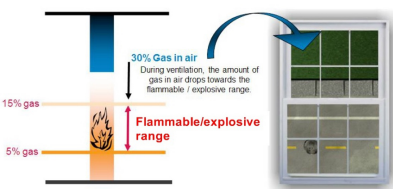


**Responding to high concentrations of natural gas: Ventilation precautions**

Natural gas has a flammable range of 5 to 15% gas in air. At concentrations above 15%, leaking natural gas will not ignite. However, first responders charged with ventilating high-concentration natural gas leaks face a significant hazard, as the gas concentration must be lowered through the flammable range to mitigate the incident.

Natural gas is extremely flammable.



As with other natural gas-related incidents, your first step for a confirmed high-concentration gas leak should be to make certain your dispatcher has notified National Grid. To keep your team and the public safe, pursue the tactics below in coordination with a National Grid emergency representative.

**Park safely and clear the area**

**Park at least 100 feet from the front of the building** and away from manhole covers, gas valve covers and storm sewer grates. Deploy charged hand lines with fog nozzles as a precaution, and establish a static water source.

**Evacuate all bystanders and occupants of potentially impacted structures.** Your incident commander will consult with a National Grid emergency representative to determine the extent of the evacuation. For larger leaks, downwind evacuation for at least 1/2 mile may be required.

**Shut off gas and eliminate ignition hazards**

**Never ventilate a building without first coordinating with National Grid** and verifying gas has been shut off and ignition sources have been eliminated.

**You may control the gas leak by closing the service valve before the meter**, provided you have been trained to do so. Follow your department's guidelines with respect to operating gas service valves.



*A gas valve is off when it aligns across the pipe.*

- After a service valve has been closed, do NOT open it under any circumstances. Only utility representatives can restore gas service.
- Inform National Grid of any service valve you have closed and its precise location.



**Prior to ventilation, eliminate any potential sources of ignition**, such as vehicle engines, flame-producing devices and anything that could produce sparks. Use intrinsically safe radios and flashlights. Do not ring doorbells or turn on or off any electrical switches, as a spark from these devices could ignite the gas. Do not step on doormats; friction from your boots could create a spark of static electricity.

Be aware that if the situation warrants it, **National Grid may shut down electrical power to a structure to reduce ignition hazards.**

**If ventilation is indicated**

**If it has been determined that gas concentrations are either within or above the flammable range**, do NOT enter the structure unless operations are coordinated with the National Grid emergency representative and approved by your incident commander.

If you are approved to enter the structure, do so only in full PPE including SCBA, and take these precautions:

- **Ventilate from the top down** and consider the wind direction. In most situations, natural air currents will allow the gas to diminish and power ventilation is not necessary.
- If power ventilation is necessary to clear the structure, **use intrinsically safe ventilators and positive pressure ventilation on the upwind side.** Take care not to exhaust gas into adjacent structures.

**Case in point: Lack of evacuation places crew in danger**

Firefighters responding to a call for a residential gas leak utilized their CGIs to verify the presence of gas. As the crew entered the residence, their meters immediately went into alarm, indicating that gas was present in concentrations above the upper explosive limit (UEL) of 15% gas in air. Firefighters began to search the home, opening windows to ventilate the high level of gas along the way.

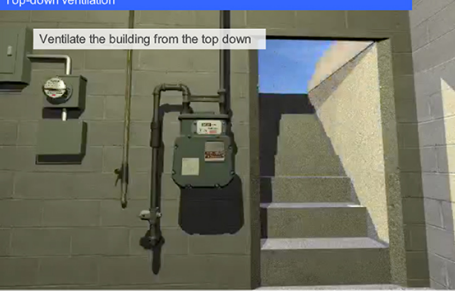
Crews remained in the structure as gas level fell into the flammable range. Fortunately, utility personnel arrived shortly thereafter and advised the captain that his team was in immediate danger and needed to evacuate the building. This incident provides a lesson in situational awareness. The Captain failed to recognize the inherent danger and evacuate his personnel once ventilation was initiated. Operations at this incident should have been limited to creating an exclusion zone and awaiting the arrival of the utility company.

**Learn more gas and electrical utility response tips at [firstresponder.ngridsafety.com](http://firstresponder.ngridsafety.com).**

National Grid's free **First Responder Utility Safety Training Program** has helped thousands of emergency response personnel learn to operate safely during incidents involving utility hazards. This program, which includes gas and electric certification trainings, covers natural gas pipelines and electric power lines, as well as other facilities.

**Indoor leak response**

**Top-down ventilation**



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Through this training, you will gain the knowledge, skills and technical ability required to respond to the most common electrical and natural gas emergencies.

Our certification programs are self-paced. Users who complete the gas and electric programs will earn personalized certificates of completion.

**Keep yourself, your team and the public safe. Visit [firstresponder.ngridsafety.com](http://firstresponder.ngridsafety.com) today to register and complete your utility safety training.**



**Know what's below. 811 before you dig.**

**Smell Gas. Act Fast.**

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

**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

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