

## PUBLIC UTILITIES COMMISSION

505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3298



December 24, 2019

Mr. Jerry Schmitz, Vice President/Engineering Staff  
Southwest Gas Corporation  
Engineering Services  
5241 Spring Mountain Road  
Las Vegas, NV 89193-8510

GI-2019-06-SWG-30-14

SUBJECT: SED's Closure Letter for General Order 112-F Southwest Gas (SWG) Damage Prevention Program Inspection

Dear Mr. Schmitz:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission reviewed Southwest Gas Corporation's (SWG) response letter dated November 27, 2019 for the findings identified during the General Order 112-F inspection of SWG's Damage Prevention Program Inspection, between June 25-28, 2019.

A summary of the inspection findings documented by the SED, SWG's response to our findings, and SED's evaluation of SWG's response taken for each identified Violation and Area of Concern and Recommendation is attached.

This letter serves as the official closure of the 2019 GO 112-F Inspection of the SWG Damage Prevention Program Inspection, 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 Sunil K. Shori at (415) 703-2407 or by email at [SKS@cpuc.ca.gov](mailto:SKS@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  
California Public Utilities Commission

cc: Terence Eng, Kan-Wai Tong, Sunil Shori, & Claudia Almengor

# Post-Inspection Written Findings

**Dates of Inspection:** 06/25–28/ 2019

**Operator:** Southwest Gas Corporation (SWG)

**Operator ID:** 18536

**Inspection Systems:** Distribution Operations

**Assets (Unit IDs):** Entire Operation

**System Type:** GD – Natural Gas

**Inspection Name:** Southwest Gas Corporation (SWG) Damage Prevention

**Lead Inspector:** Sunil K. Shori

**Operator Representative:** Laurie Brown, Chris Davy, Paul Krahl, and others

## I. Probable Violations

### SUMMARY OF INSPECTION FINDINGS

49 CFR, Part 192, Section 192.614(a), in part, states: “... each operator of a buried pipeline shall carry out in accordance with this section a written program to prevent damage to that pipeline by excavation activities...An operator may perform any of the duties required by paragraph (b) of this section through participation in a public service program, such as a "one-call" system, but such participation does not relieve the operator of responsibility for compliance with this section.”

49 CFR, Part 192, Section 192.614(b), in part, states: “An operator may comply with any of the requirements of paragraph (c) of this section through participation in a public service program, such as a one-call system, but such participation does not relieve the operator of responsibility for compliance with this section. However, an operator must perform the duties of paragraph (c)(3) of this section through participation in a one-call system, if that one-call system is a qualified one-call system... An operator's pipeline system must be covered by a qualified one-call system where there is one in place...”

Finally, 49 CFR, Part 192, Section 192.614(c) requires: The damage prevention program required by paragraph (a) of this section must, at a minimum:

- (1) Include the identity, on a current basis, of persons who normally engage in excavation activities in the area in which the pipeline is located.
- (2) Provides for notification of the public in the vicinity of the pipeline and actual notification of the persons identified in paragraph (c)(1) of this section of the following as often as needed to make them aware of the damage prevention program:
  - (i) The program's existence and purpose; and

- (ii) How to learn the location of underground pipelines before excavation activities are begun.
- (3) Provide a means of receiving and recording notification of planned excavation activities.
- (4) If the operator has buried pipelines in the area of excavation activity, provide for actual notification of persons who give notice of their intent to excavate of the type of temporary marking to be provided and how to identify the markings.
- (5) Provide for temporary marking of buried pipelines in the area of excavation activity before, as far as practical, the activity begins.
- (6) Provide as follows for inspection of pipelines that an operator has reason to believe could be damaged by excavation activities:
  - (i) The inspection must be done as frequently as necessary during and after the activities to verify the integrity of the pipeline; and
  - (ii) In the case of blasting, any inspection must include leakage surveys.

Both one-call systems (regional notification centers) instrumental in the operation of California's one-call damage prevention program, USANorth811 and DigAlert, meet the requirements of 49 CFR, Part 198, Section 198.39 and almost the entirety of Section 198.37. Therefore, both one-call systems are considered as a "qualified one-call system" per federal regulations. Moreover, since SWG subsurface gas pipeline facilities traverse the respectively defined territories of both one-call systems in California, USANorth and DigAlert, SWG is a member of both systems.

