

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



September 18, 2020

GI-2020-06-SCG-40-09  
GI-2020-06-SDG-53-09

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

SUBJECT: General Order (GO) 112-F Gas Inspection of Southern California Gas Company, and San Diego Gas and Electric Company Distribution Integrity Management Program (DIMP)

Dear Mr. Schwecke,

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a General Order 112-F inspection of Southern California Gas (SCG) Company's, and San Diego Gas and Electric Company's (SDG&E) Distribution Integrity Management Program (DIMP) between June 15-19 and 22-26, 2020.

SED's findings are noted in the Summary of Inspection Findings (Summary) which is enclosed with this letter. The Summary reflects only those particular records that SED inspected during the inspection. There were no violations, however seventeen concerns were found which are outlined in the Summary.

Within 30 days of your receipt of this letter, please provide a written response indicating the measures taken by SEMPRA to address the concerns noted in the Summary.

If you have any questions, please contact Sikandar Khatri at (415) 703-2565 or by email at [Sikandar.Khatri@cpuc.ca.gov](mailto:Sikandar.Khatri@cpuc.ca.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read "Terence Eng".

Terence Eng, P.E.  
Program Manager  
Gas Safety and Reliability Branch  
Safety and Enforcement Division

Enclosure: Summary of Inspection Findings

cc:

Troy Bauer, Manager, Southern California Gas Company  
Dennis Lee, SED  
Claudia Almengor, SED  
Kelly Dolcini, SED

# Summary of Inspection Findings

**Dates of Inspection:** June 15-19 and 22-26, 2020

**Operator:** Southern California Gas Company and San Diego Gas and Electric Company (SEMPRA)

**Operator IDs:** 18484 (primary) 18112

**Inspection Systems:** Distribution Integrity Management Program (DIMP)

**Assets (Unit IDs):** SEMPRA (88390 88391)

**System Type:** GD

**Inspection Name:** SEMPRA DIMP Inspection

**Lead Inspector:** Sikandar Khatri

**Operator Representative:** Khoa Le

## Unsatisfactory Results

*No Preliminary Findings.*

## Concerns

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

**(1) Question Does the plan contain procedures to identify additional information that is needed Text to fill gaps due to missing, inaccurate, or incomplete records?**

References 192.1007(a)(3)

Assets Covered SEMPRA (Multi Unit)

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)."*

SEMPRA has established a process to collect missing information (manufacturer) for plastic pipe for SDG&E. However, no systematic list of missing information was available. DIMP team should document all missing information (which they come across while working

through different DIMP cycles, for example specific fittings, pipeline parameters and others) and keep it updated.

SED recommends that this process be formalized in an appropriate DIMP document i.e. include in DIMP procedure that a list of missing information will be developed and identify the processes that will be used to collect the information. Please follow the same and keep records of compliance.

**(2) Question Do the procedures specify the means to collect the additional information needed Text to fill gaps due to missing, inaccurate, or incomplete records (e.g., O&M activities, field surveys, One-Call System, etc.)?**

References 192.1007(a)(3)

Assets Covered SEMPRA (Multi Unit)

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)."*

SEMPRA Document, DIMP.2 states that the information collected through normal activities will be used. If needed, new procedure will be developed for undetermined data.

SED recommends that DIMP procedures should specifically identify means to collect additional information needed to fill gaps due to missing, inaccurate or incomplete records, such as working with operation and maintenance personnel to collect this information through normal activities, continue to do field survey/interviews, One-Call systems, looking at purchase records and use other means as necessary.

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

References 192.1007(a)(3)

Assets Covered SEMPRA (Multi Unit)

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)."*

The comprehensive list of information needed to fill gaps due to missing, inaccurate, or incomplete records was not available. SEMPRA should prepare this list as such information is identified and update records as the required information becomes available. Please document and keep records.

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

**(4) Question In identifying threats did the information considered include all of the required Text data and information sources?**

References 192.1007(b)

Assets Covered SEMPRA (Multi Unit)

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."*

DIMP.3 "Threat Identification" page 6 states, in part:

"Potential threats may be identified during field investigations, from near misses, NTSB Reports, PHMSA Advisory Bulletins, Industry Incidents, and/or M&I activities."

