

San Bernardino Blizzard Incident Investigation Report

CPUC - SAFETY AND ENFORCEMENT DIVISION
GAS SAFETY AND RELIABILITY BRANCH

Event Date: February 23, 2023 – March 4, 2024

DOT No. 1400498

CPUC SED No. G20240531-3691

CPUC Report Date:	October 21, 2025
Investigators:	Randy Holter, Mahmoud Intably
Date incident reported to CPUC	February (23), 2023 Initial; May 31, 2024
Utility:	Southern California Gas Company (SoCalGas)
Date and Time of the Incident:	02/24/2023, 0600 Hours
Location of the Incident:	Lake Arrowhead, Running Springs, Twin Peaks, Rimforest, San Bernardino County, California



California Public
Utilities Commission

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Executive Summary

Summary of Incident

On February 23, 2023, through March 15, 2023, the San Bernardino Mountain Range in the county of San Bernardino, California was hit with a powerful winter storm, labeled by the National Weather Service as a "blizzard". (The snowstorm, heavy snowfall, blizzard and winter storm will be referred to as the "incident" for the purposes of this report). These extraordinary weather events prevented local emergency personnel from conducting abnormal operation condition responses safely and delivery of emergency services. Residential services of Southern California Gas Company (SoCalGas) were affected in the cities of Lake Arrowhead, Running Springs, Twin Peaks and Rimforest, including significantly limiting Company access to the affected area. Ten mountain properties serviced by SoCalGas experienced fire, explosion or structural damage due to the heavy snowfall produced by the blizzard.

From February 23 through February 29, 2024, SoCalGas, local and state emergency personnel were unable to access the properties due to the amount of snow. The incident resulted in ten service interruptions, and in a release of approximately 300 Million Cubic Feet (MMCF) of natural gas into the atmosphere. No fatalities were reported as a result of this incident. The incident was reported to both the Department of Transportation (DOT) (DOT #1400498) and California Public Utilities Commission (CPUC) due to the release of gas and potential costs exceeding \$139,700. The total estimated cost of damages to SoCalGas facilities, including Company emergency responses, was projected to exceed \$4,076,500.

SED's investigation found that the incident was caused by an unprecedented, powerful winter blizzard, which produced more than 11 feet of snow in two weeks' time, and concluded that SoCalGas personnel performed their duties appropriately at the time of the incident. SoCalGas activated its emergency response procedures and followed its operation and maintenance, and emergency procedures during this event, and made its facilities safe. Therefore, SED did not find any violation of General Order (GO) 112-F, Reference Title 49 Code of Federal Regulations (49 CFR), Part 192 by SoCalGas.

Incident Investigation

Summary of Incident and Investigation

On February 23, 2023, through March 15, 2023, the San Bernardino Mountain Range in the county of San Bernardino, CA was hit with a powerful winter storm, labeled by the National Weather Service as a "blizzard". The initial snowfall began on February 23 through February 28, with nearly seven feet of snow accumulation. A second snowstorm began on March 2 through March 4, bringing another four feet of heavy wet snow to the mountains. The snow accumulated to such a degree during the course of these storms that all roads in the mountain communities became impassable. Only CHP-escorted vehicles were allowed access to provide food and medical care to the communities. In the community of Crestline, the roof of the only grocery store, Goodwin and Sons, was overloaded by the weight of snowfall and completely collapsed to the ground. See Appendix C for additional 2023 San Bernardino winter storm information. SoCalGas residential natural gas services were affected in the cities of Lake Arrowhead, Running Springs, Twin Peaks and Rimforest.

On March 2, 2023, SoCalGas telecommunicated a courtesy notification to the CPUC regarding potential customer service impacts due to a blizzard incident in the Mountain Pass District in San Bernardino County. During the blizzard incident period, SoCalGas had limited access to the impacted area and was not able to determine whether or not the event would meet the reporting criteria for both CPUC and DOT. There were ten service interruptions reported as the result of this incident. See Appendix D for a summary of property incidents and SoCalGas facilities involved.

In May of 2024, PHMSA became aware of increased property damage and insurance claims through a third-party agency and after further communication with SoCalGas. PHMSA requested SoCalGas to report the incident due to the release of gas volume (300 MMCF) and potential costs exceeding \$139,700. SoCalGas responded on May 31, 2024, and filed DOT Notification, NRC #1400498; filed CPUC Initial Reporting on utility operator notification system; and submitted DOT 48-hr Update Notification NRC #1400502. On June 28, 2024, SoCalGas submitted Final DOT 7100.1 Report Submitted to PHMSA and the CPUC.



Figure 1. February 23, 2023, State Highway 18 near Rim Forest, CA



Figure 2. Lake Dr., Crestline, March 15, 2023, after being opened by CalTrans.

SED's investigation found that the incident was caused by an unprecedented, powerful winter blizzard, which produced more than 11 feet of snow in two weeks' time, and concluded that SoCalGas personnel performed their duties appropriately at the time of the incident. SoCalGas activated its emergency response procedures and followed its operation and maintenance, and emergency procedures during this event, and made its facilities safe. Therefore, SED did not find any violation

of General Order (GO) 112-F, Reference Title 49 Code of Federal Regulations (49 CFR), Part 192 by SoCalGas.

Utility Facilities Involved

SoCalGas' Southeast Region, Mountain Pass, Rim Forest Distribution District: multiple (10) customer services, risers and MSAs.

Item	Address	Date of Event
1	██████████ Augusta Drive, Lake Arrowhead, CA 92352	3/4/2023
2	██████████ Ferndale Drive, Running Springs, CA 92382	3/4/2023
3	██████████ Ivy Lane, Lake Arrowhead, CA 92352	3/2/2023
4	██████████ Crest Fern Drive, Unit A, Lake Arrowhead, CA 92352	3/1/2023
5	██████████ Dover Court, Lake Arrowhead, CA 92352	3/6/2023
6	██████████ Sierra Vista Drive, Twin Peaks, CA 92391	3/3/2023
7	██████████ Rose Lane, Twin Peaks, CA 92391	3/10/2023
8	██████████ Bear Springs Road, Rimforest, CA 92378	3/2/2023
9	██████████ Heliotrope Drive, Lake Arrowhead, CA 92353	3/3/2023
10	██████████ Golf course Road, Lake Arrowhead, CA	2/24/2023

Fatalities / Injuries

No or injuries were reported at the ten SoCalGas incident properties as the result of this incident.

