



Pipeline Emergency Response

Presenter's Notes

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Welcome to Natural Gas Safety for First Responders.

At SCE&G, our first priority is the same as yours – public safety. While we design, install, test, operate and maintain our pipelines to meet or exceed regulatory standards, we believe in comprehensive planning in the unlikely event of an incident.

Now I know that some of you will have heard this information before, and so for you, this program will be a refresher. For others, this may be the first time you're hearing about this topic, but I hope everyone will find the program valuable.

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Firefighters, police, and EMTs are typically first on the scene in an emergency and face the greatest risk from natural gas leaks and fires. Understanding the potential dangers and dealing with them correctly makes everyone safer. This program is designed to supplement, not replace, your department's standard operating procedures (SOPs).

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SCE&G, Headquartered in Cayce, SC, is a regulated public utility engaged, among other things, in purchasing, selling and transporting natural gas to residential, commercial and industrial customers in the central, western, and coastal areas of south Carolina.

This presentation will cover key practices you need to know to keep yourself safe around natural gas lines and on the scene of emergencies involving natural gas. The topics we are going to focus on are:

- Properties of Natural Gas
- The Natural Gas Delivery System
- Preventing Natural Gas Ignition
- Responding to Natural Gas Emergencies
- Indoor Natural Gas Leaks
- Outdoor Natural Gas Leaks
- Natural Gas Fires

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You may someday have to deal with natural gas at an incident scene. So, it's important to know a few basic facts about natural gas, its properties, and how it behaves.

Natural gas is lighter than air. It follows the path of least resistance and will rise. Be alert. Natural gas will travel upward through any available space: stairwells, ducts, a crack in the road. It can even seep up through soft ground.

It is colorless and odorless.

For safety reasons, an odorant called Mercaptan, which has a distinctive rotten egg smell, is added to natural gas. This makes it easy to detect.

Natural Gas is flammable within a 4-15% gas-to-air mixture. And it has a high ignition temperature between 900-1170 degrees Fahrenheit. Sources of ignition could include static electricity, sparks from phone or radio, pilot light and matches.

Liquefied gases have different properties than natural gas. Emergencies involving propane and butane may require different precautions and procedures than those covered in this program. Refer to departmental SOPs for these liquid gases.

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SCE&G is committed to the safe operations of its pipelines in our community.

On our system, there are three types of pipelines: Transmission, Main (distribution) lines, and Service lines.

Transmission pipelines are the largest and have a pressure of 400 to as much as 1000 pounds per square inch. These lines generally carry gas long distances from the gas supply sources to localities where it will be used.

The next type of natural gas line is the main (also referred to as distribution lines). These are smaller lines with a pressure of less than 100 pounds per square inch.

Service lines are the lines that run from mains to individual structures. They have the same pressure as the main line that feeds them.

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Pipeline markers are visible from all intersecting road ways and contain contact information needed to reach the utility company.

While a marker does not identify the exact location of the pipeline, it does indicate the general vicinity of the line along with emergency contact information. It is important to note that multiple lines may exist in a single right-of-way or above-ground facility and we recommend you contact each of the pipeline operators in the vicinity of any pipeline incident. Please be aware that not all pipelines are marked. Underground pipelines may still be present even in the absence of pipeline markers.

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To maintain safe operating pressures, we have devices to relieve pressure on the system in the event of over-pressurization. This device, WHICH you MAY HAVE SEEN BEFORE, allows natural gas to readily dissipate in the atmosphere.

Under no circumstances should the pressure-relieving device be valved off.

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SCE&G regularly patrols its lines to monitor for construction activity or other encroachments that may present a potential threat. Careless digging poses the biggest threat to our pipelines and to people. South Carolina state law requires all excavators notify SC811 before beginning any excavation work. When a utility locate request is received by SC811, utilities have three business days beginning at 12:01 am of the next business day to mark their underground facilities.

On Transmission Pipeline, We perform SMART PIG INSPECTIONS. PIGS (Pipeline Inspection Gauges) are large pieces of machinery pulled together with powerful technology that help with the maintenance of transmission pipelines. These inspection tools provide data on the condition of Pipelines which help gauge the health and integrity of the pipes.

We perform routine inspections, corrosion protection, maintenance and testing programs. We visually inspect aboveground pipes and related equipment for corrosion and damage. Operator personnel walk, drive and fly over pipeline right-of-ways inspecting them for unauthorized activities, leaks, and other conditions that might endanger the pipeline.

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Avoid turning electrical equipment or devices on or off in the vicinity of a leak. Sparks can come from some unexpected sources, so be vigilant. If ignition sources have not been eliminated before ventilation, the gas could ignite.

If possible, leave radios, pagers, cell phones, etc. in your vehicle. Otherwise, turn them off before approaching the area.

