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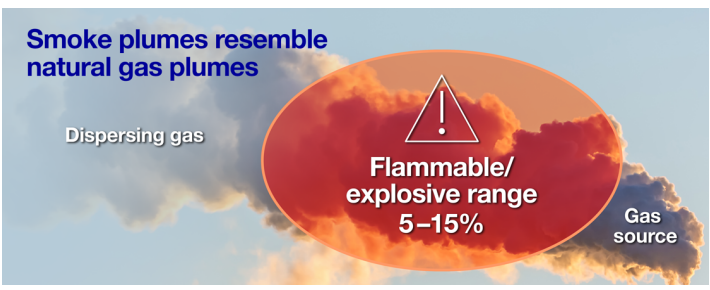
Important update:
If you have not fully completed all the modules in the **First Responder Utility Safety Training program**, please **log in** and complete them on or before August 31, 2021. The e-learning site will be getting upgraded but unfortunately no previous work will be carried over.

Welcome to National Grid's Tips of the Trade *for first responders. These tips are intended to help you respond safely and effectively to incidents involving natural gas and electricity. Please review them with your team.*

Effective response to an outdoor natural gas leak/plume

As with any natural gas leak, understanding how natural gas behaves is key to responding safely when an outside leak generates a large gas plume. Although unconfined gas is not likely to explode, it can still ignite when concentrations fall within the range of 5–15% gas in air.



Scientists tell us that a smoke plume behaves much like a natural gas plume, which is invisible under most conditions. As with the smoke in this photo, at the edge of the plume, natural gas combines with the atmosphere and begins to disperse. At the heart of the plume, the gas is more concentrated. As it disperses, the gas passes through the flammable/explosive range of concentration – 5-15% gas in air. Only your CGI can tell you where that concentration is occurring.

Plume migration

An unconfined gas leak will rise in a plume before it disperses into the surrounding atmosphere. Identifying the path of the gas plume and removing ignition sources are essential to keeping your team and the public safe.

Weather conditions – including wind, temperature and humidity – may influence the path of a gas plume. Environmental conditions, like dense tree canopy or obstructing buildings, can concentrate the plume and keep it from dispersing rapidly. If the migrating plume encounters a spark, the resulting fire may ignite the source of the leak as well.

Use combustible gas indicators (CGIs) to monitor the presence and concentration of natural gas in the plume and evacuate the area accordingly, using the guidance of DOT ERG Guide 115. Eliminate ignition sources: use intrinsically safe equipment, park away from the path of the plume, shut off all vehicles and emergency lights, and prevent the use of any electrical devices.

In high-risk situations, if you must redirect the plume to perform a rescue, complete an evacuation or to protect infrastructure, use fog streams to influence the path of the plume. Don't expect the fog stream to push the plume where you want it to go. It is the motion of the air that the fog stream generates, not the force of the water, that moves the plume.

When using fog streams is the best tactical option, follow these guidelines:

- Use high-volume fog streams with unmanned fixed monitors; when possible, use water cannons.
  - Never allow the fog spray or the runoff to collect in the excavation that holds the leaking pipeline.
  - Never allow water to be introduced into gas piping.
- Never operate underground gas valves.
- Continually monitor the area using CGIs.
- If the leaking gas ignites, cool exposures – but never extinguish a gas-fed fire.
- Coordinate your tactical actions with National Grid.

For more first responder safety information, visit firstresponder.ngridsafety.com.

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

811 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.