

CALIFORNIA PUBLIC UTILITIES COMMISSION
Safety and Enforcement Division
Gas Safety and Reliability Branch
Gas Engineering and Compliance Section

Incident Investigation Report

Report Date: 06/10/2022

Incident Number: G 20210429-3215

Utility: Southern California Gas SoCalGas

Date and Time of the Incident: 4/29/2021, 11:50:00 AM

Location of the Incident: ■■■■ Stanford St
Santa Monica ,CA
County: Los Angeles

Summary of Incident:

On April 29, 2021, at approximately 1445 hours, a third-party excavator, Brimstone Utilities, damaged a SoCalGas 16-inch steel main with a directional bore. SED's investigation found that the incident was caused by the third-party contractor misjudging the distance between their boring machine and the SoCalGas' main. However, during the emergency response, SoCalGas utilized non-emergency valves, in which one of the valves failed to close leading to a great amount of gas release and a DOT reportable incident. Since these valves are necessary for the safe operation of the distribution system, SoCalGas should have designated these valves as emergency valves. Therefore, SED finds SoCalGas in violation of GO-112-F, Reference 49 CFR, Part 192, Section 192.747(a), for failure to check and service these valves at interval 15 months, but at least once each calendar year.

Casualties: *Fatalities:* 0 *Injuries:* 0

Property Damage: \$604,268.00

Utility Facilities involved:

Pipe Material = Steel, Pipe Size = 16 (inches), MAOP = 43 (psi), Operating Pressure = 38 (psi)

Witnesses:

	<i>Name</i>	<i>Title</i>	<i>Phone</i>
1	Gordon Kuo	CPUC Investigator	N/A
2	[REDACTED]	Brimstone Utilities	([REDACTED]
3	[REDACTED]	Brimstone Utilities	[REDACTED]
4	[REDACTED]	Pipeline Safety and Complia	[REDACTED]
5	Mahmoud Intably	GSRB SED Utilities Enginee	(213) 576-7016

Evidence:

	<i>Source</i>	<i>Description</i>
1	[REDACTED]	Data Response on 5/12/21 (1+2)
2	Mahmoud Intably	Notes on Field Visit on 4/30/21
3	[REDACTED]	Initial Form 420 on 4/29/21
4	[REDACTED]	Form 7100 on 5/28/21
5	[REDACTED]	GIS Maps, Repair Orders, Photos
6	[REDACTED]	Data Response on 5/14/21
7	[REDACTED]	Data Response on 7/14/21
8	[REDACTED]	Koterra Ticket
9	DigAlert	DigAlert Ticket B210960649
10	[REDACTED]	Data Response on 7/27/21
11	[REDACTED]	Egineering Review Request 7/27/21
12	[REDACTED]	Data Response on 5/27/21
13	[REDACTED]	Data Response on 8/18/21
14	[REDACTED]	Data Response on 4/29/22
15	[REDACTED]	Data Response on 5/19/22

Observations and Findings:

On April 29, 2021, at approximately 1445 hours, a third-party excavator, Brimstone Utilities, damaged a SoCalGas 16-inch steel main with a directional bore at the address of █████ Plaza Ridge Rd, San Diego. This resulted in damage to the main pipe, a release of gas into the atmosphere and a service interruption to 243 customers for approximately 15 hours. SoCalGas personnel arrived on the scene at 1159 hours on April 29, 2021. SoCalGas personnel stopped the gas flow at 1825 hours on May 1, 2021 and restored the services on May 2, 2021 at 0800 hours. This incident was reported to the CPUC and DOT due to the gas release, cost of damages exceeding \$122k and media coverage. The DOT number for this report is 1303844.

