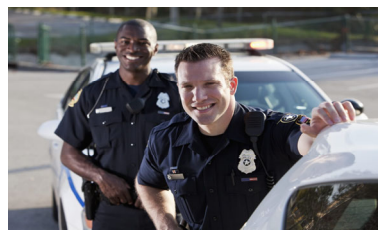
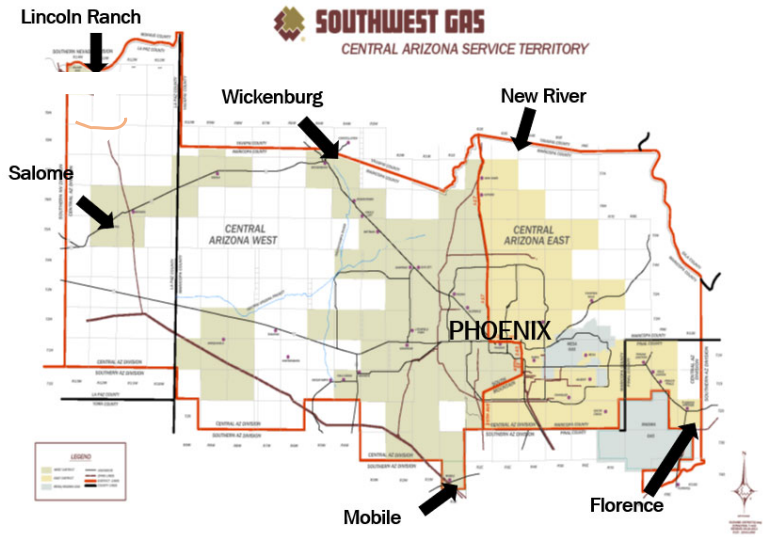
Welcome to the
2026 Emergency Responder Liaison Meeting



Strengthening emergency response through collaboration.

The Central Arizona Pipeline Operators who are sponsoring the 2026 First Responder Pipeline Safety Training are:

- Southwest Gas
- City of Mesa
- Tucson Electric Power



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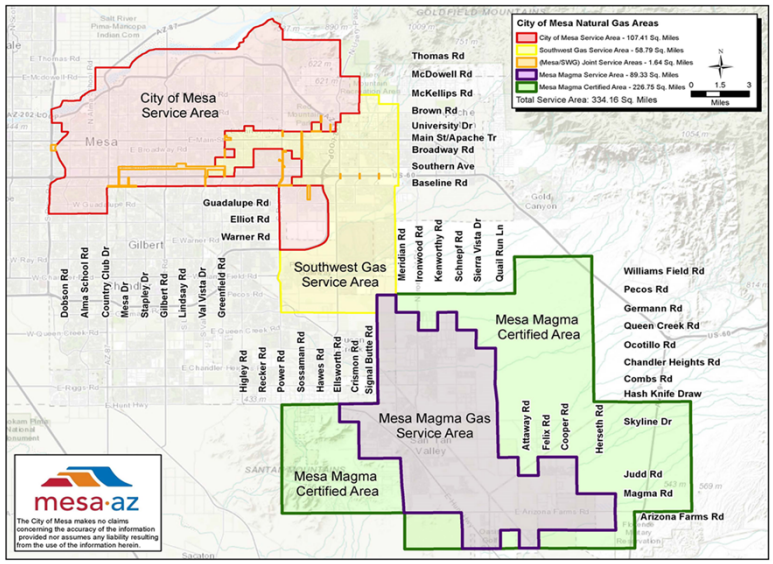
SOUTHWEST GAS

- 4 Operating centers, 43rd, Tempe, Wickenburg, Pinnacle Peak
- Serve over 2 million customers in 3 states. 700K services in CAZ
- 12 K miles of pipeline our CAZ division.
- Southwest Gas Corporation was founded in 1931
- 1984 SWG took over gas services from APS



