

SUBJECT: NATURAL GAS INCIDENTS**SECTION:** 303.09**REVISED:** FEBRUARY 12, 2008**PAGE(S):** 3

PURPOSE

The purpose of this document is to establish a guideline on the response to natural gas incidents by the Reading Fire Department.

PROCEDURE

Fire Department units may encounter natural gas in a variety of situations and incident types with each presenting a different set of hazards and problems. The following guidelines present approaches that will be applicable in the majority of situations, but do not replace good judgment and experience on dealing with any particular incident.

Natural gas is much lighter than air and will dissipate rapidly in the outside environment. Inside buildings however, it tends to pocket, particularly in attics and dead air spaces. The flammable limits are approximately 4% to 15% in air. Natural gas itself is nontoxic, however it displaces oxygen and can result in asphyxiation if in a confined space. A combustible gas instrument can only determine the presence of a combustible gas, not the gas ranges and oxygen contents.

Burning natural gas should not normally be extinguished, since this would change the situation from a visible to invisible hazard with explosive potential. Stopping the flow of fuel should control fires.

INCIDENTS AT WHICH AN EXPLOSION HAS OCCURRED

Units arriving at the scene of a structure explosion must consider natural gas as a possible cause. Explosions have occurred in structures that were not served by natural gas (Underground leaks may permit gas to travel considerable distances before entering a structure through the foundation, around pipes or through void spaces), with these circumstances, the cause of the explosion may be difficult to determine.

1. Until it can be determined that the area is safe from the danger of further explosions, evacuate all civilians and keep the number of Fire Department and/or other emergency personnel (i.e. Cinergy Gas Company personnel) in the area to the minimum number necessary to stabilize the situation.
2. Do not rely on gas odor. Use combustible gas detectors to check all suspected areas.

3. Check areas systematically using combustible gas detectors. Start outside of the area of the explosion, and move into the area until readings indicate detectable concentration. Map the readings for the affected area.
4. 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 where gas is found with explosion proof equipment only.
5. The use of ground probes is essential to evaluate potential underground leaks. When Cinergy Gas personnel are on the scene, ground probe readings and locations must be coordinated. Time, location and concentration should be recorded for each probe. Subsequent readings should be taken from same holes when possible. Manhole covers should be removed if explosive levels are found.
6. Command should provide for effective interaction between Cinergy Gas personnel and the Fire Department. Cinergy Gas personnel are responsible for locating and eliminating leaks in the gas system. As industry specialists, they can provide Command with valuable assistance in the effective handling of these incidents. These personnel should be directed to Command to report their arrival, etc. In most cases, Fire Department personnel with a portable radio will be required to supervise during their on-site operations.

INCIDENTS INVOLVING A REPORTED GAS OR LEAK – NO FIRE OR EXPLOSION

Calls for "odor of gas", "gas leak", "broken gas line" and similar situations may range from minor to potentially major incidents. All of these should be approached as potentially dangerous situations.

With Cinergy Gas personnel on the scene of an incident, it should be standard procedure for the Fire Department unit to provide effective interaction between agencies. Cinergy Gas personnel shall be responsible for locating and eliminating leak sources.

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

1. Evacuate any civilians in the area of escaping gas.
2. Attempt to locate the source of the gas and any shut off devices available using a combustible gas indicator and leak detector.
3. Gas leak situations within a building where the source of the leak is unknown or uncontrolled, the gas supply shall be shut of at the meter. Command shall ensure the meter is red-tagged and locked off until repairs are complete. This is most easily accomplished with the cooperation of Cinergy.
4. If there is any indication of gas accumulating within a building, evacuate civilians from the structure and control ignition sources. Shut off electrical power from an outside breaker. Check for explosive concentrations with a structure. Ventilate using explosion proof blowers to pressurize if necessary.

5. If Cinergy Gas personnel must excavate to shut off a leak, provide stand-by protection with a charged 1-3/4" line and two firefighters in full protective equipment and SCBA.
6. Consideration must be given to the flammable limits if ventilation is being used (bringing natural gas through the explosive limits).

PERSONNEL SAFETY

All personnel working in the vicinity of a known or suspected gas leak should wear full protective clothing with SCBA's. Personnel working in a suspected ignitable atmosphere (i.e. attempting to shut off a gas line) shall USE SCBA and should be covered by a manned protective hose line. The number of exposed personnel will be kept to an absolute minimum at all times.

A safety perimeter shall be established and maintained around any suspected gas leak and "fire line" tape should be used to identify the safety perimeter when necessary.

NATURAL GAS SUMMARY

- Natural Gas is lighter than air.
- It will pocket in buildings.
- Flammable limits are 4% to 15%.
- Natural Gas displaces oxygen.
- Burning Natural Gas generally should not be extinguished.
- Turning off the flow should control fires.

RESPONSIBILITY

1. All Officers of the Reading Fire Department are responsible to comply with and ensure that personnel under their command are adequately trained, fully understand, and comply with this guideline.
2. All members of the Reading Fire Department have the responsibility to learn and follow this guideline.