Property Damage

SoCalGas reported property damage due to the winter storm incident exceeding \$4,076,500 as follows:

Item	Address	Date of Event	\$ Amount: \$ SoCalGas / \$ Third- Party
1	██████████ Augusta Drive, Lake Arrowhead, CA 92352	3/4/2023	\$1,000,000
2	██████████ Ferndale Drive, Running Springs, CA 92382	3/4/2023	\$940,000
3	██████████ Ivy Lane, Lake Arrowhead, CA 92352	3/2/2023	\$500,000
4	██████████ Crest Fern Drive, Unit A, Lake Arrowhead, CA 92352	3/1/2023	\$214,000
5	██████████ Dover Court, Lake Arrowhead, CA 92352	3/6/2023	Unknown
6	██████████ Sierra Vista Drive, Twin Peaks, CA 92391	3/3/2023	\$232,000
7	██████████ Rose Lane, Twin Peaks, CA 92391	3/10/2023	\$220,000
8	██████████ Bear Springs Road, Rimforest, CA 92378	3/2/2023	\$650,000
9	██████████ Heliotrope Drive, Lake Arrowhead, CA 92353	3/3/2023	Unknown
10	██████████ Golf course Road, Lake Arrowhead, CA	2/24/2023	\$320,500

Investigators

	Name	Title
1.	Randy Holter	SED, Senior Utilities Engineer Specialist
2.	Mahmoud Intably	SED, Program and Project Supervisor

Documents Reviewed

See Appendix B.

SED Investigation Process

Reporting Requirements

GO 112-F, CFR, Part 191, Section 191.5 requires that each operator give notice in accordance with paragraph (b) of this section of each incident as defined in § 191.3. However, Part 191, Section 191.3 defines an “incident” as “*An event that involves a release of gas from a pipeline (emphasis added), gas from an underground natural gas storage facility (UNGSF), liquefied natural gas, liquefied petroleum gas, refrigerant gas, or gas from an LNG facility, and that results in one or more of the following consequences: ...*”. Since this incident involved the release of gas and the estimated costs for repairs exceeding \$139,700, SoCalGas classified the March 29, 2024, incident as DOT reportable. This incident meets the DOT Reportable Incident requirement for reporting.

SED Investigation

The purpose of this SED investigation was to determine whether there were probable violations of GO 112-F CFR Part 192 by SoCalGas that may have contributed to the incident. Furthermore, SED was interested in determining if SoCalGas was implementing corrective actions to prevent similar incidents in the future.

SED’s investigation of this incident involved interviews with witnesses, SoCalGas personnel including SoCalGas’ stand-by personnel. SED reviewed SoCalGas’ USA ticket reports, pertinent SoCalGas employee training records, SoCalGas’ Operator Qualification records, and related operation and maintenance Gas Standards and Procedures.

The Gas Safety and Reliability Branch (GSRB) of the SED began the investigation of this snow incident on May 31, 2024. July 10, 2024, PPS assigned this incident to a Senior Utilities Engineer-Specialist (SUE-Specialist) to lead the investigation. On SED updated Pipeline Safety Hazardous Material (PHMSA) on its investigation and prepared/submitted several data requests to SoCalGas.

On July 24 through 26, 2024, SED requested data from SoCalGas and conducted telephone discussions on the nature of the incident.

On August 14, 2024, SED requested additional data from SoCalGas and conducted telephone discussions to inquire about the incident.

On September 18, 2024, SED requested data by telephone regarding the fire investigation and fire report status from San Bernardino County Fire Department (SBCFD) and discussed the fire events and incident reports for each property. SED requested SoCalGas to arrange and facilitate site visits to each of the SoCalGas properties affected. SoCalGas stated that personnel would not be available for a couple of weeks, another pipeline safety staff would be sourced, and district personnel would need time to coordinate logistics for the site visits.

On October 16, 2024, a SED Senior Utility Engineer-Specialist (SUES) and a Program and Project Supervisor (PPS) visited the ten incident sites with SoCalGas' representatives. SED took photos of the properties, including those which were cleared to the dirt or foundation after fire damage. One property was rebuilt and put back in service.



Figure 3. SoCalGas removed MSA from service and locked service riser at [REDACTED] Augusta Drive, Lake Arrowhead



Figure 4. SoCalGas removed MSA from service and locked service riser at █ Bear Springs Road, Rimforest.

On July 21, 2025, SBCFD provided SED a copy of its Fire Investigations Report 23-056149 for the fire that occurred at █ Dover Court. The summary of the investigation findings states:

"This fire occurred in a single-family residence at the above address. The home was a total burn down and I was unable to determine a specific area of origin of this fire.

Witnesses that reported the fire reported that the home had exploded. I located green siding in the snow south of the home that was consistent with the siding being blown off in a lateral direction and not from a wall collapse as the walls appeared to have collapsed inward within the footprint of the home. The gas meter located on the south side of the home had melted down to the ground. The elbow before the gas meter had a crack in the threaded male portion, which, according to [SBCFD fire] suppression crews was venting and on fire before they were able to shut off the gas.

Due to the complete [burndown] of the home, the cause of this fire was undetermined. However, [it] appears to be consistent with diffuse vapor explosion. There were numerous other fires within the area after heavy snowfall with similar explosive events. I am unable to rule out the possibility of this fire being the result of a diffuse vapor explosion from a severed/ damaged gas line venting openly before reaching an unspecified ignition source."

On July 21, 2025, SBCFD provided SED a copy of its Fire Investigations Report 23-052965 for the fire that occurred at [REDACTED] Sierra Vista Dr. The summary of the investigation findings states:

"I was assigned to investigate a fire that had occurred at the above location the previous night. Due to weather conditions assigned, investigators were unable to access the location. It was reported that the exterior side of the structure near the gas meter was on fire. Upon my arrival the structure was a total loss. It appeared to suffer a low order vapor explosion and fire."