A review of threat identification records provided in response to DR#19 demonstrate a review of leak history, PHMSA advisories, and NTSB reports for threat and potential threat identification. However, records do not indicate a review of other reasonably available information in the identification of potential threats, such as field investigations, near misses, industry incidents, M&I activities not related to leak repair, excavation damage that did not result in a leak, etc.

SED recommends that SEMPRA incorporate a review of these sources and other O&M records for the identification of potential threats to the distribution system. An example of these O&M records is the patrolling records which in addition to others has useful information on environmental threats such as landslides, flooding, earthquake damage etc.

**(5) Question Do the procedures consider, in addition to the operator's own information, data Text from external sources (e.g. trade associations, government agencies, or other system operators, etc.) to assist in identifying potential threats?**

References 192.1007(b)

Assets Covered SEMPRA (Multi Unit)

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."*

A review of records demonstrates the operator is reviewing NTSB reports and PHMSA advisories to identify potential threats. Trade associations and other operators are additional available sources of knowledge, and SED recommends the operator include these other sources in the identification of potential threats. Examples include GPTC, AGA, GTI, Midwest Energy Association (MEA), Southern Gas Association (SGA), Northeast Gas Association (NGA), Western Energy Institute (WEI), other operators' best practices, etc. SEMPRA should outline in an appropriate DIMP document that what external resources will be reviewed in identifying the potential threats.

The process of attending conference/workshops should be documented and notes kept for the knowledge/information gained, and its implementation, if any.

## **Gas Distribution Integrity Management : Evaluate and Rank Risk (GDIM.RR)**

**(6) Question Do the procedures contain the method(s) and/or a model used to determine the Text relative importance of each threat and estimate and rank the risks posed?**

References 192.1007(c)

Assets Covered SEMPRA (Multi Unit)

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

*"Evaluate and rank risk. An operator must evaluate the risks associated with its distribution pipeline. In this evaluation, the operator must determine the relative importance of each threat and estimate and rank the risks posed to its pipeline. This evaluation must consider each applicable current and potential threat, the likelihood of failure associated with each*

*threat, and the potential consequences of such a failure. An operator may subdivide its pipeline into regions with similar characteristics (e.g., contiguous areas within a distribution pipeline consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar actions likely would be effective in reducing risk."*

SEMPRA's document DIMP.4 "Evaluate and Rank Risk" pages 4-6 describe the risk model and weighting factors that go into the model. The table on page 6 lists a weight of 5 for undetermined pressure, which is the same as the weight for medium pressure. SEMPRA response to DR#32 indicated that there have been only 1 leak with an undetermined pressure used in the risk model within the last three years.

SED recommends that for the risk model to be conservative, the weight for undetermined pressure should match the weight factor for high pressure (worst case scenario), i.e. 10.

**(7) Question Are the results of the risk ranking supported by the risk evaluation Text model/method?**

References 192.1007(c)

Assets Covered SEMPRA (Multi Unit)

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

*"Evaluate and rank risk. An operator must evaluate the risks associated with its distribution pipeline. In this evaluation, the operator must determine the relative importance of each threat and estimate and rank the risks posed to its pipeline. This evaluation must consider each applicable current and potential threat, the likelihood of failure associated with each threat, and the potential consequences of such a failure. An operator may subdivide its pipeline into regions with similar characteristics (e.g., contiguous areas within a distribution pipeline consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar actions likely would be effective in reducing risk."*

SEMPRA's document DIMP.4 "Evaluate and Rank Risk" page 6 lists the Cause Significance Factors for eight causes/threats. The Cause Significance Factor for "Other Cause" is 3.89%. This cause/threat is not listed in the risk ranking records provided to SED (S4Q5,6,7,8), although this appears in "Leak Repair Form" and other documents.

