

PUBLIC UTILITIES COMMISSION

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October 28, 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: Southwest Gas (SWG) Damage Prevention Program Inspection

Dear Mr. Schmitz:

National statistics indicate that efforts and programs targeted towards reducing damages to subsurface facilities are providing positive results. However, it's well established that such promising improvements primarily result from effective enforcement of states' respective one-call laws and the commitment of all excavation community stakeholders to establish and follow procedures related to excavation activities detailed in Best Practices Manual of the Common Ground Alliance (CGA). Though California Government Code Section 4216 (GC 4216), known as California's one-call law, has long incorporated CGA guidance, lack of enforcement greatly contributed to California trailing national statistics in not experiencing improvements in reducing damages to subsurface facilities, especially those related to entities not mandated by state and federal regulations to have damage prevention programs.

Effective one-call laws and enforcement of these laws has long been advocated by Pipeline Hazardous Material and Safety Administration (PHMSA) and the California Public Utilities Commission (CPUC). In fact, PHMSA now evaluates states' one-call laws and those it determines as being ineffective can be negatively impacted and/or entail PHMSA actions related to enforcement. To address this issue, in 2018 the California Underground Facilities Safe Excavation Board (Board) commenced operations and began establishing procedures towards California beginning to effectively enforce compliance with GC 4216. This does not impact the authority the CPUC has always had to enforce the damage prevention programs which operators jurisdictional to the CPUC have always been required to maintain and follow per CPUC General Order 112 (currently GO 112-F).

The Safety and Enforcement Division (SED) of the CPUC supports the new statewide effort to improve excavation safety and is continuing with its inspections to closely review operator' damage prevention programs. This inspection confirms that the operator's program complies with 49 CFR Part 192, Section 192.614, referenced by GO 112-F, and assures the operator's program has procedures for directional drilling/boring that include actions to protect its facilities from dangers posed by such trenchless technologies, and includes review of the operator's quality control process for confirming the adequacy of its internal performance measures regarding persons performing locating services and quality assurance programs. Our goal is to use information learned through this program, along with information from other SED investigations and that reported by the operators through GO 112-F requirements, towards

assuring that the damage prevention efforts of all excavation stakeholders continue to be targeted appropriately.

SED conducted a General Order 112-F inspection of Southwest Gas Corporation's (SWG) Damage Prevention Programs on June 25-28, 2019.¹ The inspection included a review of the SWG current Damage Prevention Programs, some related records for the period of 2017-through present, a field review of locates, as well as SWG's response to SED's February 28, 2018 Report on its findings from its previous inspection of the SWG Damage Prevention Program.

As discussed during our inspection, our review of subsurface damage data reported to the CPUC by SWG indicates an increase in 2nd party damages (damages resulting from a party working on behalf of SWG). Our latest data indicates locate related damages spiked in 2018. We found this increase was primarily in SWG's North Division, where SWG representatives indicated issues of resource recruitment and retention greatly contributed to the increase in damages. SWG noted it is pursuing various remedies to address the increased number of damages it experienced in 2018. Our analysis of reported data indicates that when compared with other operators with USA ticket volumes higher than SWG, SWG's 2nd party damages, as a percentage of total damages, are higher.

Based on review of SWG documents, it is apparent to us that SWG has been aware of its 2nd party related damages and has worked to address this issue and seek improvements. Its recent efforts in this area appear to have had some success in improving damage reductions; however, the 2018 increase in damages due to marking issues concerns us. Therefore, we believe SWG needs to identify and evaluate additional measures, along with its current efforts, it can take to improve its long-term performance in reducing 2nd party damages. We will continue monitoring this trend and do not rule out further actions related to this matter.

SED's findings of this inspection are noted in the Summary of Inspection Findings (Summary) which is enclosed with this letter. The Summary reflects only those records and pipeline facilities that SED reviewed during the inspection.

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

If you have any questions, please contact Sunil Shori at (415) 703-2407 or by email at Sunil.Shori@cpuc.ca.gov.

Sincerely,



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

CC: Kan-Wai Tong, Sunil Shori, & Claudia Almengor – SED

Enclosure: Summary of Inspection Findings

¹ General Order 112-F was adopted by the Commission on June 25, 2015 via Decision 15-06-044.

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.
- 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.
- 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.

- 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 1st and 2nd party 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.
- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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;

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.
- 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.
- 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.
- 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.

- 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.