York County Natural Gas Authority

Natural Gas Safety for First Responders

Staying Safe While Serving Others

Presented by: YCNGA Team Members

Natural Gas Safety

- First Responders are typically first on the scene in an emergency and can face a great risk from natural gas leaks
- Understanding the potential dangers and dealing with them correctly makes everyone safer
- This presentation is designed to supplement, not replace, your department's natural gas standard operating procedure

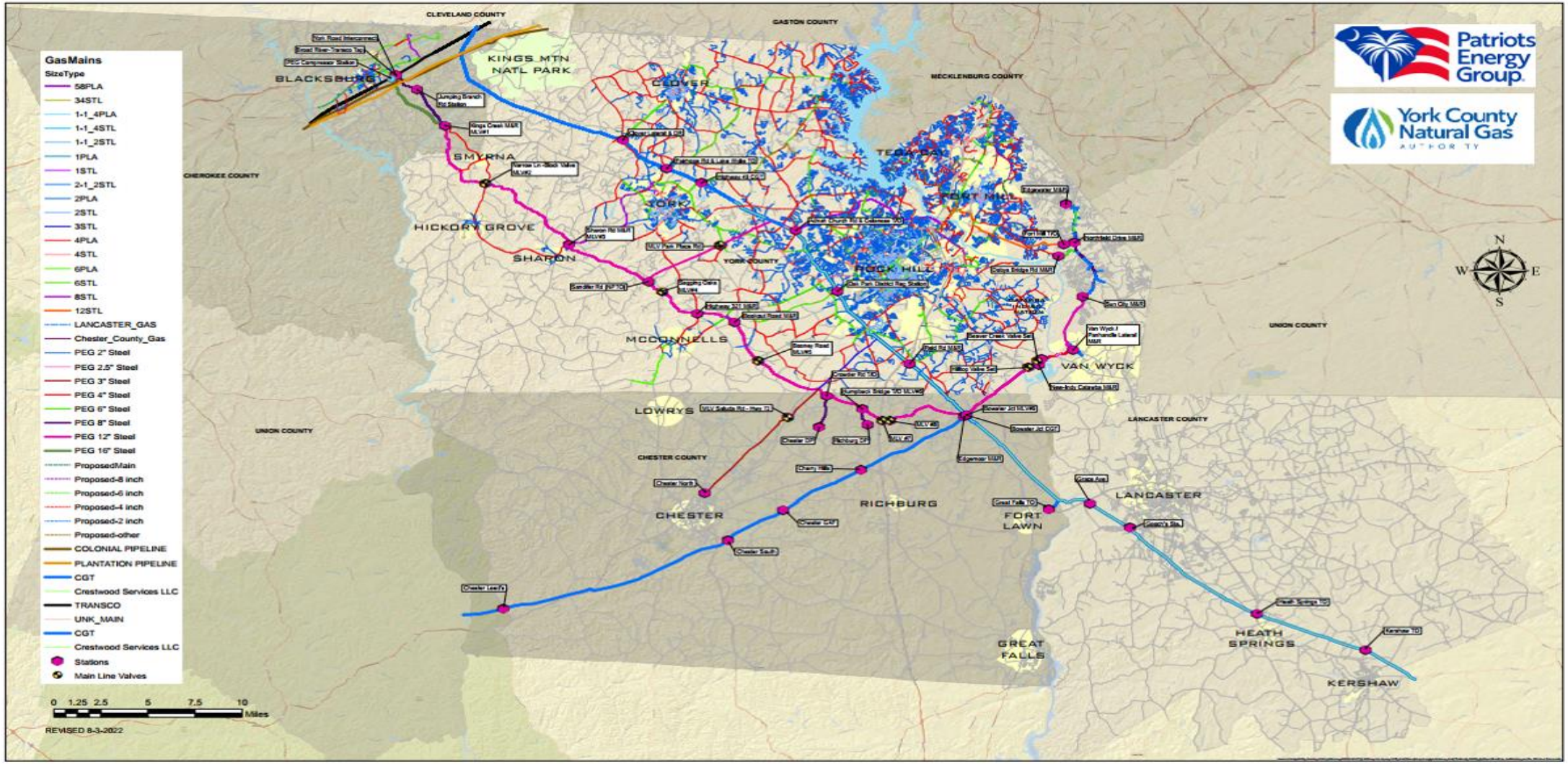
History on the Authority

- Established as a political subdivision of the State of South Carolina in 1954
- The Authority operates primarily as a Local Distribution Company
- We operate and maintain:
  - 1,901 miles of distribution main
  - 16.97 miles of high pressure distribution main
- Typical distribution line pressures are at 60 psi or less
- Currently serves 75,345 customers in York & Cherokee Counties