SED recommends that "Others" threat category be revisited in "Leak Repair Form" to minimize events that go to this category; additionally, this should be included in "threat results", when applicable.

## **Gas Distribution Integrity Management : Measure Performance and Evaluate Effectiveness (GDIM.EV)**

**(8) Question Does the plan establish a baseline for each performance measure? Text**

References 192.1007(e)

Assets Covered SEMPRA (Multi Unit)

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

*"Measure performance, monitor results, and evaluate effectiveness. (1) Develop and monitor performance measures from an established baseline to evaluate the effectiveness of its IM program. An operator must consider the results of its performance monitoring in periodically re-evaluating the threats and risks. These performance measures must include the following:*

*(i) Number of hazardous leaks either eliminated or repaired as required by §192.703(c) of this subchapter (or total number of leaks if all leaks are repaired when found), categorized by cause;*

*(ii) Number of excavation damages;*

*(iii) Number of excavation tickets (receipt of information by the underground facility operator from the notification center);*

*(iv) Total number of leaks either eliminated or repaired, categorized by cause;*

*(v) Number of hazardous leaks either eliminated or repaired as required by §192.703(c) (or total number of leaks if all leaks are repaired when found), categorized by material; and*

*(vi) Any additional measures the operator determines are needed to evaluate the effectiveness of the operator's IM program in controlling each identified threat."*

SEMPRA has established baseline for each performance measure as outlined in CFR 192.1007(e). The other programs such as DREAMS, GIPP, DRIP, and others are monitored through the measure of progress of these projects.

SED recommends exploring to establish performance measures baseline for these projects to get an insight into the success/effectiveness of the programs and document the same. The performance measures thus developed must be documented in an appropriate DIMP document.

**(9) Question When measures are required to reduce risk, does the plan provide/describe what Text type and/or what specific performance measures will be used to measure effectiveness?**

References 192.1007(e)

Assets Covered SEMPRA (Multi Unit)

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

*"Measure performance, monitor results, and evaluate effectiveness. (1) Develop and monitor performance measures from an established baseline to evaluate the effectiveness of its IM program. An operator must consider the results of its performance monitoring in periodically re-evaluating the threats and risks. These performance measures must include the following:*

*(i) Number of hazardous leaks either eliminated or repaired as required by §192.703(c) of this subchapter (or total number of leaks if all leaks are repaired when found), categorized by cause;*

*(ii) Number of excavation damages;*

*(iii) Number of excavation tickets (receipt of information by the underground facility operator from the notification center);*

*(iv) Total number of leaks either eliminated or repaired, categorized by cause;*

*(v) Number of hazardous leaks either eliminated or repaired as required by §192.703(c) (or total number of leaks if all leaks are repaired when found), categorized by material; and*

*(vi) Any additional measures the operator determines are needed to evaluate the effectiveness of the operator's IM program in controlling each identified threat."*

SEMPRA provided document S6Q6 which shows that projects are assessed based on the amount of work done, rather than effectiveness of the work. For example, page 14 of S6Q6 shows the Sewer Lateral Inspection Program (SLIP) dashboard, which tracks annually the O&M budget spent, records researched, field inspections, and intrusions repaired.

SED recommends that other performance measures may be explored which can provide information on the effectiveness of these special projects, such as SLIP, DREAMS, GIPP, DRIP, and others. This should be documented.

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

- (10) Question Is missing or incomplete system information and data needed to fill Text knowledge gaps to assess existing and potential threats being collected?**

References 192.1007(a)(3)

Assets Covered SEMPR (Multi Unit)

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)."*

SED emphasizes that a list of missing or incomplete system information and data (for assessing existing and potential threats) be developed, and the same be collected as this becomes available. The records must be maintained.