## I. Probable Violations

§192.13(c) states:

*"Each operator shall maintain, modify as appropriate, and follow the plans, procedures, and programs that it is required to establish under this part."*

We believe that SWG need to modify procedures of its Damage Prevention Programs to address the following:

- 1) Currently, SWG Line Locating Policy, Section 1.2.1, states: "The appropriate state One-Call laws will be followed when locating underground facilities." However, SWG needs to modify its DPP, Section 3.2, PHILOSOPHY AND COMMITMENT, to provide a clear statement that SWG will comply with all applicable state laws (including one-call) requirements applicable to SWG when it performs locates for its facilities as well as when it is an excavator.

**SWG Response 1:** Southwest Gas acknowledges SED's recommendation to modify the Damage Prevention Programs, Section 3.2 to expressly state that Southwest Gas follows all applicable state laws and requirements applicable to facility locates. Southwest Gas will make this revision no later than June 30, 2020.

**SED Conclusion 1: SED accepts SWG's response.**

- 2) SWG has an established a Standby Procedure document which provides details on standby for high pressure and horizontal boring. The Standby procedure, which SWG representatives indicated is being clarified to limit standby requirements to boring and not auguring, requires use of a detailed Standby Checklist which records date and observations. This procedure and checklist require a minimum separation of 12-inches between the facility installed by bore and SWG facilities; however, Section 3.3.2 states: "Less than 12-inches of separation requires approval by Southwest Gas." SWG needs to clarify if, and under what circumstances, it would allow a bored facility to be installed with less than 12-inches of separation required by GO 112-F. Also, our review of Ticket# A183650596, a ticket with fiber optic facilities installed by boring, indicated SWG provided no standby because the excavator never called SWG back to indicate start of work; however, SWG has no procedure to follow-up with the excavator to notify SWG of work start so stand-by can be completed or provide patrol over area to determine start of work activity.

**SWG Response 2:** Southwest Gas acknowledges SED's recommendation to add clarity to the Standby Procedure to identify under what circumstances a less than 12-inch separation would be allowed. Within this recommendation was a second point identifying that Southwest Gas does not have a written procedure to follow up with an excavator of the anticipated start date of the work when a standby is required. Southwest Gas appreciates SED identifying these two areas where the procedures could be enhanced. Southwest Gas will review instances where an approval was granted for less than 12-inch separation to determine if additional enhancements are required for this section of its procedures.

In addition, although it is not a specific state regulatory requirement, Southwest Gas acknowledges SED's concerns and agrees to enhance the standby process to require a follow up with the excavator regarding the estimated work start date. The Company anticipates completion of these procedural reviews and any required procedural revisions no later than June 30, 2020.

**SED Conclusion 2:** SED accepts SWG's response.

- 3) SWG has an established Standby Procedure document and a Standby Quality Control Requirements document which provides QC for qualified personnel that perform the standby activity. SWG standby procedure requires use of a detailed Standby Checklist which records date and observations; however, there continues to be no capture of time on site within this checklist. In its March 30, 2018 response, SWG indicated time on site would be captured "through the creation of a new work request (WR) type in its Field Operations Management System (FOMS)." However, it did not appear that by the time of the audit this change had been implemented.

**SWG Response 3:** Southwest Gas agrees with SED's recommendation and is currently finalizing a new work order (WR) type for Standbys that will capture this data. The new WR will be in production by January 31, 2020.

**SED Conclusion 3:** SED accepts SWG's response.

- 4) Follow-up to March 30, 2018 SWG Response to Concern b): SWG has still not clearly indicated which excavation damage events it will investigate in all instance. The SWG Damage Prevention Program (DPP) states: "The Company investigates excavation damages as appropriate." However, we continue to believe that, at a minimum, the term "appropriate" needs to include in depth investigations of all 1<sup>st</sup> and 2<sup>nd</sup> party damages.

**SWG Response 4** Southwest Gas acknowledges SED's recommendation and will revise the current procedures to remove the words "as appropriate". Southwest Gas will make this revision no later than June 30, 2020.

