the integrity of this pipeline component. This time interval should be defined in the DIMP plan.

(2) Analyze the leaks falling into "Other Cause" category to determine whether these could be categorized under other well-defined categories. This will also be helpful for the training of staff which SWG mentioned is provided to staff for better understanding of the leak causes.

SWG's Response:

(1) Southwest Gas acknowledges SED's recommendation regarding the evaluation of leaks on risers and further clarifies that the Company's Plan already includes a process to evaluate these types of facilities. For clarity, the Pipeline Risk Evaluation referenced in the

Company's DIMP Plan section 7.2.1 is specific to the Pipeline Risk Assessment process and is not the only leak analysis undertaken by Southwest Gas.

The Pipeline Risk Evaluation process outlined in section 7.2.1 is intended for leaks that pose an integrity risk to the underground piping system, requiring replacement of the system. As such, only leaks that are on the underground piping are considered in the Pipeline Risk Evaluation. The Company does not include riser leaks for the Pipeline Risk Evaluation process as a leak on the riser will not warrant replacement of the adjoining underground piping system.

Riser leaks are repaired, or the riser is replaced, when found, eliminating the leak and the risk. Riser leaks and all other leaks are reviewed annually through the Company's Leak Analysis review (referenced in sections 8.1.5 and 9.1.2 of the DIMP Plan), which is different than the Pipeline Risk Evaluation. The purpose of the annual Leak Analysis is to evaluate trends based on material types and leak cause categories. If any trends are identified, mitigation efforts are undertaken accordingly. For instance, this annual review process would identify a trend on riser leaks which could result in a targeted accelerated action to address a specific threat with a particular riser manufacturer or vintage of riser, should the data support that effort.

SED's Response:

SED has reviewed the response and understands that aboveground pipeline components are treated separately from the underground components. SWG pointed out that if any trends are identified in respect of riser leaks, the targeted accelerated actions are taken. Please keep the records if this occurs.

SWG's Response:

(2) Southwest Gas appreciates SED's recommendation and will continue efforts to further reduce the use of "Other" leak causes. Training has been provided consistent with PHMSA's guidance indicating that the most likely cause of leak should be selected when a leak is not excavated, based on known common leaks for a given material. Refresher training will be provided to Company field personnel by March 31, 2021.

SED's Conclusion:

SED has reviewed the response and appreciates SWG's efforts. The regular analysis of leaks falling under "Other Cause" will be helpful in this regard.

Gas Distribution Integrity Management : Report Mechanical Fitting Failures (GDIM.MF)

(3) Question Are there procedures to collect information necessary to comply with the reporting Text requirements of 192.1009?

References 192.1009

Assets Covered Main Office (Specialized Inspections) (88373 (30))

Issue Summary Title 49 Code of Federal Regulation, §192.1009(a) States:

"Except as provided in paragraph (b) of this section, each operator of a distribution pipeline system must submit a report on each mechanical fitting failure, excluding any failure that results only in a nonhazardous leak, on a Department of Transportation Form PHMSA F-7100.1-2. The report(s) must be submitted in accordance with §191.12."

The report on Mechanical Fitting Failures is submitted annually on PHMSA Form, F-7100.1-2. This was discussed and SWG mentioned that current source of collecting this information is using "Material Investigation Reports" which are performed when a component is removed from the ground. However, there may be situations when the material is not removed. SWG mentioned that the analysts look at all leaks involving fittings, however,

there is no specific procedure which outlines steps for collecting "Mechanical Fitting Failure" information.

Therefore, SWG should develop a procedure which outlines steps for collecting accurate "Mechanical Fitting Failure" information. This procedure can be part of the DIMP Plan, or as a separate procedure referenced in the DIMP Plan, as deemed appropriate by SWG. This procedure should also include steps to conduct quality assurance.

SWG's Response:

Southwest Gas agrees with SED's recommendation and will update its DIMP Plan to include the annual leak review process, in addition to the existing Material Investigation Procedure for Mechanical Fitting Failure Reporting (MFFR) associated with hazardous leaks. This will be completed by March 15, 2021. For SED's awareness, Southwest Gas is also monitoring PHMSA's proposed Gas Regulatory Reform (PHMSA-2018-0046) rulemaking which includes a proposal to repeal submission requirements for the MFFR reports in lieu of existing incident reporting and enhanced distribution annual reporting. PHMSA stated in their proposal that "after 8 years of collecting and analyzing MFF[R] information, [they] have determined that further collection of MFF[R] reports is no longer necessary." The Company filed public comments supporting this proposed change to the PHMSA docket earlier in 2020.

SED's Conclusion:

SED has reviewed the response and appreciates SWG's action in this regard for including the information in DIMP Plan by March 31, 2021 (as indicated by an email sent later).

