

BULLETIN

NO: 23-224
DATE: December 27, 2023
TO: All Personnel
FROM: David Gerboth, Assistant Fire Chief, Emergency Operations
SUBJECT: Operations Manual Revision #23-23, SI 2.34 Natural Gas Emergencies

Attached to this bulletin please find Operations Manual Revision 23-23, Standard Instruction 02, Section 34 Natural Gas Emergencies. All company officers are directed to ensure that personnel under their command are briefed on these revisions and comply.

This is a policy revision that updates operations on natural gas emergencies. The significant changes are highlighted.

The Operations Manual will be updated electronically in the "M" drive and in the 'Quick Links' section of TargetSolutions.

Any questions regarding this policy can be directed through your chain of command.

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I. PURPOSE

The purpose of this policy is to provide operational guidelines to natural gas emergencies.

II. SCOPE

This policy shall apply to all sworn San Diego Fire-Rescue Department (SDFD) personnel, excluding Lifeguard personnel

III. AUTHORITY

The Fire Chief authorizes this policy.

IV. POLICY

A. Standard Operating Procedures – Natural Gas Emergencies

1. Odor of natural gas/natural gas leak inside of a structure
 - i. Personnel shall wear full structural PPE
 - ii. The Incident Commander (IC) will determine the need for any additional resources
 - iii. Isolate and shut off the gas leak if it can be done safely at the appliance or at the consumer gas meter
 - iv. Request SDG&E and *NEVER* turn the gas back on
 - v. Monitor the atmosphere with SDFD Combustible Gas Detectors and determine the need for ventilation or evacuation. Intrinsically safe mechanical blowers or natural ventilation should be used due to the high flammability of natural gas
 - vi. Do not enter a structure if the atmosphere is at 10% or greater of the Lower Explosive Limit (LEL) (.45%)
2. Large Diameter Gas Leak (gas line is broken and blowing)
 - i. Personnel shall respond in full structural PPE
 - ii. The first in fire officer shall assume IC, investigate and attempt to determine the source
 - iii. If a large diameter gas leak is confirmed (i.e. gas line on the supply side is broken and blowing), the IC should:
 - a) Attempt to isolate the gas leak, deny entry and eliminate/control ignition sources
 - b) Immediately notify SDG&E there is a gas line that is broken and blowing and request an ETA for the SDG&E control crew
 - c) Request law enforcement units for traffic control/evacuations
 - iv. The IC should determine evacuation distances and staging locations based on:

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- a) The Emergency Response Guidebook (ERG)
 - b) The extent of the emergency
 - c) Combustible gas detector reading
 - d) Consultation with SDG&E
- v. NEVER attempt to shut off the gas leak on the supply side of the gas line. Supply lines may only be shut off by SDG&E
- vi. Identify a water supply. Unless needed, it is not recommended to connect to a water supply should the incident expand or if units require rapid egress
- vii. Use a SDFD Combustible Gas Detector to:
- a) Monitor the atmosphere around the gas leak and establish the extent of the natural gas plume using a reading of 10% or greater of the LEL (.45%) to determine the extent of the plume
 - b) Monitor the atmosphere in adjacent buildings/areas using a reading of 10% or greater of the LEL (.45%) to determine whether the building/area should be evacuated
- viii. Determine the need to evacuate or shelter in place based on readings obtained by atmospheric monitoring with SDFD Combustible Gas Detectors.
- ix. The first-in Battalion Chief *shall*:
- a) Assume IC
 - b) Determine the amount of SDFD resources needed for mitigation
 - c) The determination will be made after SDFD Combustible Gas Detectors have been used to determine the extent of the gas plume at the leak site and gas levels in adjacent buildings/areas
 - d) A SDFD Combustible Gas Detector reading of 10% or greater of the LEL (.45%) will be used as a guide in determining the amount of SDFD resources that are needed
 - e) The decision to request or retain resources should be made with input from the SDG&E Supervisor and based on the following factors:
 - 1) Life safety assessment
 - 2) Location of the incident
 - 3) Gas plumbing
 - 4) Exposures
 - 5) Possible gas migration into structures through conduit, sewer lines, storm drains, or underground trenches
 - 6) Evacuations
 - 7) Any other safety factors deemed necessary to retain resources
 - 8) This decision should be made with the input of the SDG&E supervisor

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- x. Sufficient SDFD resources determined by the IC shall remain at the scene until the gas leak has been stopped by SDGE and it is determined that the area and buildings are safe to re-enter.
3. Natural Gas Leaks on Fire
- i. If the gas is burning on the supply side of the gas line, do not attempt to extinguish the gas burning from the leak. Instead, evacuate the affected area, protect exposures, and wait for SDG&E to shut off the gas line.
 - ii. If the gas is burning on the consumer side of the gas line (after the gas meter), the first attempt to shut off the gas locally (at the appliance), and if that is not possible then shut it off at the consumer gas meter. If both of those fail, use a fog stream to keep surrounding combustibles wet and await SDGE to shut off the gas.

V. **DEFINITIONS**

- A. **Broken and Blowing:** Terminology used to describe a natural gas line that is damaged on the supply side of the gas meter. These high-pressure natural gas lines can range from a hissing sound to a jet engine-type sound during the release of the product indicating a “broken and blowing” natural gas line. [RETURN](#)
- B. **Large Diameter Gas Leak:** Any natural gas leak that is on the supply side of the gas meter and the gas line can be described as broken and blowing. [RETURN](#)
- C. **Natural Gas:** A colorless, odorless, and highly flammable hydrocarbon consisting primarily of methane (97%) and ethane. The natural gas carried in SDG&E gas lines is odorized to aid in detection of leaks. Natural gas is lighter than air with a specific gravity range of .60 to.70. [RETURN](#)