**SED Conclusion 4:** SED accepts SWG's response regarding the words "as appropriate" and we expect that the revision will also address SED's position regarding the need to investigate all 1<sup>st</sup> and 2<sup>nd</sup> damages.

- 5) Follow-up to March 30, 2018 SWG Response to Concern d): SWG has implemented SED's recommendation regarding providing details for follow-up actions in response to investigation findings; however, records review of SWG's north Division indicated that documentation is still lacking details and/or otherwise not available.

**SWG Response 5:** Southwest Gas acknowledges the process inconsistency between the Southern California and Northern Nevada Divisions. Southwest Gas is actively reviewing the existing process, procedures, and documentation with each Division to develop a more consistent process for the documentation of damage investigations. The Company will complete this process change no later than June 30, 2020.

**SED Conclusion 5:** SED accepts SWG's response.

- 6) The definition of a Tolerance Zone within the SWG Damage Prevention Plan needs to provide a measurement consistent with states' requirements of 24-inches from the centerline of the mark or surface of the facility when facility dimensions are provided.

**SWG Response 6:** Southwest Gas agrees with SED's recommendation and will revise the definition of Tolerance Zone to include a measurement to be consistent with the State's requirement. The Company anticipates completing these revisions no later than June 30, 2020.

**SED Conclusion 6:** SED accepts SWG's response.

- 7) SWG procedures do not provide details on its ticket receipt and assigning process. SWG representatives indicated this is because procedures vary among its several divisions due to differing contract/business practices. However, written procedures for conducting operations are required by regulations. Written procedures also become important as an operator experiences high turnover (i.e., SWG in the north). SWG's procedures also provide no mention of the need to provide a positive response to the notifying party noted on the ticket within two business days of ticket notice, or by the legal start date noted on the ticket. Moreover, the procedures provide no clarity on the requirement for SWG to communicate to an excavator the need for the excavator and SWG to agree on a mutual time to hold a field meeting per GC 4216 when an excavation is proposed near a high priority facility. A field meet requirement per GC 4216 is not the same as a stand-by requirements SWG may have within its standards.

**SWG Response 7:** Southwest Gas agrees with SED's comments and will revise its procedure to include an overview of the ticket process, including requirements for positive responses and scheduling and holding field meets with the excavator when excavation is proposed within 10 feet of the Company's high priority subsurface installation. The Company will complete these revisions no later than June 30, 2020.

**SED Conclusion 7:** SED has reviewed the response and attachments from SWG and has opted not to impose a fine or penalty at this time.

- 8) SWG's Line Locating Policy, Section 1.6, and Line Locating Procedure, Section 6.3, requires the company to use American Public Works Association (APWA) marking guidelines and colors for providing facility locate marks. Moreover, the locate procedure provides details on the locate methods, the symbols to be placed to convey facility information, and specific details on the size and frequency of marks placed. We believe that SWG needs to also add a statement in its Line Locating Policy that its marking of proposed excavation sites will meet CGA Best Practices, or use more stringent and accurate requirements, since GC 4216 adopts CGA Best Practices as a minimum requirement.

**SWG Response 8:** Southwest Gas agrees with SED's recommendation and will revise the Line Locating Policy to add an affirmative statement that the Company meets the CGA Best Practice Marking standard as a minimum. Southwest Gas will complete this revision no later than June 30, 2020.

**SED Conclusion 8:** SED accepts SWG's response.

- 9) Our inspection found that QC procedures for Victorville may not be the same as other SWG divisions or not applied as well at other divisions as applied at Victorville. As an example, while we found Victorville documents to generally provide good details related to follow-up or investigations documents, we found North Tahoe (NT) had no follow-up or investigation documents for its 2018 investigations reviewed during our inspection. As we noted during this and previous inspections, it is essential that documents provide enough details to allow for a clear assessment of events, follow-up actions taken and final resolutions to address any investigation findings.

**SWG Response 9:** Southwest Gas agrees with SED's recommendation and, consistent with its response to item #5, the Company will ensure that QC documentation is consistent between the Divisions. The Company will complete this process change no later than June 30, 2020.