Patriots Energy Group

- Established as a joint action agency in 2003
- Operates 69 miles of high-pressure transmission lines, with connections to Transcontinental Pipeline and Carolina Gas Transmission
- Pipeline diameters range from 16” to 6” in size
- Typical transmission line pressures are 400 to 700 psi
- Currently provides service to York, Cherokee, Chester and Lancaster Counties

PEG/YCNGA System



Eden Terrace Propane Air Plant

Decommissioned

York Road Compressor Station

- Located in Blacksburg at the interconnect with Williams/Transco Pipeline
- Remotely monitored and operated by Gas Control in Rock Hill
- Serves as backup location for Gas Control
- Augments pipeline pressures during periods of higher demand
- 3 reciprocating compressors driven by 2,500 h.p. Caterpillar natural gas fueled engines
- Facility has gas/fire detection and water mist extinguishment and remote monitoring
- Staffed during normal business hours

After Hours Call Service

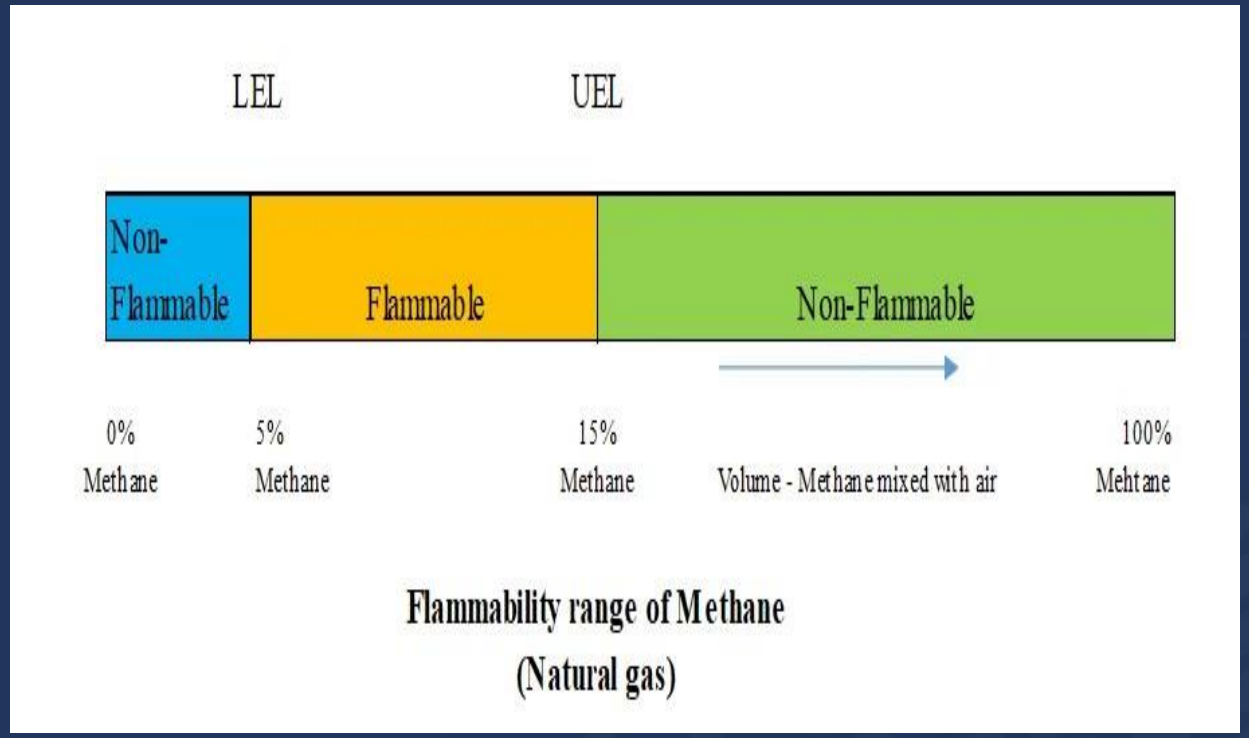
- Effective July 22, 2024 YCNGA brought the after hours call center in house
- If you need to reach our after hours call center please dial:
  - 803-323-5304 and press 9
  - Or dial our Emergency Line 866-201-1001
  - You will speak with a YCNGA Employee