"I found the natural gas meter on the north side of the structure at the buildup level. The meter and attached piping sustained heavy fire damage. It appeared that the piping had failed under the snow load and began to leak. Subsequently natural gas leaked into the buildup/garage area. Ignition sources inside the garage Included a water heater and FAU unit. It is unknown If the heating appliances were turned on, but I found no other competent sources of ignition."

"Based on initial reports of the fire the origin is at the north exterior side of the structure near the natural gas meter, and the cause will be accidental."

The report noted that the following properties where fire occurred and the structure burned, or the structure was a total loss due to fire:

- [REDACTED] Crest Fern Drive, Unit A, Lake Arrowhead.
- [REDACTED] Ivy Lane (28475 Larchmont Ln), Lake Arrowhead.
- [REDACTED] Heliotrope Drive, Lake Arrowhead.
- [REDACTED] Ferndale Drive, Running Springs.
- [REDACTED] Dover Court, Lake Arrowhead.

Furthermore, the investigation findings stated:

"Due to the complete [burndown] of the home[s], the cause of ... fire[s] was undetermined. However, [it] appears to be consistent with diffuse vapor explosion. There were numerous other fires within the area after heavy snowfall with similar explosive events."

Incident Description

On February 23, 2023, through March 15, 2023, the San Bernardino Mountain Range in the county of San Bernardino, CA was hit with a powerful winter storm, labeled by the National Weather Service as a "blizzard". The initial snowfall was from February 23 through February 28, with nearly seven feet of snow accumulation.

A second snowstorm occurred March 2 through March 4, bringing another four feet of heavy wet snow to the mountains. These extraordinary weather events prevented state and local emergency personnel from conducting emergency procedures and delivery of emergency services. SoCalGas residential gas services were affected in the cities of Lake Arrowhead, Running Springs, Twin Peaks and Rimforest.

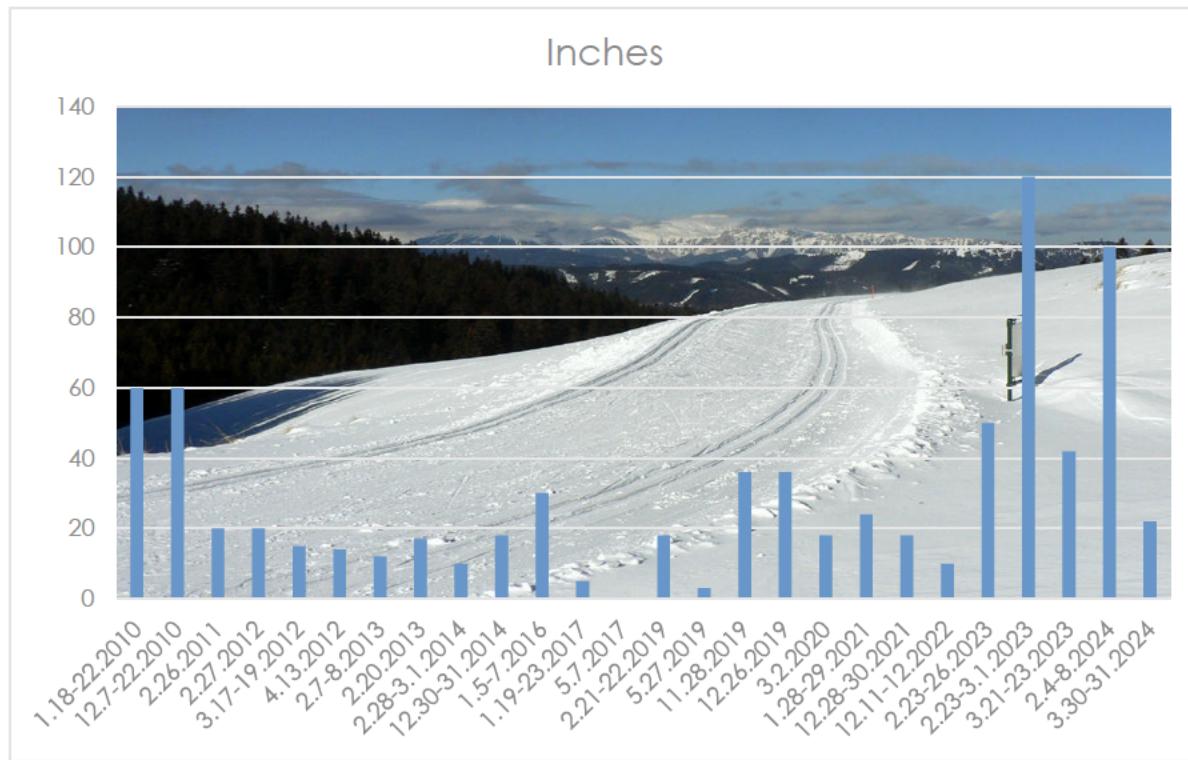


Figure 5. Comparative snowfall chart showing the unprecedented February-March 2023 snowfall - National Weather Service, San Bernardino County

There were ten (10) service interruptions reported as the result of this incident.

This incident was reported to both DOT and CPUC due to the gas release and potential costs exceeding \$139,700.

On March 1, 2023, SoCalGas' Emergency Crew (Crew) arrived on the scene at 910 Crest Fern Drive, Unit A, Lake Arrowhead. SBCFD reported to SoCalGas that there was a structure fire. There were no road closures or evacuations. There were no injuries or fatalities reported. Crews worked with SBCFD to locate MSA under five feet of snow and stop the fire at the MSA. Once the fire was out, SoCalGas' Crew conducted a post incident leak investigation at the MSA below ground and around corner of house where service would run underground and found zero gas indication.

On March 2, 2023, SoCalGas' Crew arrived on the scene at 1171 Bear Springs Road, Rimforest. There were no fires, no police, no road closures or evacuations. There were no injuries or fatalities reported. SBCFD reported to SoCalGas that customers' deck collapsed due to the weight of snow, shearing off the house line, causing damage and a release of gas. SoCalGas' Crew shut off stop cock/valve to meter and locked service. The last recorded customer service order was for 10/28/2022 regarding an inoperative furnace. SoCalGas conducted a post incident leak investigation at the MSA below ground where service would run underground and found zero gas indication.

