

First responder utility safety bulletin

Fall 2021



Natural gas safety during major snow and ice events

Heavy snow and ice storms have the potential to compromise natural gas infrastructure in a large area, both aboveground and underground. As a first responder, you must consider the possibility of widespread damage to natural gas infrastructure when sizing up any incident involving a reported natural gas leak, fire and/or explosion during major snow and ice events. Be alert for carbon (CO) monoxide poisoning as well.



Never risk damage to natural gas equipment by kicking or striking it to remove accumulated ice or snow.

Damage to natural gas service meters or regulators

Though gas infrastructure is designed to withstand extreme weather conditions, accumulated ice and snow can place undue stress on gas meters, piping and regulators, leading to dangerous natural gas leaks. Aboveground equipment can also be damaged by the impact of snow and ice falling from roofs or by the accumulation of ice as melting snow drips and refreezes. When standing water accumulates around pipes and freezes, melts and refreezes, it can also produce serious damage. Be on the lookout for these problems as you help your community recover from major winter storms. Urge the public to protect their meters from winter weather, to mark their meter's location to prevent damage by snow removal equipment and to be vigilant about removing accumulations of ice and snow. Remind them never to hit or kick the meter, but to use a broom to brush away the snow instead.

Moisture accumulations in equipment

Moisture can accumulate in natural gas regulators, relief valves and other equipment and prevent them from functioning properly when it freezes, impeding or interrupting the flow of gas to appliances and furnaces. In some instances, the expanding freezing water can damage the equipment.

Blocked exhaust or combustion air vents

Every year, injuries and deaths result from CO poisoning when exhaust and combustion air vents for natural gas appliances (such as water heaters and dryers) become blocked by snow and ice. CO is formed when natural gas cannot burn completely because there isn't enough air for combustion to occur. The symptoms of CO poisoning are similar to flu symptoms, including headaches, weakness, confusion, chest tightness, skin redness, dizziness, nausea, sleepiness, heart fluttering or loss of muscle control. If you suspect carbon monoxide, get the victims outside into the open air. Have them breathe deeply and seek medical help for them immediately.

Frost heave can compromise pipelines

In sustained subfreezing conditions, or during spring freeze and thaw cycles, ice can expand underground and affect susceptible soils, pushing ice and soil upward in an effect called frost heave. Frost heave causes roads to develop humps and dips and can sometimes damage underground natural gas distribution pipelines in the same fashion. Older neighborhoods with older natural gas infrastructure, such as cast-iron mains, are more likely to be affected.

Though natural gas is lighter than air and will always rise whenever possible, gas leaking from damaged underground pipelines can be trapped by ice and snow and migrate some distance before entering buildings, utility vaults or sewer systems. When you are called to a gas leak, fire or explosion, use your natural gas monitor to check around nearby manholes for the presence of migrating leaking gas. Remember, do not open or enter manholes or vaults where natural gas is present until National Grid employees say it is safe to do so.

Transmission lines and aboveground facilities

Though most of these impacts are at the distribution (or neighborhood) level, where smaller pipelines and gas mains are closer to the soil surface, larger transmission pipelines can also be damaged by frost heave. Equipment at metering and pressure-regulating stations is primarily aboveground and is used to remove impurities, such as moisture, and step down pressure from natural gas being delivered through transmission lines. In extreme winter temperatures and storm conditions, this equipment can also be affected by freezing moisture and heavy loads of snow and ice.

Universal response tactics

In any incident where you suspect or have confirmed that natural gas or carbon monoxide are involved, follow these universal response tactics:

- Notify National Grid through your dispatcher as soon as possible.
- Wear full PPE and SCBA.
- Prevent loss of life by evacuating the area to at least 330 feet as soon as possible.
- Eliminate any potential source of ignition, such as vehicle engines, flame-producing devices and anything that could produce sparks.
- Use intrinsically safe radios and flashlights.
- Monitor the atmosphere using multiple monitors.

Keep yourself, your team and the public safe this winter.

Visit firstresponder.ngridsafety.com today to register and complete your utility safety training.

To report emergencies, call **911** and **National Grid** immediately.



Know what's below.
811 before you dig.

In case of gas emergencies:

Long Island and the Rockaways:
911 and 1-800-490-0045

Metro New York:
911 and 1-718-643-4050

Upstate New York:
911 and 1-800-892-2345

Massachusetts:
911 and 1-800-233-5325

Rhode Island:
911 and 1-800-640-1595

In case of electric emergencies:

Upstate New York:
911 and 1-800-867-5222

Massachusetts:
911 and 1-800-465-1212

Rhode Island:
911 and 1-800-465-1212

IMPORTANT TERMS AND CONDITIONS – PLEASE READ PRIOR TO USE.