**SED Conclusion 9:** SED accepts SWG's response.

- 10) SWG has a process by which its contract locator can forward "trouble tickets," which refers to tickets which the contract locator has difficulty locating or processing, to SWG for assistance in locating and closing. However, our review of a May 15, 2018 damage event indicated that SWG has not established a process, to provide and maintain documentation related to trouble tickets, which allows for review of communications and closure of the initial ticket from start to finish. This process should also clarify responsibilities for SWG or its contractor to communicate with and provide updates to the excavator noted on the ticket.

**SWG Response 10:** Southwest Gas agrees with SED's recommendation and is working on a solution for the documentation of trouble locates and to close the loop on communication with the excavator. Southwest Gas anticipates that the associated manual revisions will be completed no later than June 30, 2020.

**SED Conclusion 10:** SED accepts SWG's response related to manual revision dates; however, we request that SWG develop and implement a solution which addresses SED's concern, perhaps through some type of company advisory action, by March 31, 2020.

11) Our inspection found a records falsification issue, related to an ELM employee, that SWG needed to have brought to the attention of the SED, but had not done so before this inspection. This issue occurred on January 11, 2019, was noted during this inspection in June 2019, and notified to SED on July 31, 2019. We believe this indicates that SWG needs to review, and modify as necessary, its procedures related to prioritization of investigations related to possible falsifications and timely notification to the PUC/SED. This could include specifying maximum time period in which an investigation of falsification or QC need to be initiated, following information coming to light or an employee being disqualified, and timely updating SED of any potential records falsification issues discovered by SWG.

**SWG Response 11:** Southwest Gas agrees with SED's recommendation and will revise its self-reporting procedures to clarify the process to investigate and notify SED in a timely matter of potential instances of record falsification. The Company anticipates that these changes will be made no later than March 31, 2020. Southwest Gas has reconfirmed to its operating divisions the importance of bringing investigation results to management's attention, so each situation can be reviewed and handled appropriately, including timely follow up and reporting to SED.

**SED Conclusion 11:** SED accepts SWG's response.

12) SWG needs to specify at what level or after what number of disqualifications, perhaps over some time period, an individual is no longer allowed to perform operations related to its system. SWG representatives indicated that SWG is evaluating this issue; however, nothing has yet been decided. We believe SWG accelerate its efforts in this area.

**SWG Response 12:** Southwest Gas acknowledges SED's comments and appreciates the feedback. The Company has a platform in place to review disqualifications on an individual basis; however, it is currently evaluating parameters and guidelines for establishing a disqualification threshold that would result in revoking Operator Qualifications for repeated deviations from Company policies and procedures. This evaluation includes outreach to peer utilities to understand the structures and processes they have in place for similar circumstances. Southwest Gas will provide an update on this topic at a future semi-annual CPUC/Southwest Gas management meeting.

**SED Conclusion 12:** SED accepts SWG's response.

13) During the inspection we discussed the need to retain records longer than the three years as specified in most SWG procedures. We believe SWG needs to review its record retention requirements to confirm that they allow for SED audits performed every 3 years by CPUC. Though we believe SWG should maintain mark and locate records for 6 years, SWG needs to maintain records for at least 4 years for current SED audit purposes.

**SWG Response 13:** Southwest Gas agrees with SED's recommendation and will revise the current requirement for data retention. The Company will complete this revision no later than June 30, 2020.

**SED Conclusion 13:** SED accepts SWG's response.

14) SWG representatives indicated that SWG standards require maps for transmission pipeline facilities to be updated to include as-built information within 90-days of work completion. However, SWG has no specified time periods within which the same must be done for gas

distribution facilities. We believe SWG needs to establish clear time frames for timely updating maps for distribution facilities to incorporate gas pipeline facility additions and modifications.

**SWG Response 14:** Southwest Gas appreciates SED's comments on establishment of timely updating maps for distribution mains and agrees that a clear specific timeline should be established for updating distribution facility maps. Southwest Gas self-imposed the existing 90-day requirement for updating as-built information related to its transmission facilities. The Company is currently evaluating its work processes to determine an appropriate timeframe for updating as-built information related to distribution facilities. The Company created an initiative focused on process improvements and reporting enhancements that will reduce posting backlog.