On March 2, 2023, SoCalGas' Crew arrived on the scene at [REDACTED] Ivy Lane ([REDACTED] Larchmont Ln), Lake Arrowhead. There were no road closures or evacuations. There were no injuries or fatalities reported. SBCFD reported to SoCalGas that there was a structure fire, and it was under control in the early morning hours before and SBCFD turned off the gas service valve at the gas meter. SoCalGas conducted a post incident leak investigation at the MSA, along the SoCalGas gas service line, and found zero gas indication.

On March 3, 2023, SoCalGas' Crews arrived at [REDACTED] Heliotrope Drive, Lake Arrowhead. There were road closures and no evacuations. There were no injuries or fatalities reported. SBCFD reported to SoCalGas that there was a structure fire, and they closed the MSA service valve. SoCalGas initially could not reach the incident site due to snow, fire and MSA being buried in snow, water and debris of structure fire scene. SoCalGas' Crews returned later in day and found the service valve shut off to meter. SoCalGas conducted a post incident leak investigation at the MSA, along the SoCalGas gas service line, and found zero gas indication.

On March 3, 2023, SoCalGas' Crew arrived on the scene at [REDACTED] Sierra Vista Drive, Twin Peaks. There were road closures and one evacuation. There were no injuries or fatalities reported. SBCFD reported to SoCalGas that there was a structure fire. When SoCalGas' Crew arrived on the scene, they found downed power lines. The MSA was damaged and separated from SoCalGas' gas service riser, and the riser was flaring ignited gas. SBCFD put out fire and shut off stop cock for control. SoCalGas returned the following morning to do a clock test and investigation and found the MSA damaged by snow, ice, water and fire. No test was conducted, and the meter was removed. SoCalGas conducted a post incident leak investigation at the MSA, along the SoCalGas gas service line, and found zero gas indication.

On March 4, 2023, SoCalGas' Crews arrived on the scene at [REDACTED] Augusta Drive, Lake Arrowhead. There were no road closures nor evacuations. There were no injuries or fatalities reported. SBCFD reported to SoCalGas that there was a structure fire caused by downed power lines and SoCalGas facilities were not affected by this fire. SoCalGas conducted a post incident leak investigation at the MSA, along the SoCalGas gas service line, and found zero gas indication.

On March 4, 2023, SoCalGas' Crew arrived on the scene at [REDACTED] Ferndale Drive, Running Springs. There were no road closures nor evacuations. There were no injuries or fatalities reported. SBCFD reported to SoCalGas that there was a structure fire, causing a wall to collapse on SoCalGas' MSA, and ignited the escaping gas from the gas riser. SoCalGas' crews located and exposed and abandoned the gas service line. SoCalGas conducted a post incident leak investigation at the MSA, along the SoCalGas gas service line, and found zero gas indication.

On March 6, 2023, SoCalGas' Crews arrived on the scene at [REDACTED] Dover Court, Lake Arrowhead. There were no road closures nor evacuations. SBCFD reported to SoCalGas that there was a structure fire the night before but were currently conducting mop up due to smoldering rubble. SoCalGas Crews had to hike into the property through the snow and found SBCFD conducting fire mop-up and SoCalGas' crews closed the customer gas service valve at the riser. SoCalGas conducted a post incident leak investigation at the MSA, along the SoCalGas gas service line, and found zero gas indication.

On March 10, 2023, SoCalGas' Crews arrived on the scene at █ Rose Lane, Twin Peaks. There were no road closures nor evacuations. SBCFD reported to SoCalGas that there was a structure fire and was investigating the cause of the incident and there was no apparent gas involvement. SoCalGas observed SBCFD conducting fire mop-up and found the gas service valve in off position. SoCalGas conducted a post incident leak investigation at the MSA, along the SoCalGas gas service line, and found zero gas indication.

On May 31, 2023, SoCalGas was notified by SBCFD that a property owner at █ Golf Course Road, Lake Arrowhead, filed an insurance claim. According to SoCalGas, their facilities were not impacted by this fire (no work was performed by SoCalGas at this location).

Chronology of Incident Investigation Activities

This section provides a chronology of the investigative activities undertaken after the incident occurred on February 23, 2023, through March 15, 2023, and reported to CPUC on May 31, 2024.

March 2, 2023

SoCalGas notified a Los Angeles based CPUC SED Program and Project Supervisor (PPS) in a courtesy phone call regarding multiple San Bernardino mountain communities affected by snow-related fire incidents. At the time of the reporting, the San Bernardino emergency services agencies informed SoCalGas that all the fires appeared to be started as fire first in the house, related to pilot ignition source of vapors or electrical utility power line-related sparks and SoCalGas facilities were then affected by resulting structures fires.

May 29, 2024

At approximately 0800 hours, SoCalGas notified the CPUC SED of the San Bernardino fire incidents.

July 10, 2024

GSRB management assigned a Senior Utilities Engineer, Specialist to investigate the incident due to SoCalGas submitting a DOT report.

July 24-26, 2024

SED requested data from SoCalGas and conducted telephone discussions to inquire about the incident.

August 14, 26, 2024

SED requested additional data from SoCalGas and conducted telephone discussions to inquire about the incident.

September 18, 2024

SED requested data regarding fire investigation and fire report status from SBCFD and conducted telephone discussions to inquire about the incident.

October 16, 2024

An SED SUE-Specialist and a PPS visited the ten incident sites with SoCalGas' representatives. SED took photos of the properties which were cleared to the dirt or foundation after fire damage. One property was rebuilt and in service.

October 18, 2024

SED submitted a Data Request to SBCFD, using SBCFD incident request forms for fire incident report documents. Incident and Fire Investigation documents were not available.

November 20, 2024

SED inquired with SBCFD about receiving fire incident report documents. Documents were not available.

February 18, 2025

SED inquired by phone with SBCFD about receiving fire incident report documents. An SBCFD representative stated that due to snow and safety access, not all properties were investigated.