On April 29, 2021, SED conducted a field investigation and interviewed SoCalGas' representative █████ and Area Manager █████, at the incident site. SED learned that SoCalGas' first attempts at isolating the damaged gas section by shutting in the supplying regulator north of the damage, and then pinching and utilizing valves connected to the 16-inch main. This failed and gas continued to release into the atmosphere. SoCalGas then decided to excavate control points along the 16-inch line and install a pressure control fitting. A gas migration survey was taken which determined that gas was migrating to around 2 blocks away. Southern California Edison (SCE) was contacted to shut down electricity to the area. SoCalGas also contacted the communication companies to open their communication vaults. SoCalGas dispatched 9-13 SoCalGas crews with 2 people per crew attempting to control the gas leak. Due to the gas and electricity isolations, the gas services to 249 SoCalGas' customers and electricity services to approximately 600 SCE's customers were interrupted. At the same time, SoCalGas' emergency crews continuously conducted the gas leak surveys in the neighborhood to monitor and respond to the spread of the gas migration. The gas main repair was underway during the field investigation.

The third-party contractor had a valid USA ticket, B210960649. This ticket was issued on April 8, 2021 and expired on May 4, 2021. The delineation area was marked by the contractor, and SoCalGas had properly marked their lines according to the USA ticket prior to the incident. The GIS map was correct, and no standby was needed due to the low pressure of this gas line. According to the excavator, Brimstone, all underground facilities were potholed and facilities in conflict with the excavation were exposed by excavating a 1 x 1 ft hole to monitor the directional boring machine. After potholing, the depth of the pipe was known, and thus they proceeded to bore at a depth different than of the pipe. However, due to a malfunction of the boring tool, the bore ended up 22 inches deeper than it should have been and hit the pipe.

On May 12, 2021, SED received a data response from █████ of Brimstone Utilities. According to █████, Brimstone purchased a new drill from RDO and calibrated it themselves. An RDO representative also came and calibrated the machine themselves prior to the incident. After the incident, Brimstone checked the calibration immediately on the day of the incident and it was off by 22 inches. RDO

also confirmed on May 5, 2021, that it was off by 22 inches. Thus, the machine was 22 inches deeper than they thought it was. [REDACTED] also noted that the gas main was properly marked within the ticketed area, and potholes were performed. The drill head was the tool that punctured the gas line. The cause of the malfunction is undetermined.

On May 14, 2021, SED received a data response from [REDACTED] of SoCalGas. Within this data response was the operator qualifications of both SE pipeline and SoCalGas employees who worked on the repair of the gas main. All employees were qualified during the time of the incident. Photos were also attached, showing the size of the hole, along with the repairs. Other photos include the drill which punctured the pipe, the clamps and valves used to isolate the damaged gas section. A map was also attached, listing the locations of every single pressure control fitting, valves, and stopple fittings used to control the gas. A timeline was also presented, noting which time which control points shut off the gas flow.

On July 14, 2021, SED received another data response from [REDACTED]. The 16-inch gas main had an operating pressure of 38 psig and a MAOP of 43 psig. The tools used in the repair operation were calibrated before the incident. According to [REDACTED], the plan to control the gas by engineering was to first shut in the supply regulator north of the damage, then follow up by pinching and utilizing the valves on the connected branches that were tied off the 16-inch main. Lastly, pressure control and other controllable fitting would be operated to achieve full isolation of the pipe. The reason why SoCalGas believed the first attempt failed was because the main and surrounding area is a 90-year-old system, and there are additional tie-ins which have not been recorded in the SoCalGas' GIS or other construction packages. Due to the age of the original installation, SoCalGas does not have the data or information on these tie-ins. The date of operation for the pipe involved was 1930. The pipe has coal tar wrap, at a depth of 40 inches, and has a 0.250 inch thick wall. SoCalGas planned to keep this pipe in place after the incident. During the repair for the damage, SoCalGas installed 2 pressure control fittings which could help future shut-ins of the line. [REDACTED] also stated that the excavator failed to expose the 16-inch line prior to boring. A leak repair order was also provided.