Properties of Natural Gas

- Natural gas is lighter than air:
  - It will follow the path of least resistance and will travel upward through available space
  - When underground or in enclosed spaces, natural gas will move laterally or "migrate"
- Natural gas is odorless, colorless, and tasteless in its natural state:
  - The addition of **mercaptan** produces the familiar "rotten egg", "sulfur-like" smell.
  - You may not always be able to smell **mercaptan** so never rely of your nose alone to detect a gas leak. Monitor the atmosphere with your department's air-monitoring equipment
- Natural gas is nontoxic but can present inhalation hazards and if released within an enclosed area, it can displace oxygen and act as an asphyxiate

Properties of Natural Gas

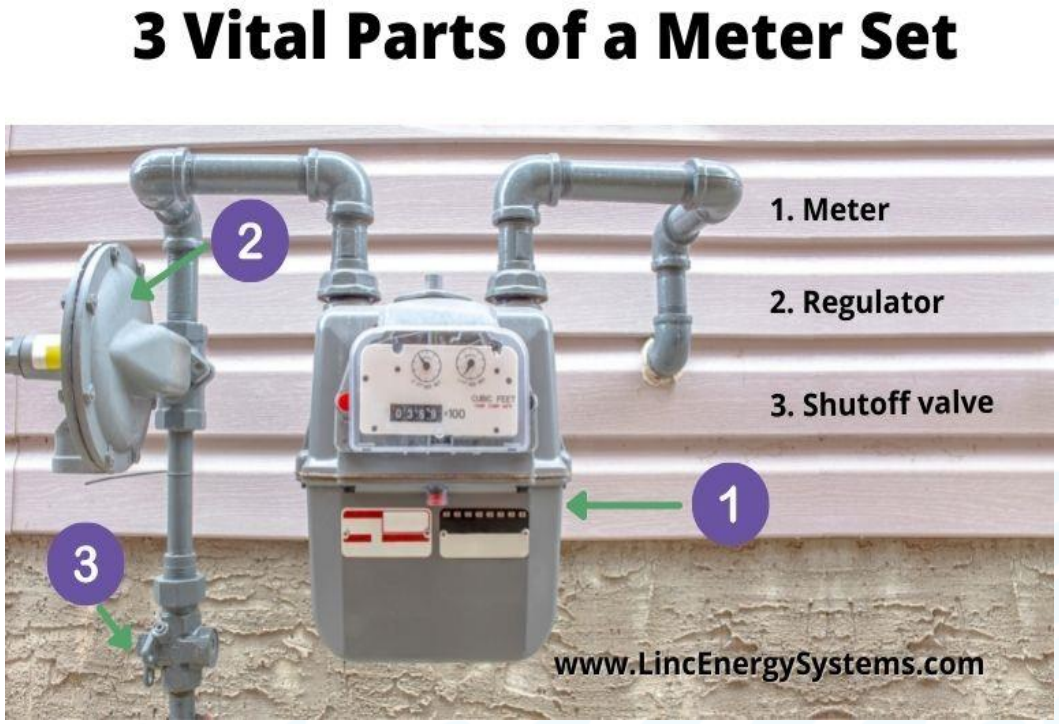
- Natural gas is highly flammable
- Natural gas will burn when the gas-to-air ratio is between about 5% and 15%
  - Natural gas concentrations below 5% or above 15% will not burn
- Liquefied gases such as propane have different properties than natural gas



Flammability range of Methane (Natural gas)