March 15, 2025

SED reviewed SoCalGas documents from data request responses and site response reports.

July 16, 2025

SED submitted investigation data requests to SBCFD. Three inspection reports were available but one was discontinued due to incident site restrictions prohibiting delayed access within the required site and physical evidence policy of the County. SED submitted a new form for the remaining two incident investigation reports.

July 21, 2025

SBCFD sent SED two Fire Investigations Reports SBCFD provided Fire Investigations Report 23-056149 (I-03062023-529) for a fire occurring at █ Dover Court, and 23-052965 (I-03032023) for a fire occurring at █ Sierra Vista Dr. Per conversation with SBCFD, Fire Investigations for remaining SoCalGas snow-fire incident affected services were suspended indefinitely due to extended snow conditions and site inaccessibility.

August 1, 2025

SoCalGas responded to data request DR-10, providing Gas Standard (GS) 185.0001 published copies for 2022 and 2023.

October 17, 2025

SoCalGas provided SED documents regarding SoCalGas' DIMP efforts and Corrective Actions related to the 2023 Arrowhead San Bernardino blizzard Snowstorm event. SED reviewed request responses and site response reports.

Findings and Corrective Actions

SED's Code Evaluation for SoCalGas' Procedures:

Pertaining to SoCalGas, GO 112-F, 49 CFR, Part 192, §192.605(a) states:

“General. Each operator shall prepare and follow for each pipeline, a manual of written procedures for conducting operations and maintenance activities and for emergency response. For transmission lines, the manual must also include procedures for handling abnormal operations. This manual must be reviewed and updated by the operator at intervals not exceeding 15 months, but at least once each calendar year. This manual must be prepared before operations of a pipeline system commence. Appropriate parts of the manual must be kept at locations where operations and maintenance activities are conducted.”

GO 112-F, Reference Title 49 CFR, Part 192, Section 192.355(a) Customer meters and regulators: Protection from damage states:

“Each meter and service regulator, whether inside or outside a building, must be installed in a readily accessible location and be protected from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated. However, the upstream regulator in a series may be buried.”

SoCalGas Gas Standard (GS) 185.0001 Meter Location

Section 3.7 states:

“Meter Set Assembly (MSA) – Consists of all pipes, fittings, regulator and meter/Meter Transmitter Unit(MTU) between the service valve on the riser and the customer’s house line.”

Section 4.1.7. states:

“Gas meter locations impacted by snow and/ or ice for new installations and/ or meter relocation requests.

4.1.7.1. Gas meters should be located such that it limits the potential damage from

*falling ice, snow, snow accumulation and other objects. Preferred locations
include but not limited to:*

4.1.7.1.1. Locate the MSA on a wall beneath the gable end, forward sloping or hipped roof.

4.1.7.1.1.1. Fully locate the MSA within the roof’s overhang (eaves).

4.1.7.1.1.2. Center the MSA as practicable within the roof’s overhang (eaves).”

SoCalGas notified its customers receiving gas service in San Bernardino Mountain communities (snow areas), of the safety risks associated with snow/ice accumulation on its above ground pipeline facilities in accordance with PHMSA Advisory Bulletin ADB-2016-03. SoCalGas provided multiple samples from 2022, 2023, 2024.

PHMSA Advisory Bulletin (ADB-2016-03), Purpose:

To remind owners and operators of the need to:

- (1) monitor the potential impact of excessive snow and ice on these facilities; and*
- (2) inform the public about possible hazards from snow and ice accumulation on regulators and other pipeline facilities.*

SoCalGas GS 185.0001 Meter Location, Section 4.7 addresses item 1 in ADB-2016-03.

In December 2024, SoCalGas notified its customers in areas subject to heavy snow fall or abnormal icy weather by emailing its “Natural Gas Meter Maintenance and Safety During Cold Weather” customer advisory pamphlet.

SED's Findings

SED's investigation found that the incident was caused by an unprecedented, powerful winter blizzard, which produced more than 11 feet of snow in two weeks' time, and concluded that SoCalGas personnel performed their duties appropriately at the time of the incident. SoCalGas activated its emergency response procedures and followed its operation and maintenance, and emergency procedures during this event, and made its facilities safe. Therefore, SED did not find any violation of General Order (GO) 112-F, Reference Title 49 Code of Federal Regulations (49 CFR), Part 192 by SoCalGas.

SED's Recommendations

Recommendation 1:

SoCalGas upgraded Gas Standard 185.0001. In the gas standard, SoCalGas should include procedures to provide customer public awareness message that includes ADB-2016-03 language and incorporate clear language stating Natural Gas Facilities in Areas Subject to Heavy Snowfall or Abnormally Icy Weather in the appropriate mountain communities.

Recommendation 2:

SoCalGas should take the appropriate steps to address the SED Finding 1. SoCalGas should ensure all Mountain Community customers receive current pamphlet addressing the safety risks from accumulated snow and ice on pipeline facilities in PHMSA Advisory Bulletin (ADB-2016-03). SoCalGas should notify customers not to allow snow to build up under residential structure's eves to prevent snow load shearing risers and gas venting between snow drifts and walls and include abating snow accumulation around SoCalGas' MSAs

Recommendation 3:

While PHMSA advisory bulletins are not directly enforceable, SED considers them as guidance, not regulations. They are issued to inform pipeline operators and the public about potential safety risks and to clarify regulatory requirements. While they don't have the force of law, they can highlight areas where operators may need to improve their practices to comply with existing regulations.

Recommendation 3:

SoCalGas should begin process of threat, assessment, etc. to implement blizzard conditions into the DIMP program. . The Rim Forest district should monitor progress and provide program measurements on how it is installing snow bars on residential sized meters to reinforce the Meter Set Assembly (MSA). SoCalGas should integrate into the SoCalGas the DIMP program in association with weather related risk and assessment, a snow weighting factor and installing snow bars for snow built up on MSAs.

SED's Observations

This section details two (2) observations SED made over the course of the investigation. SED will follow-up and monitor the progress of SoCalGas' proposed corrective actions.