To further provide operations personnel with the latest facility information, all proposed main installations are posted to a "proposed" layer in the Company's mapping system. As facilities installed under a work request are commissioned, an annotation is added to the proposed facilities to indicate to the user that the facilities are in-service, and that additional documentation is available in the form of field notes or pending as-builts in the Company's work management system. Southwest Gas is committed to, and has successfully accomplished, a reduction in time associated with processing as-builts through these work process enhancements implemented to date. Southwest Gas will update SED at a future semi-annual CPUC/Southwest Gas management meeting.

**SED Conclusion 14:** SED accepts SWG's response; however, we will continue to evaluate the need for SWG to establish specific timeframes for updating its maps for distribution facilities.

15) Issues with some USA Tickets or Damage Investigations reviewed during the audit:

- a. Ticket A183650596 (Notice id: 181231A2723) – Ticket was issued for boring work, which per SWG standards, required standby but no evidence/documentation was available to determine that standby was performed or determined not to be necessary for the excavation work indicated on the notification;
- b. Work Request #3810688 – SWG contractor, APL, failed to perform locates for properly mapped SWG facilities and damaged a ½” service line;
- c. Ticket X827602381 – SWG contractor, ELM, failed to mark a correctly mapped facility resulting in damage to a ½” service line;
- d. Ticket X819801915-00x – SWG failed to mark a trouble locate and third party proceeded on an excavation. Documentation unclear as to what positive response communications occurred between SWG's locator and excavator to confirm that SWG clearly conveyed that its facilities had not been located;
- e. Ticket X817600879-00X – SWG locator, ELM, mismarked SWG facilities resulting in damage to a 1” service line. Damage investigation provided no supplement or follow-up action taken related to the investigation;
- f. Ticket X815602481 - SWG locator, ELM, mismarked SWG facilities resulting in damage to a ½” service line. Damage investigation provided no supplement or follow-up action taken related to the investigation. This damage was also incorrectly reflected in the CPUC quarterly data report;
- g. Ticket A173340568 - SWG locator, ELM, unmarked SWG facilities resulting in damage to a ½” service line. Damage investigation provided no supplement or follow-up action taken related to the investigation. This damage was also incorrectly reflected in the CPUC quarterly data report;



**SWG Response 15:** Southwest Gas acknowledges that the tickets listed were discussed during the audit and the Company's operating divisions provided information on the resolution of each of these tickets to SED.

**SED Conclusion 15:** SED has reviewed the response from SWG and has opted not to impose a fine or penalty at this time.

## II. Areas of Concern/Recommendations

- a) Follow-up to March 30, 2018 SWG Response a): Photographs of all locates was to have been evaluated by 12/31/18; however, though SWG has implemented this requirement for locates performed by its contractor, ELM, however, SWG has not completed the evaluation for its excavation contractor, APL nor for SWG personnel. We suggest that SWG accelerate its evaluation and soon implement a procedure for APL and SWG personnel, as currently intended for ELM. As the Dig Board begins its investigations of potential GC 4216 violations, photographs of all production and excavation locates performed by or on behalf of SWG, will become crucial evidence for investigations to confirm contributing causes of failures and violations of safe excavation practices.

**SWG Response a:** Southwest Gas acknowledges SED's recommendation and agrees that photographing locates is a good practice. Building on the existing process of photographing third-party line locates, Southwest Gas will continue to work toward implementing a procedure for all line locating to be photographed, including processes for 2nd party pipeline contractors, and Southwest Gas personnel. Southwest Gas will update SED on the status of this procedure at a future semi-annual CPUC/Southwest Gas management meeting.

**SED Conclusion a:** SED accepts SWG's response.

- b) During the audit we discussed some QIR data submitted by SWG which appeared to provide incorrect details. The discussion resulted in clarifying some of the QIR terms and requirements, and which in turn helped explain the incorrect details. We believe our clarifications assisted SWG better understand the QIR requirements and, we anticipate, allow SWG to improve the accuracy of the data provided.

**SWG Response b:** Southwest Gas appreciates SED's clarification of data requirements of the Quarterly Incident Report (QIR). Based on discussions and materials SED provided to Southwest Gas during the audit, the 2019 1st and 2nd Quarter QIR reports were revised and resubmitted to SED in October. The Company will continue to work with SED to ensure the information requested is provided correctly.