Natural Gas Delivery System

- Natural gas travels through three types of pipelines on its way to the individual service lines
  - Gathering pipelines
  - Transmission lines
  - Distribution mains
- Service lines carry natural gas from distribution mains to customers' gas meters
- In general, the closer natural gas gets to the end user, the smaller the pipeline



Excess Flow Valves

- An excess flow valve is a mechanical device installed inside a natural gas distribution service line between the street and customer meter that enhances the safety of natural gas service
- If there is a significant increase in the flow of gas (e.g., due to a damaged line), the EFV will “trip” or close to minimize the flow of gas through the service line
- EFVs do not stop the flow of gas for any leaks or faulty equipment on the customer’s side of the gas meter. Once the repair is made and the correct pressure is restored, the EFV automatically resets itself

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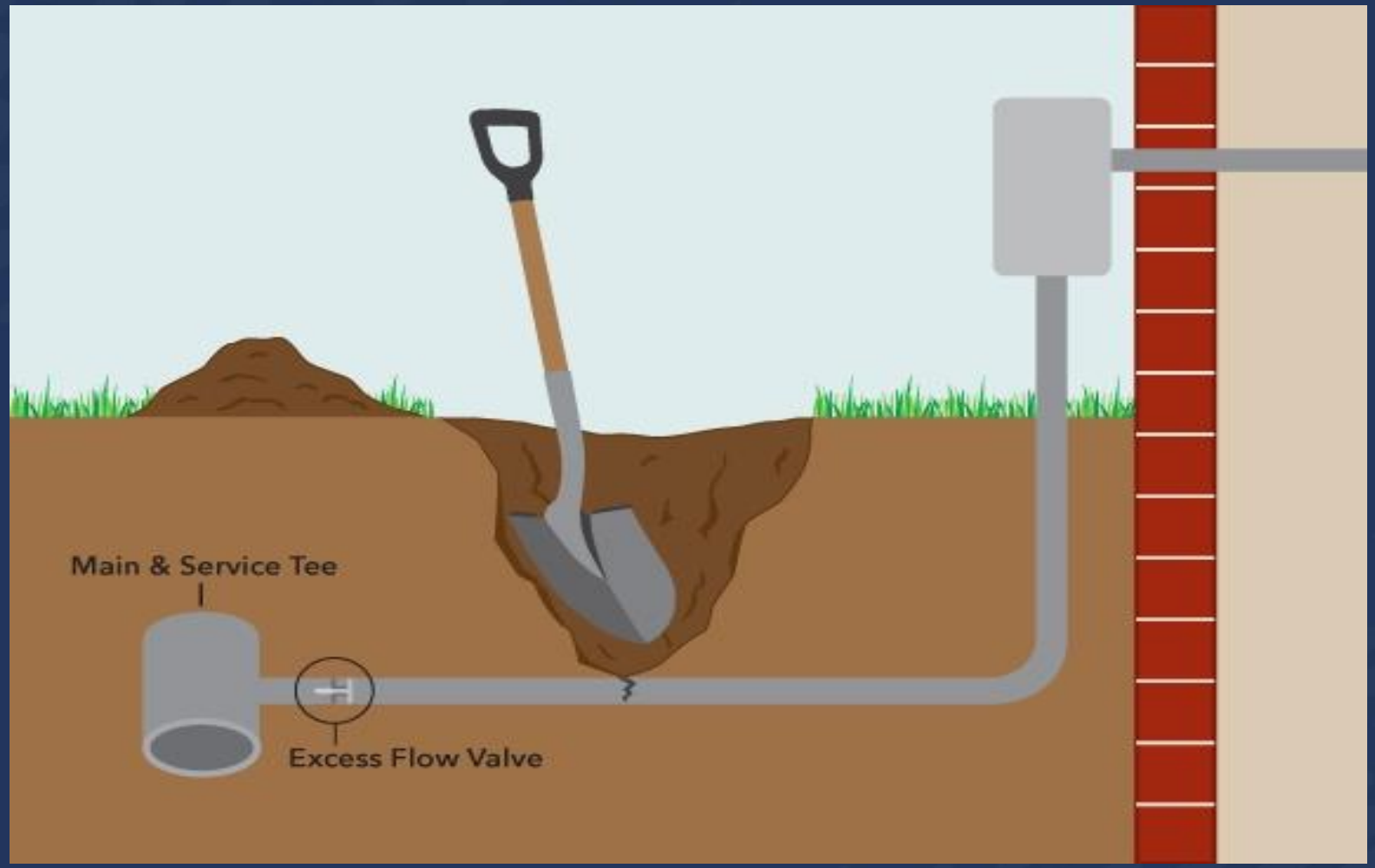
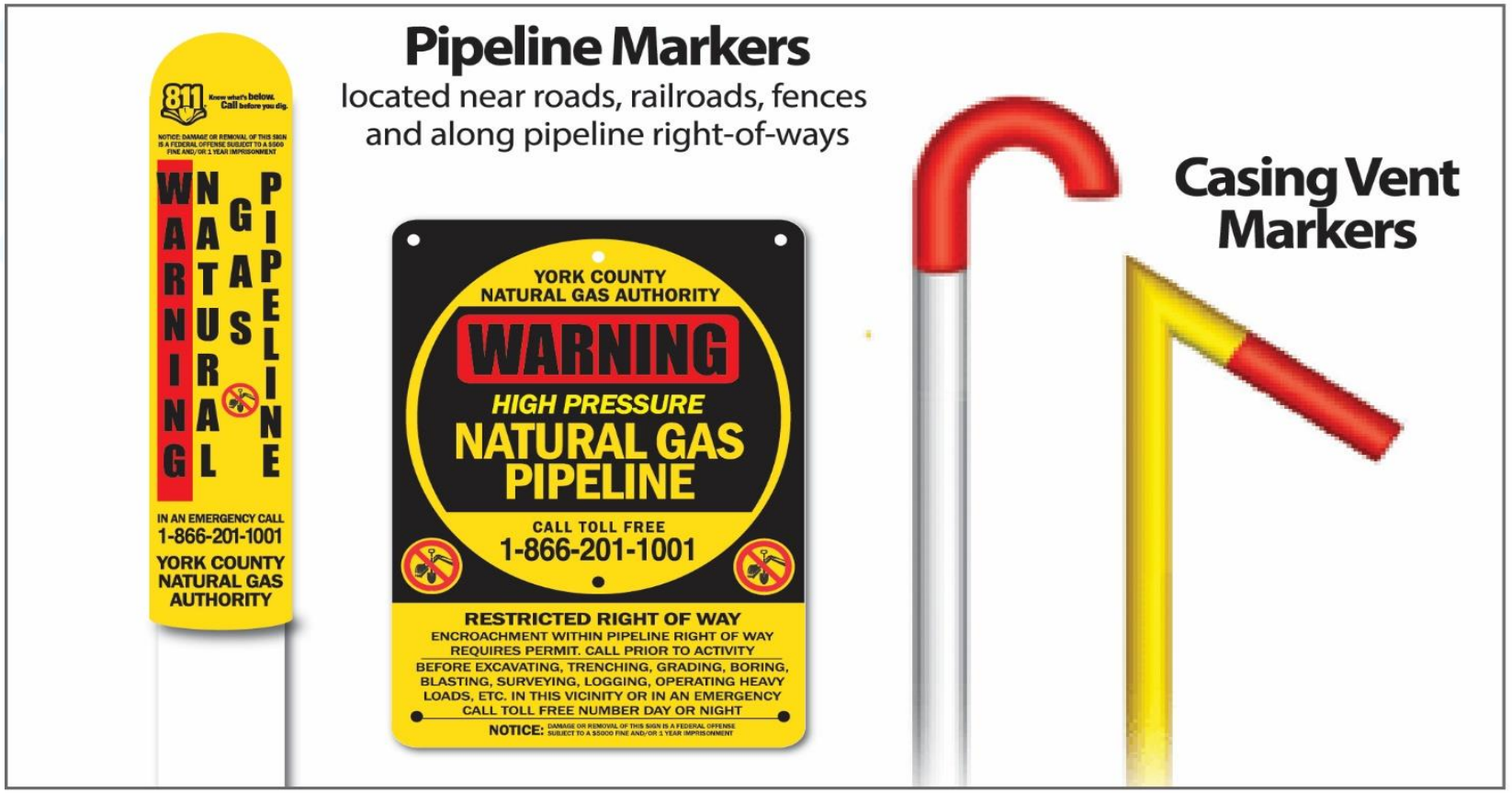