Observation 1:

SoCalGas provided gas standard 185.0001 MSA Standard Designs and Selection Chart. The document was published on June 3, 2021, and reviewed for compliance on September 12, 2022. Gas standard 185.0010 MSA Standard Designs and Selection Chart was published on May 12, 2022, and reviewed for compliance on September 14, 2023. These standards comply with Federal, State and local ordinances to determine safe and accessible meter locations for reading and servicing meter.

Observation 2:

SoCalGas' Marketing Communications provided an email regarding MSA Snow Safety to San Bernardino Mountain communities, during the customer billing month of December of 2023. This e-pamphlet conforms to PHMSA-2016-0013 docket, Advisory Bulletin (ADB-2016-03), Dangers of Abnormal Snow and Ice Build-up on Gas Distribution Systems, to remind owners and operators of the need to monitor the potential impact of excessive snow and ice on these facilities; and inform the public about possible hazards from snow and ice accumulation on regulators and other pipeline facilities.

SoCalGas' Public Awareness and Natural Force Threat Implementations

These are the steps SoCalGas has taken to predict extreme weather conditions, inform customers, remediate known service riser deficiencies and protect against potential riser damage when heavy snow and blizzard occur in the future.

Action 1:

- **Public Communication/Website Updates:**

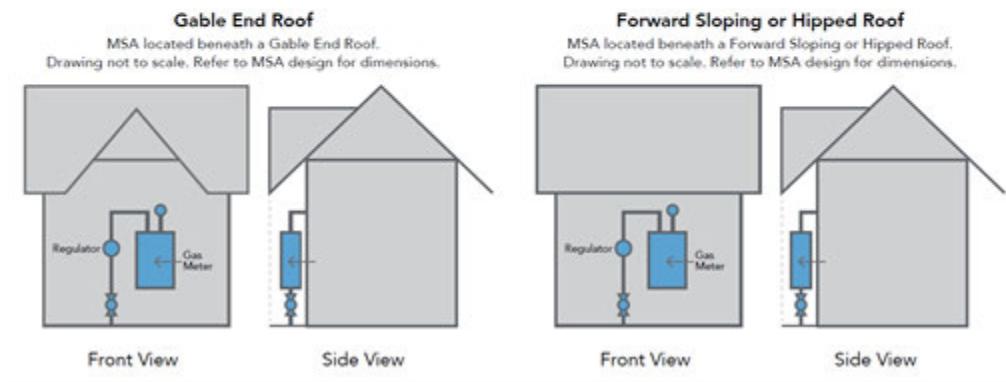
- A Snow Safety advisory was added to the SoCalGas external-facing website: [Natural Gas Meter Safety Tips for Cold Weather | SoCalGas](https://www.socalgas.com/safety/gas-meter-safety-tips-for-cold-weather).

- Snow-related guidance was added to the public-facing [Gas Service Guidebook](#), on SoCalGas.com.

4.4.3.1 Meter Locations Impacted by Snow

- This applies to all MSA locations above 3,500 ft in elevation or where snow or ice buildup can be expected.
- Gas meters should be located such that potential damage from falling ice, snow, snow accumulation and other objects is minimized. Preferred locations include, but are not limited to:
 - Locate the MSA on a wall beneath the gable end, forward sloping or hipped roof.
 - Fully locate the MSA within the roof's overhang (eave).
 - Center the MSA as practicable within the roof's overhang (eave).
- For other recommendations, please contact SoCalGas planning department.

FIGURE 15 - Meter Locations — Impacted by Snow



Action 2:

- **Customer Outreach/Social Media Engagement:**
 - An email was distributed in December to customers residing above 3,000 and elevation of feet. A similar communication is planned for winter 2025–2026. **Appendix E** contains a copy of last year's communication.
 - A post was published on SoCalGas' X account on February 4, 2025:
 - <https://x.com/socalgas/status/1886822121323815032>



Action 3:

- **Policy Enhancement:**
 - Customer Service Field Policy 185.0001 (*Meter Locations*) was updated in January 2025 to include Section 4.1.7, which provides guidance for meter installations and relocations impacted by snow and ice:
 - 4.1.7. Gas meter locations impacted by snow and/or ice for new installations and/or meter relocation requests.
 - 4.1.7.1. Gas meters should be located such that, it limits the potential damage from falling ice, snow, snow accumulation and other objects. Preferred locations include but not limited to:
 - 4.1.7.1.1. Locate the MSA on a wall beneath the gable end, forward sloping or hipped roof.
 - 4.1.7.1.1.1. Fully locate the MSA within the roof's overhang (eaves).
 - 4.1.7.1.1.2. Center the MSA as practicable within the roof's overhang (eaves).
 - SoCalGas provided 185.0001 MSA Standard Designs and Selection Chart. This standard complies with Federal, State and local ordinances to determine safe and accessible meter locations for reading and servicing meters. The document was published on June 3, 2021, and reviewed for compliance on September 12, 2022.

Action 4:

- **Infrastructure Improvements/Equipment Evaluation:**

- SoCalGas stated that the Rim Forest Distribution District is now installing support bars to the houseline on the MSA to protect against damage from heavy snow. This strengthens the MSA during falling snow to prevent the service line connecting nipple and customer side house line from being sheared off in heavy snow conditions. The integrity of the riser and MSA pipe is key to eliminating gas build-up under snow more than five feet that accumulates under the eaves of residential structures.
- SoCalGas Rim Forest Distribution district is now installing snow bars on residential sized meters to reinforce the Meter Set Assembly (MSA) during projects that require the rebuilding/resetting of gas meters in the mountainous areas. See **Appendix F** for an example of a snow bar installation across the service and custom side of the MSA.
- The SoCalGas Materials and Equipment Lab conducted static load and impact testing on the *PlastiPanel*® MSA Snow Shelter to assess its suitability for snow-prone areas like Lake Arrowhead. Additional evaluations, including UV exposure testing, are recommended. Further research is needed regarding tariff rules, customer responsibilities, and funding.