**SED Conclusion b:** SED accepts SWG's response.

- c) SWG DPP, Section 6.7.1, details additional damage prevention measures undertaken to better communicate with third party excavators who may damage SWG facilities. Communications to excavators are routinely provided through SWG's Public Awareness Program (PAP). We suggest that SWG modify its PAP, Section 8.2.3, to also use data for excavators from USA notices for a period of two years or more, along with other information it uses, to identify or confirm entities who should receive excavation safety messages.

**SWG Response c:** Southwest Gas agrees with SED's recommendation and is currently working to set up a direct link between Irthnet, the Company's ticket tracking system, and its public awareness system. This will allow the Company to extract excavator mailing addresses, when provided, into its public awareness database directly from received USA notices. Once this is complete the additionally recognized excavators will begin receiving the annual Public Awareness mailings. Southwest Gas will revise its Public Awareness Plan to include this activity when a technological solution is implemented. Revisions to the Public Awareness Plan will be shared with SED through regular manual updates.

**SED Conclusion c:** SED accepts SWG's response.

- d) GC 4216.2.(a) states: *“Before notifying the appropriate regional notification center, an excavator planning to conduct an excavation shall delineate the area to be excavated. If the area is not delineated, an operator may, at the operator’s discretion, choose not to locate and field mark until the area to be excavated has been delineated.”*

Currently SWG allows its locators to proceed locating and marking its facilities, based on information on the ticket, even if no white delineations are noted as being provided on the USA Ticket and/or provided in the field by the excavator per requirements of GC 4216.2.(a). SWG representatives indicated that they believe it to be prudent, and perhaps safer, to have a locator mark its facilities since resources are already spent to have a locator arrive on the scene of a proposed excavation where white delineations are then found to not have been placed. While we can appreciate SWG's logic, we suggest that SWG initiate efforts to develop policy/procedures which balance safety while encouraging excavators to comply with 4216 requirements for excavators to provide delineations of work area before SWG proceeds with marking its facilities related to the ticket. Perhaps SWG could begin urging compliance by requiring excavators to provide delineations, when a ticket received by SWG or its contractor denotes that white delineations have not been provided, before proceeding to the field to mark that ticket.

**SWG Response d:** Southwest Gas appreciates SED's recommendation and believes its current procedures strike the appropriate balance between existing regulation and safety. Notwithstanding, Southwest Gas would support efforts by SED to develop statewide requirements consistent with its recommendations through modifications to existing state law.

**SED Conclusion d:** SED accepts SWG's response.

- e) During the inspection, SWG proposed the use of pink paint to identify areas of a subsurface facility locate with which its locators experience some difficulty in locating and marking its subsurface facilities related to a given USA ticket it receives. SWG indicates the pink paint could help isolate and denote a portion/area of an overall locate request that remains unmarked, and where an excavator should not commence with excavation activities, while enabling the excavator to commence with activity on the rest of the completed ticket.

SWG indicated its agreement with SED that the mere use of pink paint would not alter or negate GC 4216 mandates/requirements, including legal timeframes, for locating and marking its facilities. Instead, the pink paint would be intended to serve as a different color means for conveying an area requiring of markings which now would be conveyed by a positive response (verbal or field markings). Therefore, an entity that believes it suffers losses as a result of having to await late markings would, in theory, be indifferent to losses resulting from markings of pink paint for trouble locates or current processes.

We have discussed SWG's proposal for the use of pink paint with various entities, including USA North 811, DigAlert and the California Regional Common Ground Alliance which represent excavation community stakeholders; however, we have not yet received any conclusive responses for adopting, communicating and implementing the use of pink paint as proposed by SWG.

While we are not averse to SWG's proposal, we do believe that California first needs to adopt and implement this proposal, so its use is clearly understood and correctly applied by all stakeholders within the excavation community. This would reduce the possibilities for miscommunications related to the pink color markings resulting in damages to subsurface facilities. Therefore, we will continue to work with SWG and others to determine if adequate support for SWG's proposal exists and how it can be leveraged to implement it as a statewide best practice.

**SWG Response e:** Southwest Gas appreciates SED's comments and follow up on this subject and supports SED's efforts to make this a statewide practice.

**SED Conclusion e:** SED accepts SWG's response.