NATURAL GAS RESPONSE SOG

SCOPE
This guideline shall apply to all members of the Stoney Point Fire Department and shall be adhered to by all members.

PURPOSE
The purpose of this guideline is to explain the guidelines expected by all personnel at the SPFD when carrying out fire suppression responsibilities of Natural Gas Incidents.

DEFINITIONS

SHALL - Indicates a mandatory requirement.

STANDARD OPERATING GUIDELINE (SOG) - Documents that help establish how an organization will operate and how its members are expected to carry out specific duties outlined in general terms.

GUIDELINES

Command

On all incidents a Command Post and Geographic Division will be established as soon as possible. The Command Post should be in location that will be safe and not have to be moved.

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 space. The flammable limits are approximately 4 percent to 15 percent in air. Natural gas itself is non toxic, however, it displaces oxygen and can result in asphyxiation if in a confined space. 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 should control fires.

**Natural Gas Explosions**

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. In these circumstances, the cause of the explosion may be difficult to determine.

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., gas company personnel) in the area, to the minimum number necessary to stabilize the situation. Take a pessimistic point of view.

Do not rely on gas odor. Use combustible gas indicators to check all suspected areas. Both gas company personnel and the hazardous material response team have combustible gas indicators for this purpose. Isolate the area for a minimum of 1500 feet or less only when readings on the LEL are below 25% for leaks outside in open air or 10% for leaks inside of buildings or confined spaces.

Check areas systematically using combustible gas indicators. Start close to the area of the explosion, and increase the area until reading indicates no detectable concentration. Record the readings for the affected area. 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.

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-subsequent reading should be taken from same holes when possible. Command shall provide for effective interaction between gas company personnel and fire department. Gas company personnel are responsible for locating and elimination leaks in the gas system. As industry specialists, they can provide command with valuable assistance in the effective handing of these incidents.
**Reported Gas Leak – No 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 shall be approached as potentially dangerous situations. With gas company personnel on the scene of an incident, it shall be standard procedure for the first fire department unit to provide for life and property safety.

The SPFD Hazardous Materials Response SOG 5F.001 shall be used as a basic guide for these incidents. A minimum number of personnel shall be allowed to enter the area to size-up the situation while additional units stage in a location out of the potentially dangerous zone.

Evacuate any civilians in the area of escaping gas.

Attempt to locate the source of the gas and any shut-off devices available.

Gas leak situations within a building where the source of the leak is unknown or uncontrolled, the gas supply shall be shut off at the meter. Command shall ensure the meter is tagged and locked off until repairs are completed. This is most easily accomplished with the cooperation of the gas supplier at the scene. 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 combustible gas indicator if there is any suspicion of accumulation within a structure. Ventilate using blowers to pressurize if necessary.

If gas company personnel must evacuate to shut off a leak, provide stand-by protection with a charged hose line and firefighters in full protective equipment, to include SCBA.

**Offensive Actions**

Any offensive actions shall be accomplished only by trained hazmat personnel and only after combustible gas readings have been completed.

If an offensive action is warranted by hazmat personnel, it shall be attempted only in pairs and in full protective clothing with a SCBA with back-up personnel standing by.
If an offensive action is being attempted, a combustible gas reading shall be ongoing.

**Tactical Standard Operating Guidelines (SOG)**

If an offensive action is being attempted, the hazmat personnel shall be given support and protection with a charged hand line.

**Personnel Safety**

All personnel working in the vicinity of a known or suspected gas leak shall wear full protective clothing. Personnel working in a suspected ignitable atmosphere shall use SCBA. 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. "Fire Line" tape should be used to identify the safety perimeter when necessary.

**PSNC Emergency Response Protocol**

Fire department personnel, upon arrival at the scene of a natural gas emergency, will take whatever steps necessary to secure the emergency site, to protect lives and property and to support the remedial action initiated by the gas company.

As soon as practicable, upon arriving at the location of an emergency involving the uncontrolled escape of natural gas, fire department personnel will verify that the gas company has been notified.

Fire department personnel will advise the law enforcement to allow properly identified representatives and equipment of the gas company to enter the controlled emergency area.

Upon arrival at the emergency site, gas company personnel will immediately report to the "Incident Commander." The Incident Commander and the gas company emergency site supervisor will coordinate the necessary remedial procedures.
The gas company emergency site supervisor will have the authority over the operation of underground natural gas distribution valves, after conferring with his supervisors.

Fire department personnel, when responding to an emergency in or around a structure served by natural gas, **may close the gas meter valve serving that structure so long as the leak is not coming from the meter.**

Fire department personnel should never direct a stream of water or spray into the area of escaping gas, except as a last resort to protect adjacent exposures.

The Gas Company and/or fire department should monitor the area around the escaping gas with a combustible gas indicator to determine the area where migrating gas is in the explosive range - (4.5-15 percent natural gas in the air). No equipment or source of ignition should be allowed with this area.

Fire department personnel should never extinguish burning gas, except to protect life or property.

Fire department investigators will provide to the Gas Company a copy of the investigation report of emergencies, involving natural gas, when requested.