Action 5:

- **Risk Assessment:**
 - A third-party contractor was engaged to assess the likelihood of a repeat event during the 2025–2026 winter season. The evaluation indicated a lower-than-average risk and therefore SoCalGas has assessed that DIMP implementation measures are not needed at this time to address snow risk. Currently, SoCalGas is installing snow bars on residential sized meters to reinforce the Meter Set Assembly (MSA) during projects that require the rebuilding/resetting of gas meters in the mountainous areas. See Action 4, above and **Appendix G**.

Conclusion

SED's investigation found that the incident was caused by an unprecedented, powerful winter blizzard, which produced more than 11 feet of snow in two weeks' time, and concluded that SoCalGas personnel performed their duties appropriately at the time of the incident. SoCalGas activated its emergency response procedures and followed its operation and maintenance, and emergency procedures during this event, and made its facilities safe. Therefore, SED did not find any violation of General Order (GO) 112-F, Reference Title 49 Code of Federal Regulations (49 CFR), Part 192 by SoCalGas.

Since the 2023 winter blizzard incident, SoCalGas has taken steps to predict extreme weather conditions, inform customers, remediate known service riser deficiencies and protect against potential riser damage when heavy snow and blizzard occur in the future.

SED recommendations: SoCalGas should review its customer notification message in its procedures to ensure severe winter storms include abating snow accumulation around SoCalGas' MSAs; SoCalGas should notify customers to not allow snow to build up under residential structure's eves to prevent snow load shearing risers and gas venting between snow drifts and walls; SoCalGas should include procedures to provide customer public awareness message that includes ADB-2016-03 language and incorporate clear language stating Natural Gas Facilities in Areas Subject to Heavy Snowfall or Abnormally Icy Weather in the appropriate mountain communities; and SoCalGas should plan to review the snow threat weighting on customer MSAs again in two years to evaluate if the risk increased and to identify and implement DIMP program measures to address the increased threat.

Appendices

Appendix A: Glossary of terms

ACRONYM/ABBREVIATION	DEFINITION
AOC	Abnormal Operating Conditions
CFR	Title 49 - Code of Federal Regulations
GO	General Order – California Public Utilities Commission.
GSRB	Gas Safety and Reliability Branch
MSA	Meter Set Assembly
OQ	Operator Qualification
PHMSA	Pipeline & Hazardous Materials Safety Administration
SBCFD	San Bernardino County Fire Department, operating under the parent agency, San Bernardino County Fire Protection District
SoCalGas	Southern California Gas Company
SED	Safety and Enforcement Division
DOT	Department of Transportation

Appendix B: Documents Reviewed

1.	SoCalGas USRB Gas Incident Report to SED, GSRB 05/31/2024
2.	SoCalGas PHMSA 7100.02 Filing Form, 9/20/2024
3.	SED Site Area Pictures, 10/16/2024
4.	SoCalGas's Response to SED's Data Requests, 5/31/24-7/4/25

Appendix C: 2023 San Bernardino County Blizzard Event Emergency Responses

Emergency Operations: On Thursday, February 23, 2023, the National Weather Service predicted a large storm and issued blizzard warnings. Multiple news outlets reported this information. Local mountain commands (Big Bear and Twin Peaks) prepared their personnel, equipment, and stations for the potential of extended operations with emergency staffing plans.

On February 28, 2023, at about 1200 hours, the IMT opened at the San Bernardino County Sheriff's Aviation Division. The San Bernardino County Fire Protection District, working with the SBCFD tactical unit, was the overall incident command facilitator. Members from CAL FIRE, numerous other fire agencies, State of California Office of Emergency Services (CAL-OES), San Bernardino County Emergency Office Command (EOC), and representatives from California Highway Patrol (CHP), Caltrans, Southern California Edison, and Southern California Gas were also present. The San Bernardino County Sheriff's Department was represented by members of the Emergency Operations Division (EOD), the Twin Peaks Sheriff's Station, and the Mobile Field Force (MFF).

The San Bernardino Mountain Command Post (MCP) operated as a unified command between the SBCFD and the San Bernardino County Sheriff's Department. The MCP was located at County Fire Station 91 in Lake Arrowhead and was staffed by several battalion chiefs, who managed separate groups, and two firefighters.

Road Closures: Beginning February 25, 2023, all state highways leading into the mountain communities were closed to the public due to heavy snow accumulations. Over the following days, heavy snow continued to fall causing all roads to be nearly impassable. Escorts of delivery trucks carrying gasoline and groceries were planned and executed by CHP, Caltrans, County Roads, and SBSD. This continued throughout the event.

On March 6, 2023, a meeting was held with Caltrans, CHP, Chief Munsey, and Sheriff Dicus. It was decided to open the roadways at 1600 hours to residents only. A modified Mobile Field Force (MFF) team was activated to assist CHP checking resident status at checkpoints on Highways 18 and 330. The MFF team also enforced parking regulations and assisted Public Works, Southern California Edison, and Southern California Gas with neighborhood access.

Rescues: Residents who needed or wanted to be removed from the mountain communities were accessed by a snowcat and were transported to a patrol unit with chains. They were taken to Sheriff's Department transportation vans staged at the 4000 ft. elevation point on Highway 18. Residents were then transported off the mountain to a staging point for family/friend reunification or taken to the Red Cross shelter at Redlands East Valley High School. This method of removing people continued during all operational periods. Overall, approximately 269 residents were rescued during this event.

Deaths: During February 23 through March 8, 2023, there were a total of 13 deaths reported in the San Bernardino Mountain Communities of Wrightwood, Big Bear, and the Twin Peaks areas combined. The County Coroner's Division performed investigations (including toxicology) on nine deaths, only one death was found to be directly storm-related. Four of the 13 deaths were people who

were either in hospice care or under doctor's care at a medical facility. None of the deaths occurred as a result of the ten reported structure incidents occurring in this report.