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Avoid using doorbells, light switches, matches, and lighters, and prevent their use by others. Be alert for evacuees and bystanders who may try to turn off lights or make phone calls. When evacuating the area, remember to knock on doors. Don't ring doorbells.

Take steps to eliminate sources of static electricity.

If you must use a flashlight, turn it on before approaching the area.

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Emergency Response Recommendations

- Evacuate areas where natural gas is present.
- Isolate and secure the area and restrict access.
- Call SCE&G immediately at 1-800-815-0083
- Do not operate (open or close) pipeline valves or other associated equipment.
- Eliminate ignition sources.
- Using combustible gas detectors, establish the perimeter of the impacted area. Check for migration of natural gas to surrounding buildings and sewers.
- Position vehicles and equipment upwind and at a safe distance from the incident site.
- Do not attempt to extinguish a natural gas fire unless life or property is in jeopardy. Remove surrounding combustibles or keep them watered down to prevent ignition.

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Indoor gas leaks can result from malfunctioning gas-fed appliances. If you can identify a specific appliance causing the leak, shut off the gas at the appliance's supply line. If you cannot identify a specific appliance or when in doubt, use the meter to shut off the gas. Be aware that what appears to be an indoor leak may be the result of gas migrating into the structure. Once service to the structure is off, verify that the leak has been eliminated.

Do not open windows until you are certain the gas supply has been shut off. Remember that gas concentrations will change as gas dissipates. If ignition sources have not been eliminated, the gas could ignite as it passes through the explosive range, and if gas is still leaking into the space, concentrations can hover within the ignition range, causing prolonged danger.

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Knowing when and how to safely shut off natural gas service is key to preventing loss of life and property. Turn off gas at meter valves or appliance valves only if you can do so safely.

¼ turn to the right will turn off a meter. These shut-offs may be hand operated or you may need a wrench. Gas meters are open when parallel to the pipe and closed when perpendicular to the pipe. Use the same procedure for shutting off gas service at an appliance supply line.

If you turn the gas off at the meter, do not turn it back on. Always leave the meter turned off. Only SCE&G personnel will turn the gas back on.

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Outdoor natural gas leaks can be caused by construction-related damage, cracks due to extreme weather, or pipe corrosion. Be on the lookout for evidence of construction activity and severe weather as indicators of a possible leak.

Contact SCE&G immediately to shut off the gas. Do this whenever you suspect a leak. SCE&G will respond, turn off the gas, and repair the damaged pipeline.

Evacuate the area.

Be alert for migrating gas. Gas can accumulate in storm drains, construction trenches, buildings, and other utility lines, particularly as it moves laterally and seeks a path upward. As gas migrates, localized concentrations will change. Remember that natural gas can burn as concentrations move through the flammable range.

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These are warning signs of a natural gas leak: Sound of hissing noises ; Smell of distinctive, sulfur-like odor; Vegetation is discolored or dead grass/plants; Bubbling in wet or flooded areas; abnormally dry soil or dirt being blown in the air. In the event of a natural gas emergency, follow these recommendations...

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For structure fires, shut off the gas supply only if you can safely access the gas meter. Be sure you have correctly identified the meter feeding the fire.

Never attempt to shut off the gas at underground or main valves. If there is no meter, if it cannot be reached safely, or if you are unsure which meter is feeding the fire, wait for utility personnel to shut off the main supply.

The utility personnel will also help with monitoring concentrations once the flames are out. Once the gas supply is off, remain alert for gas migration and possible re-ignition. Keep all your protective gear on and the area secure until utility personnel and your incident commander give the all clear. Do not use

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water to suppress a natural gas fire. Utility personnel and the incident commander will tell you how to proceed. Use a fog spray to cool and protect combustible exposures.

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SCE&G's response to a pipeline emergency is directed toward the safety of all persons and includes isolating, minimizing and controlling the pipeline release. We maintain comprehensive emergency response plans at our facilities. Our personnel are trained to respond and communicate with emergency response agencies within the Incident Command structure.

We also maintain annual emergency liaison training with emergency responders.

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SCE&G will then repair the gas pipeline system. Please understand that the length of time varies based on the size of the event.

So what are important numbers you need to know...

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Here are some important pipeline safety numbers; Pipeline Emergency: 1-800-815-0083; Call Before You Dig: 811

In addition...

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Maps of transmission pipeline and their operators in your area can be found in the National Pipeline Mapping System (NPMS) at: www.npms.phmsa.dot.gov.

For more pipeline safety information, please visit: www.sceg.com/gassafety.

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Remember, Pipeline Emergency Response is a Team Effort. At SCE&G, our first priority is the same as yours – public safety. If you have any questions about today's presentation or need any additional materials, please contact tflitter@scana.com.