On July 14, 2021, SED received another data response from [REDACTED]. According to [REDACTED], the general flow of gas within this gas main is from north to south. However, after isolating the main from the northern source, the gas traveled from south to north. Therefore, SoCalGas was not able to stop the gas flow to the damaged section. Subsequently, SoCalGas determined that the gas main had more than one feed from various tie-ins. Going forward, SoCalGas has determined multiple locations in order to investigate possible unmarked tie-ins. SoCalGas will also explore various methods to examine these locations. This action plan will be further explained in the next data request. As of the moment, SoCalGas was not able to locate any records in GIS maps, as-builts, and drawings or service

data of these unmarked tie-ins.

On July 27, 2021, SED received another data response from [REDACTED]. [REDACTED] provided SED with an Action Plan that explained various methods to determine the tie-in locations. This includes the Request for Engineering Review along with a map of the possible locations. If tie-ins are found, they will be documented in pot-holing and sketched drawing and submitted to the GIS team to update the records. After the plan is developed and the locations are investigated, the results which are provided will be used to determine the next appropriate step to check that all unknown tie-ins are accounted for.

On April 29, 2022, SED received another data response from [REDACTED]. [REDACTED] stated that SoCalGas conducted investigations at the locations suspected of being undocumented tie-ins. However, nothing was found and the main was found to be consistent with the GIS. SCG believes that non-critical valves involved with the isolation plan may have not been fully sealed. Field investigations indicate there are no undocumented tie-ins located in the vicinity of the incident. Two new pressure control fittings have also been installed if control is needed in the future.

On May 12, 2022, SED received another data response from [REDACTED]. [REDACTED] stated that during the time of the incident, SoCalGas believed that an unknown connection was the most likely source of gas. However, after no connections were found during the investigation, it was concluded that non-critical valves did not adequately seal. During the incident SoCalGas choose not to utilize the pre-established isolation area and instead developed an ad-hoc isolation plan. The ad-hoc isolation plan affected 243 meters, while the pre-established isolation area could isolate up to 25000 meters. SoCalGas de-energized the overhead electric lines and regularly monitored the area and decided that developing a much smaller ad-hoc isolation area plan was warranted. [REDACTED] also provided two maps showing the affected areas of the ad-hoc plan verses the entire isolation area.

1 1.1 General Order (G.O.) 112-F, Reference Title 49 Code of Federal Regulations (CFR), Part 192, §192.747 (a) General states:

“(a) Each valve, the use of which may be necessary for the safe operation of a distribution system, must be checked and serviced at intervals not exceeding 15 months, but at least once each calendar year.”

SED’s investigation found that SoCalGas developed and implemented an ad-hoc isolation plan with non-emergency valves at the time of the incident instead of following its established emergency plan, e.g. using emergency (necessary for the safe operation of a distribution system) valves, to isolate the incident area expecting to minimize the number of the service interruptions. One of the non-emergency valves failed to close resulting in continuing gas flow in the 16-inch Distribution Steel Main, gas released into the atmosphere for approximately 39 hours 40 minutes, estimated cost of gas released was \$149,898 (24,983 mcf), and

service interruption of approximately 57 hours 15 minutes. In addition, SED investigation found that SoCalGas should have designated / identified these non-emergency valves as emergency valves; failure to properly identify the non-emergency valves necessary for the safe operation of the system resulted in the large amount of gas released into the atmosphere and a lengthy service interruption. Therefore, SED finds SoCalGas in violation of GO 112-F, Reference Title 49 CFR, Part 192, Section §192.747(a) for failure to check and service these valves at interval 15 months, but at least once each calendar year.

Preliminary Statement of Pertinent General Order, Public Utilities Code Requirements, and/or Federal Requirements:

General Order

GO Rule

1 GO112F

Title 49 CFR Part 192, Section 192.747(a)

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Conclusion:

Based on the investigation, SED found that the incident was caused by a third-party contractor misjudging the distance between their boring machine and a SoCalGas main. However, during the emergency response, SoCalGas utilized non-emergency valves, which were necessary for the safe operation of the distribution system and should have been designated as emergency valves. Therefore, SED finds SoCalGas in violation of GO-112-F, Reference 49 CFR, Part 192, Section 192.747(a), for failure to check and service these valves at interval 15 months, but at least once each calendar year.