Appendix D: Overview of Incidents

Item	Address	Date of Event	SoCalGas Facility Involvement	Description of the MSA Location	Service Installed Date	EFV Installed	Type of Damage to SoCalGas Facilities	\$ Amount: \$ SoCalGas / \$ Third-Party
1	████████ Augusta Drive, Lake Arrowhead, CA 92352	3/4/2023	No involvement	Right Front (RF)	8/1989	No	Damage was created by downed electrical line	\$1,000,000
2	████████ Ferndale Drive, Running Springs, CA 92382	3/4/2023	MSA Damaged by snow	Right Middle (RM)	2/1974	No	Service was abandoned.	\$940,000
3	████████ Ivy Lane, Lake Arrowhead, CA 92352	3/2/2023	MSA damaged by snow and houseline damaged	Back Middle (BM)	2/1967	No	MSA damaged by snow and houseline damaged	\$500,000
4	████████ Crest Fern Drive, Unit A, Lake Arrowhead, CA 92352	3/1/2023	MSA damaged by snow	Left front under deck	12/2002	No	MSA damaged by snow	\$214,000
5	████████ Dover Court, Lake Arrowhead, CA 92352	3/6/2023	MSA damaged by snow	Right Middle (RM)	12/1948	No	Service valve closed	Unknown
6	████████ Sierra Vista Drive, Twin Peaks, CA 92391	3/3/2023	MSA damaged by snow	N/A	6/1941	No	Fire caused by downed electrical lines	\$232,000

Item	Address	Date of Event	SoCalGas Facility Involvement	Description of the MSA Location	Service Installed Date	EFV Installed	Type of Damage to SoCalGas Facilities	\$ Amount: \$ SoCalGas / \$ Third-Party
7	[REDACTED] Rose Lane, Twin Peaks, CA 92391	3/10/2023	Houseline damaged	Left Middle (LM)	8/1982	No	No Gas Co. involvement. Service valve closed	\$220,000
8	[REDACTED] Bear Springs Road, Rimforest, CA 92378	3/2/2023	Houseline damaged	Right Middle (RM)	7/2013	Yes	No Gas Company involvement	\$650,000
9	[REDACTED] Heliotrope Drive, Lake Arrowhead, CA 92353	3/3/2023	MSA damaged by snow	Left Middle (LM)	9/1993	No	No Gas Company involvement	Unknown
10	[REDACTED] Golf course Road, Lake Arrowhead, CA	2/24/2023	N/A	Front Left (FL)	10/1963	No	N/A	\$320,500

Appendix E: SoCalGas Snow Safety – Natural Gas Meter Maintenance and Safety During Cold Weather Brochure

This brochure is mailed out to mountain communities, starting in the fall of each year. An email was distributed in December to customers residing above 3,000 feet. A similar communication is planned for winter 2025–2026. Below is a copy of last year's written communication. (A copy of the complete document may be found in the adjoining SED folder “G20240531-3691-DOT1400498-RH3-Final Appendixes”).

Natural Gas Meter Maintenance and Safety During Cold Weather

Your natural gas meter is designed and tested to work safely in various climate conditions. SoCalGas performs routine inspections on natural gas meters for our customers. However, there are times when external conditions or extreme weather can impact the operation or integrity of your meter. Here are some safety tips for keeping your natural gas meter safe.

Maintain Clear Surroundings

Year-round, keep the area in front of and around your natural gas meter clear. This includes bushes, clutter, debris, dirt, and other obstructions.

Indoor Gas Meters

For indoor natural gas meters, ensure ventilation points are not obstructed, and any source of ignition or heat is at least three feet away from the meter.

Winter Care

During the winter months, if you can, and it is safe to do so, we encourage you to clear the snow away from your natural gas meter with a broom or brush - never use a shovel or hard object to remove the snow from the meter, as this risks damaging the meter.

Snow Removal Awareness

Either remove snow or shelter gas meters from snow accumulation. When clearing snow from roofs or roads, ensure it doesn't fall or pile up near the meters.

[More Winter Tips](#)

How to Recognize a
Natural Gas Leak

Look

If you see a damaged connection to a natural gas appliance, dirt/water blowing into the air, a dry patch of grass, fire or an explosion near a pipeline.

Listen

If you hear unusual sounds like hissing or whistling.

Smell

If you smell the distinctive odor of natural gas.

Some persons may not be able to smell the odor because they have a diminished sense of smell due to a respiratory illness or another physical condition, olfactory fatigue (normal, temporary inability to distinguish an odor after prolonged exposure to it), or because the odor is being hidden by other odors present. In addition, certain pipeline and soil conditions can cause odor fade (the loss of odorant so that it is not detectable by smell).

If You Smell Natural Gas or Suspect a Leak

IMMEDIATELY EVACUATE THE AREA.

CALL SoCalGas at 1-800-427-2200 from a safe location.

CALL 911 promptly, from a safe location, if there is damage resulting in a natural gas leak that may endanger life, cause bodily harm or property damage.

DO NOT smoke or light a match, candle or create any other flame.

DO NOT turn electrical appliances or lights on or off, operate motorized equipment or vehicles, or use any device that could cause a spark.

DO NOT attempt to control the leak or repair a damaged pipe or meter. Natural gas leaking from a plastic pipe can create static electricity that can ignite the natural gas.

REPORT any pipeline damage by calling SoCalGas immediately at [1-800-427-2200](tel:1-800-427-2200). Even a slight gouge, scrape or dent to a pipeline may harm the integrity of the pipe or cause a dangerous leak in the future.

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Appendix F: SoCalGas Snow Safety – Infrastructure Improvements/Equipment Evaluation

Rim Forest district is now installing snow bars on residential sized meters to reinforce the Meter Set Assembly (MSA) during projects that require the rebuilding/resetting of gas meters in the mountainous areas. See picture below for an example of a snow bar installation across the service and custom side of the MSA. (A copy of the complete document may be found in the adjoining SED folder “G20240531-3691-DOT1400498-RH3-Final Appendixes”).



Appendix G: SoCalGas Snow Safety – Risk Assessment

SoCalGas hired a third-party contractor to assess the likelihood of a repeat event during the 2025–2026 winter season. The evaluation indicated a lower-than-average risk. See notes below and G20240531-3691-DOT1400498-RH3-Final Appendixes folder, Appendix G for the full weather consultant report. (A copy of the complete document may be found in the adjoining SED folder “G20240531-3691-DOT1400498-RH3-Final Appendixes”).

2025-2026 Winter Outlook

For
Southern California Gas Company



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