- (11) Question Has the operator identified information or data from external sources (e.g. Text trade associations, operator's consultants, government agencies, other operators, manufacturers, etc.) that may require re-evaluation of threats and risks?**

References 192.1007(b)

Assets Covered SEMPR (Multi Unit)

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."*

SEMPRA does not have records that show the information and data was reviewed/identified from external sources that may require re-evaluation of threats and risks. Suggested external resources to explore this information include but are not limited to: GPTC Guide, PHMSA Bulletins and American Gas Association (AGA) resources; and where possible other industry best practices such as, Gas Technology Institute (GTI) Publications, American Gas Foundation (AGF) Study - Safety Performance and Integrity of the Natural Gas Distribution Infrastructure January 2005, American Society of Mechanical Engineers (ASME) Standard B31.8S - Managing System Integrity of Gas Pipelines, Regional Industry Organizations (Midwest Energy Association (MEA), Southern Gas Association (SGA), Northeast Gas Association (NGA), Western Energy Institute (WEI)). SEMPR should investigate the use of these resources and make decisions as applicable to their program, but the process should be documented.

- (12) Question Is missing or incomplete system information and data using the procedures Text prescribed in the DIMP plan being collected?**

References 192.1007(a)(3)

Assets Covered SEMPR (Multi Unit)

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)."*

SED recommends including in DIMP procedures the means to collect missing or incomplete system information. These procedures should be followed to collect the information, and records maintained.

**(13) Question Are data collection forms used in conjunction with the operator's DIMP plan Text being fully and accurately completed?**

References 192.1007(a)

Assets Covered SEMPRA (Multi Unit)

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

*"Knowledge. An operator must demonstrate an understanding of its gas distribution system developed from reasonably available information.*

*(1) Identify the characteristics of the pipeline's design and operations and the environmental factors that are necessary to assess the applicable threats and risks to its gas distribution pipeline.*

*(2) Consider the information gained from past design, operations, and maintenance.*

*(3) 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).*

*(4) Develop and implement a process by which the IM program will be reviewed periodically and refined and improved as needed.*

*(5) Provide for the capture and retention of data on any new pipeline installed. The data must include, at a minimum, the location where the new pipeline is installed and the material of which it is constructed."*

SED reviewed sample "Leak Repair Forms" as well observed its demonstration during the WebEx session. Following observations were made for threat categories:

(1) There was no "Equipment Failure" category

(2) The "Outside Force Damage Category" listed the options which should be under "Excavation Damage" such as 1st Party, 2nd Party and 3rd Party Damages. SEMPRA should create separate category for "Excavation Damages".

(3) The "Outside Force Damage" category should have options like Vehicular Damage, Vandalism, and others as appropriate

(4) The "Others" threat category has an option "Valve Stem Leak" which is better suited to be listed under "Equipment Failure". The threats coming from "Risk Model" under "Others" category should be closely scrutinized manually, and if they are better suited to other primary threat categories, then those be listed under appropriate category and changes should be made accordingly to the Leak Repair Form. The "Others" threat category should have least possible options possible.

SED recommends to:

(1) Thoroughly review "Leak Repair Form" and make necessary changes to align with PHMSA threat categories

(2) Minimize leaks being assigned to "Others" threat category

GPTC guide and ASME 31.8S among others are excellent sources for this information. SEMPRA should make and implement changes including training (if any) in the "Leak Repair Form" within 90 days of the receipt of this letter and send confirmation to SED of the same.

**(14) Question If Subject Matter Experts (SMEs), is their documented knowledge and Text experience being appropriately used in the DIMP Program?**

References 192.1007(a)



Assets Covered SEMPRA (Multi Unit)

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

*"Knowledge. An operator must demonstrate an understanding of its gas distribution system developed from reasonably available information.*

*(1) Identify the characteristics of the pipeline's design and operations and the environmental factors that are necessary to assess the applicable threats and risks to its gas distribution pipeline.*

*(2) Consider the information gained from past design, operations, and maintenance.*

*(3) 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).*

*(4) Develop and implement a process by which the IM program will be reviewed periodically and refined and improved as needed.*

*(5) Provide for the capture and retention of data on any new pipeline installed. The data must include, at a minimum, the location where the new pipeline is installed and the material of which it is constructed."*

In response to data requests and discussion with SEMPRA personnel during the Inspection, it was mentioned that no specific list of SMEs exist, however, the interaction with SMEs is done at departmental and work responsibility level.