Natural Gas Markers



Emergency Response

Emergency Response Recommendations – Outside Gas Leak

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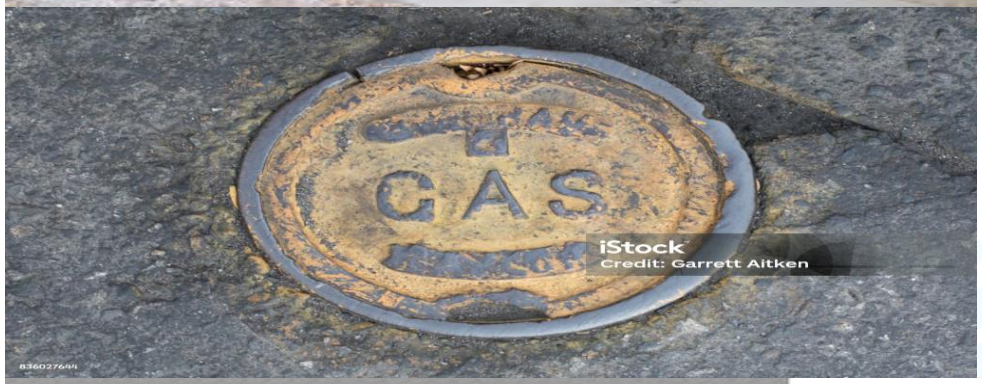
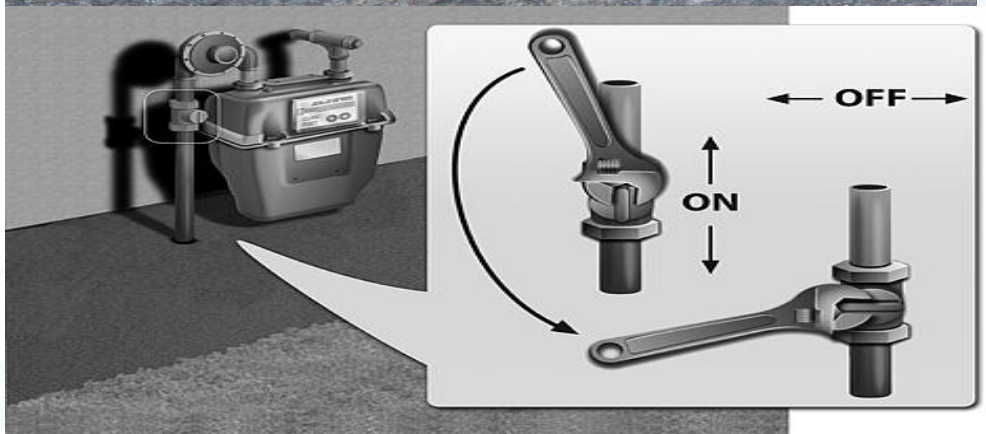
- Scene size up and evaluate wind direction
- Start reading the gas percentage well before approaching the scene and proceed with caution
- If necessary, the area should be secured by evacuation and/or traffic control until YCNGA representatives arrive to the scene
- Eliminate any ignition sources
- If you are responding to a fire involving natural gas your best and safest course of action is to let it burn
- Stop the spread of secondary fires and cool any structures that can be saved
- Once the natural gas supply has been depleted, the fire will extinguish itself

Emergency Response Recommendations – Outside Gas Leak

- ***NEVER*** attempt to open or close underground pipeline valves or station pipeline valves
- First responders who have been trained to do so may turn off gas at the aboveground shut-off valve on a residential meter
  - A quarter turn will turn off the meter
- After the shut-off valve has been closed to the meter. ***DO NOT*** open it back up under any circumstances