SWG has pointed out PHMSA's proposed Gas Regulatory Reform (PHMSA-2018-0046) rulemaking, although it may happen, but it will be still helpful to keep track of mechanical fitting failures to ensure integrity of the gas pipeline system.

Gas Distribution Integrity Management : GDIM Implementation (GDIM.IMPL)

- (4) Question Does documentation reviewed demonstrate that measures to reduce risks per the DIMP Text plan are being implemented?

References 192.1007(d)

Assets Covered Main Office (Specialized Inspections) (88373 (30))

Issue Summary Title 49 Code of Federal Regulation, §192.1007(d) States:

"Identify and implement measures to address risks. Determine and implement measures designed to reduce the risks from failure of its gas distribution pipeline. These measures must include an effective leak management program (unless all leaks are repaired when found)."

SED reviewed Section 8 of the DIMP Plan which includes examples of implementing measures to reduce risk (i.e., 8.1.1.1 - increasing the frequency of leak surveys for identified threats & 8.3- Early Vintage Plastic Pipe (EVPP) replacement program), however, it was determined that the results of DPP's (Damage Prevention Plan) analysis and corrective actions which includes leaks associated with excavation damage, are not included in the DIMP plan as measures to reduce risk.

In response to a data request, SWG mentioned, *"Damage Prevention resided under DIMP's direct purview until September of 2019. DIMP works closely with the Damage Prevention Administrator in the review of leaks associated with excavation damages. The DIMP Manager is also copied on the quarterly submittals for the Quarterly Incident Reviews (QIRs). The damage rates are included in the Leak Analysis Presentation that DIMP completes annually. DIMP will include the DPP analysis and corrective actions document in the Annual DIMP Team Meeting and will be reflected in the meeting minutes moving forward."*

SED emphasizes that the DPP's analysis and/or corrective actions to reduce the risk of excavation damage be included in the DIMP plan.

SWG's Response:

Southwest Gas appreciates SED's recommendation and clarifies that the Company's DIMP Plan currently incorporates the Damage Prevention Plan in section 8.3.2 as another program that addresses risk and utilizes damage prevention metrics in the Company's Leak Analysis Report. Furthermore, the Company will include the review of the Annual Excavation Damage Risk Assessment in its Annual DIMP Team Review. Please reference Attachment 1_2020 Annual DIMP Review Agenda, which demonstrates the inclusion of this review.

SED's Conclusion:

SED has reviewed the response and appreciates the action taken.

- (5) Question Have any measures to reduce risks resulting in the elimination/mitigation of the associated Text identified threat been completed (e.g., pipe replacement program completed, etc.)?

References 192.1007(d)

Assets Covered Main Office (Specialized Inspections) (88373 (30))

Issue Summary Title 49 Code of Federal Regulation, §192.1007(d) States:

"Identify and implement measures to address risks. Determine and implement measures designed to reduce the risks from failure of its gas distribution pipeline. These measures must include an effective leak management program (unless all leaks are repaired when found)."

SED reviewed Section 8 of the SWG DIMP Plan which includes examples of implementing measures to reduce risk. The section 8.2.1 states that the segments with a Risk Assessment value of 5.5 or higher will be remediated by total replacement of that segment. SWG mentioned that during the period 2017-2019, only one segment has been identified for replacement (in year 2019) which is due for replacement by the end of the year 2020 (by the end of the following calendar year, as per section 8.2.1).

SED emphasizes that the replaced pipe segments should be assessed for integrity issues which will provide useful insight for other parts of the system.

SWG's Response:

Southwest Gas acknowledges SED's recommendation and clarifies that its current DIMP processes include historical leak data such as pipe type, year of install, cause of leak, leak grade, location, etc. This data is used by the Company's DIMP team to track leak information throughout the distribution system. This data is captured when leaks are repaired, and the leaking component is submitted through the Company's Material Investigation process. The information is then used to evaluate the leaks and assess the impacted segments, as described in Section 8.2 of the Company's DIMP Plan for replacement of segments.

In the case of the pipeline segment in question, a material investigation was conducted by the Company's lab when the original leaks were identified and repaired in 2018. A copy of the leak repair work requests that drove this replacement are provided as Attachment 2_Leak Repair Records to showcase this process further.

Southwest Gas believes that the Company's process, as described in the Company's DIMP Leak Evaluation (Section 7.3) and Risk Assessment and Validation (Section 8.2) and further clarified above, meets the intent of SED's recommendation.

SED's Conclusion:

SED has reviewed the response and acknowledges the work done on the said segment of pipeline. It will also be good idea that in future when a pipeline segment is replaced, that segment be assessed for any issues other than found from leak causes. This will provide

information on possibility of any other integrity issues that might not have resulted in leaks but could be potential causes.