



Standard Operating Guideline	
SOG Name:	Natural Gas Incidents
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Standard:	TBD
Guideline Owner:	Emergency Operations – Special Operations
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PURPOSE: Fire Department units may encounter natural gas in a variety of situations and incident types, each presenting a different set of hazards and problems. The following guideline will present an approach that will be applicable in the majority of situations dealing with natural gas emergencies but does not replace good judgement and experience in dealing with any particular incident.

A. ORGANIZATION

SECTION 1

Natural gas (methane) itself is non-toxic; however, it displaces oxygen and can result in asphyxiation if in a confined space.

SECTION 2

Natural gas has flammable limits of approximately 4%-15% in air. Flammable gas ranges can only be determined by a combustible gas instrument. The vapor density of natural gas is 0.8, lighter than air. Expect natural gas to rise rapidly. The CAS number is 74-82-8. Auto ignition temperature 1400 F. Flash point -369F.

SECTION 3

Burning natural gas should normally not be extinguished, since this would change the situation from a visible hazard to an invisible hazard with explosive potential. Fires should be controlled by eliminating the fuel source.

SECTION 4

Underground natural gas leaks may permit gas to travel considerable distances before entering a structure through the foundation, around pipes, or through void spaces. Therefore, take appropriate steps to check all potential exposed structures and areas.

B. PERSONNEL SAFETY**SECTION 1**

Establish Incident Command (See SOG #100.1). The Fire Department is the lead agency at gas leak and gas explosion incidents, and shall be in charge at all times.

SECTION 2

The number of exposed personnel will be kept to an absolute minimum at all times.

SECTION 3

A Limited Access Zone (Hot Zone) shall be established and maintained around any suspected gas leak. *Fire Line* tape should be used to identify the Limited Access Zone.

SECTION 4

All personnel working in the vicinity of a known or suspected gas leak shall wear full protective clothing with SCBA. (See SOG #120.1)

SECTION 5

Personnel working in a suspected ignitable atmosphere (i.e. attempting to shut off a gas line) shall use Structural Firefighting clothing with SCBA and shall be protected by a staffed 1.75" hose line.

SECTION 6

In all cases, Fire Department units shall take whatever actions necessary to provide for life safety and property conservation.

C. INCIDENTS INVOLVING A REPORTED GAS LEAK - NO FIRE**SECTION 1**

All reports of gas leaks shall be approached as potentially dangerous situations and handled by recognized standards and practices.

SECTION 2

If gas company personnel are on the scene of the incident, the first Fire Department unit (Incident Commander) is responsible for establishing an effective interaction between both agencies.

SECTION 3

Gas company personnel shall be responsible for locating and eliminating leak sources. Gas company personnel and/or the Hazardous Materials Team shall obtain a sufficient number of gas concentration readings in order for the Incident Commander to evaluate the hazard and take the appropriate actions.

SECTION 4

The following shall be used as a basic guide for handling natural gas incidents:

1. A minimum number of personnel should be allowed to enter the area to size-up the situation while any additional units will stage in a location out of the potentially dangerous zone.
2. Evacuate any civilians in the area of the escaping gas.
3. Attempt to locate the source of the gas and any shutoff devices available.
4. Gas leak situations within a building where the source of the leak is unknown or uncontrolled shall have the gas shut off at the meter. The Incident Commander shall ensure the meter is tagged and locked out until repairs are complete. (This is most easily accomplished with the cooperation of the gas company at the scene).
5. If there is any indication of gas accumulating within a building, evacuate civilians from the structure and control any ignition sources. Shut off electrical power from an outside breaker. Check for explosive concentrations with a combustible gas indicator if there is any suspicion of accumulation within the structure.
6. If gas company personnel must excavate to shut off a leak, provide stand-by protection with a charged 1.75" hand line and two firefighters in full protective clothing and SCBA.

D. INCIDENTS AT WHICH AN EXPLOSION HAS OCCURRED

SECTION 1

Until it can be determined that the area is safe from the danger of further explosions, all civilians shall be evacuated and the number of Fire Department and other emergency personnel in the area shall be kept to the minimum number necessary to stabilize the situation.

SECTION 2

The following shall be used as a guideline for handling incidents involving an explosion possibly produced by natural gas:

1. Do not rely on gas odor. Use combustible gas indicators to check all suspected areas. Both gas company personnel and the Hazardous Materials Team have combustible gas indicators for this purpose.

2. Check all areas systematically using combustible gas indicators. Start outside of the IDLH zone, and move into the area until readings indicate detectable concentration. Map the readings for the affected area.
3. If a gas concentration is encountered inside, adjacent to, or underneath any building, secure all possible sources of ignition in the affected area. Cut electricity from outside the affected area to avoid arcing. Ventilate buildings with explosion proof equipment or natural ventilation only.
4. The use of ground probes is essential to evaluate potential underground leaks. When gas company personnel are on the scene, ground probe readings and locations must be coordinated. Time, location, and concentration should be recorded for each probe, and subsequent readings should be taken from the same holes when possible.
5. The Incident Commander shall establish an effective interaction and coordination between gas company personnel and the Fire Department. Gas company personnel are responsible for locating and eliminating leaks in the gas system. These personnel should be directed to the Incident Commander upon arrival on the scene. In most cases, a company officer with a portable radio will be required to supervise their on-site operations.
6. The Incident Commander must ensure the stability of the structure. If further collapse is possible, the Technical Rescue Team shall be called to provide shoring, cribbing, or other means of stabilizing the structure.

(Signature on File)

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DOTHAN FIRE DEPARTMENT