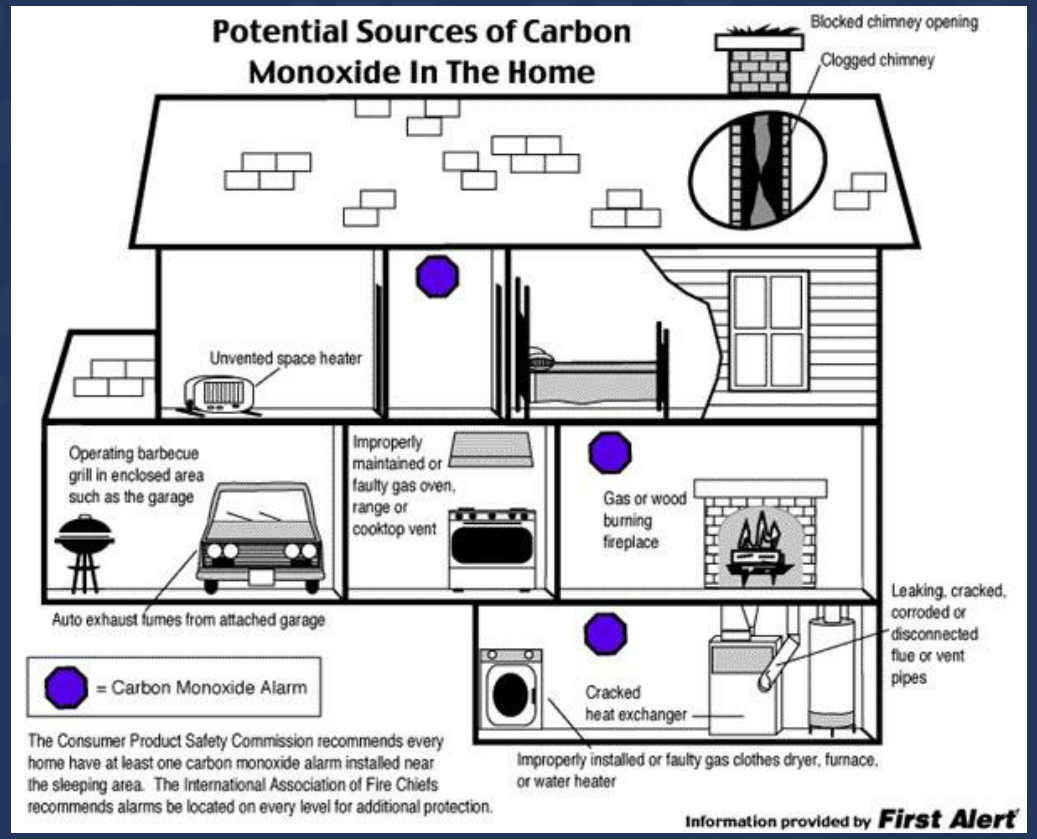




Emergency Response Recommendations – Inside Gas Leak

- Do not use spark-producing equipment
- Remove all ignition sources
- Evacuate if necessary
- Ventilate structures from the top down
  - Use extreme caution when ventilating a structure with a gas concentration above 15%
  - As gas disperses, concentrations will pass through the flammable range

Emergency Response Recommendations – Carbon Monoxide



- Understanding carbon monoxide (CO) leaks:
  - CO is a colorless, odorless, poisonous gas
  - CO leaks are frequently caused when fuel-burning appliances malfunction or are used without adequate ventilation
- CO poisoning can look like a common illness but is deadly if untreated:
  - Flu-like symptoms
  - Nausea/confusion/slow breathing
  - Loss of consciousness
- Make sure victims get fresh air and seek medical attention immediately

YCNGA Emergency Management & Response

- YCNGA employees are trained in Incident Command and emergency response procedures including coordination with local responders
- YCNGA responders are equipped with SCBA, FR protective clothing, and gas detection/monitoring equipment
- YCNGA also has mutual aid agreements with members of CPGA and APGA
- YCNGA employees participate in full-scale mock drills every other year (2025)

YCNGA Emergency Response – From the Field

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Damage Prevention Partners

- Damage prevention is a major priority for YCNGA
- We respond to all 811 dig requests that are called in
- We provide on-going damage prevention training to homeowners, contractors, and excavators through our Pipeline Public Awareness Program
- We need you to be our safety partners!

Thank You!

FOR MORE INFORMATION:

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