SED recommends that SMEs in different fields of specialization, such as Corrosion, Damage Prevention, Geoscience, Engineering and Construction and others be included in Steering Committee for their input to the DIMP Program. This will be helpful, for example for determining weight factors, interpreting the Risk model results and others. The process of establishing "Steering Committee", the required knowledge and experience of its members, list of its members be formalized and documented. The minutes of steering committee meetings continue to be recorded and maintained for review.

**(15) Question Does each implemented risk reduction measure identified in the DIMP plan Text address a specific risk or group of risks?**

References 192.1007(d)

Assets Covered SEMPRA (Multi Unit)

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)."*

DIMP cycle results in Risk Ranking which is used for determining the mitigation activities. PHMSA DIMP FAQ C.4.d.1. states, "Operators must perform a risk analysis to understand the factors that are important to their risk and should compare the results of this analysis to the actions now being taken to assure pipeline safety."

SED recommends that after each DIMP cycle, DIMP team communicate prioritized list of projects to planning and execution teams based on risk ranking to reduce the risk and follow up on these for proper and timely action. Documents must be maintained outlining the reasons of delays in implementation of projects, if any.

**(16) Question If the periodic evaluation indicates that implemented measures to reduce Text risks are NOT effective, were risk reduction measures modified, deleted or added?**

References 192.1007(f)

Assets Covered SEMPRA (Multi Unit)

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

*"Periodic Evaluation and Improvement. An operator must re-evaluate threats and risks on its entire pipeline and consider the relevance of threats in one location to other areas. Each operator must determine the appropriate period for conducting complete program evaluations based on the complexity of its system and changes in factors affecting the risk of failure. An operator must conduct a complete program re-evaluation at least every five years. The operator must consider the results of the performance monitoring in these evaluations."*

SED discussed with SEMPRA regarding the criteria that would constitute implemented measures to be ineffective. For example, setting a criterion such as "drastic decrease in certain event" ignores the initial and continuous assessment of the effectiveness of the programs. DIMP programs are supposed to be proactive, and once mitigation measures are implemented, the trends should be monitored which can guide on effectiveness of the measures and consideration of alternate measures, if needed.

SED recommends that SEMPRA devise a set criterion for each program stating what conclusion would be drawn from the results of the continuous evaluation for the effectiveness and devise alternate strategy if the measures in place do not provide desired positive results.

SED also reviewed the response provided for DR#37. In 2017, the 5-year moving average performance metric triggered an investigation into the Equipment Failure threat. SEMPRA provided the investigation report on DR#45, which summarized the analysis and made three recommendations. However, based on WebEx discussions with SEMPRA, no actions were taken to implement these recommendations.

SED finds concern with this approach, as it appears SEMPRA identified a worsening performance metric, performed analysis into the threat, identified possible actions to mitigate the threat, and took no action.

SED recommends SEMPRA keep clear records of both:

- a) Any action taken in response to a threat investigation
- b) Justification for why no action was taken after the investigation.

**(17) Question Did the periodic evaluation indicate that the selected performance measures are assessing the effectiveness of risk reduction measures, and, if not, were performance measures modified, deleted or added?**

References 192.1007(f)

Assets Covered SEMPRA (Multi Unit)

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

*"Periodic Evaluation and Improvement. An operator must re-evaluate threats and risks on its entire pipeline and consider the relevance of threats in one location to other areas. Each operator must determine the appropriate period for conducting complete program evaluations based on the complexity of its system and changes in factors affecting the risk of failure. An operator must conduct a complete program re-evaluation at least every five years. The operator must consider the results of the performance monitoring in these evaluations."*

SED reviewed SEMPRA's records and observed the performance measures required by 192.1007(e) are tracked and monitored, however, some of threat categories show increasing trend over time. The accelerated programs are monitored through progress of the work completed.

SED recommends that SEMPRA devise a set of specific performance measures for each program which should be monitored and adjusted if needed for the programs to be effective.