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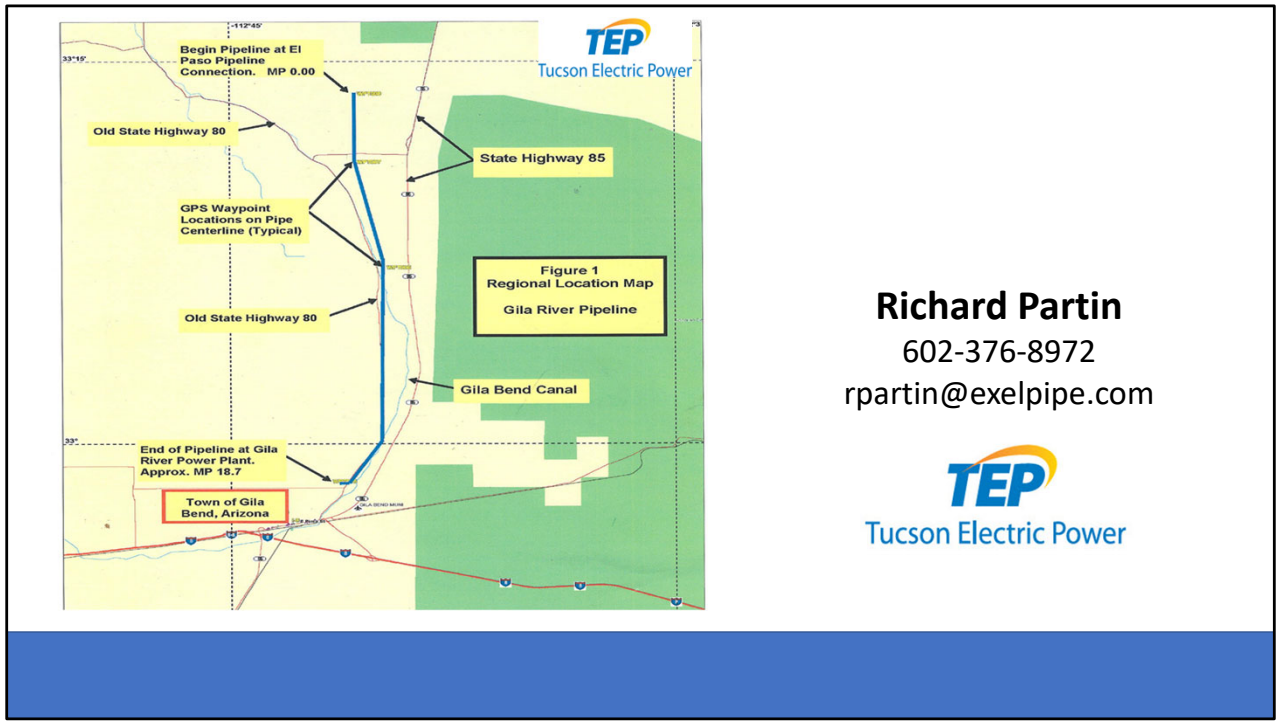
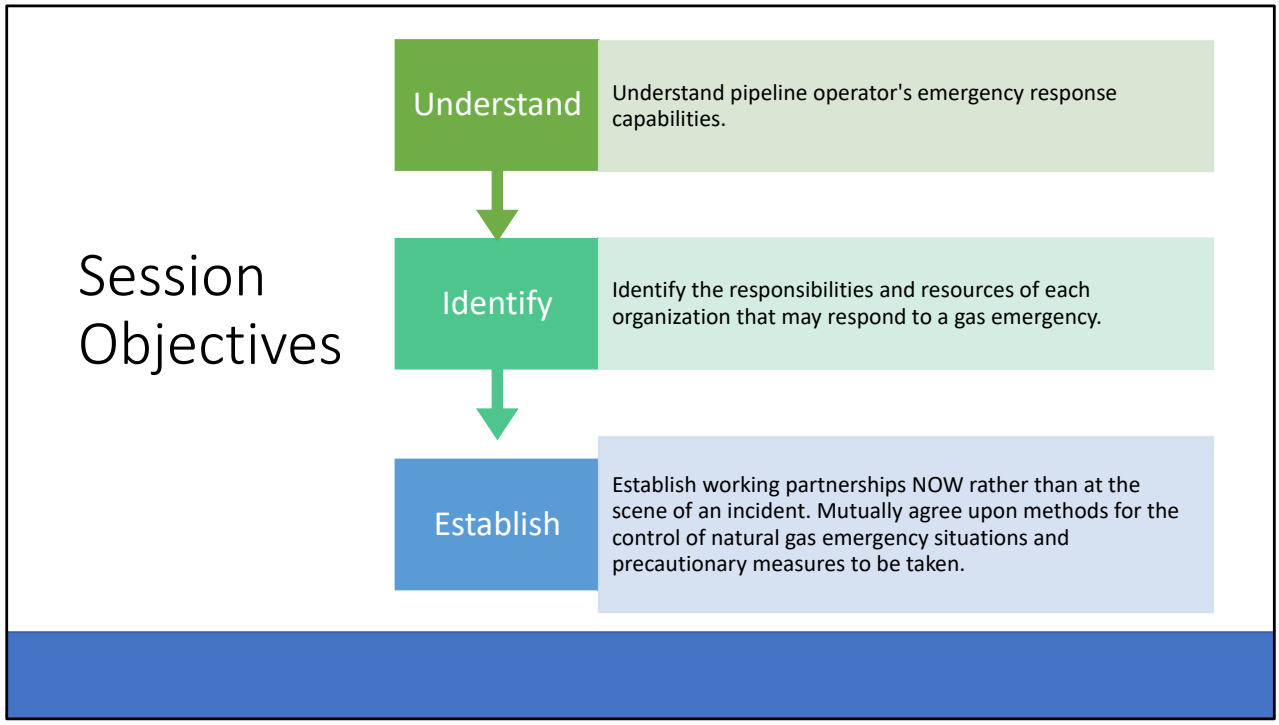
mesa·az
ENERGY RESOURCES

The City of Mesa has been providing natural gas to customers since 1917. We provide natural gas service to over 82,000 homes and businesses in the Mesa and Magma service areas, a 235-square-mile system located in portions of Queen Creek, San Tan Valley, and Pinal County.



Ex El Pipeline Services operates Tucson Electric Power's Gila River Power Station Pipeline, an 18.5-mile, 30-inch high-pressure natural gas pipeline dedicated to supplying natural gas to its 2,400-megawatt power plant. The pipeline is constructed of high-strength carbon steel and has a maximum operating pressure of 809 psi.

The pipeline begins near the Lewis prison outside Buckeye and runs along the east side of old US 80 until it reaches the power plant near Gila Bend.

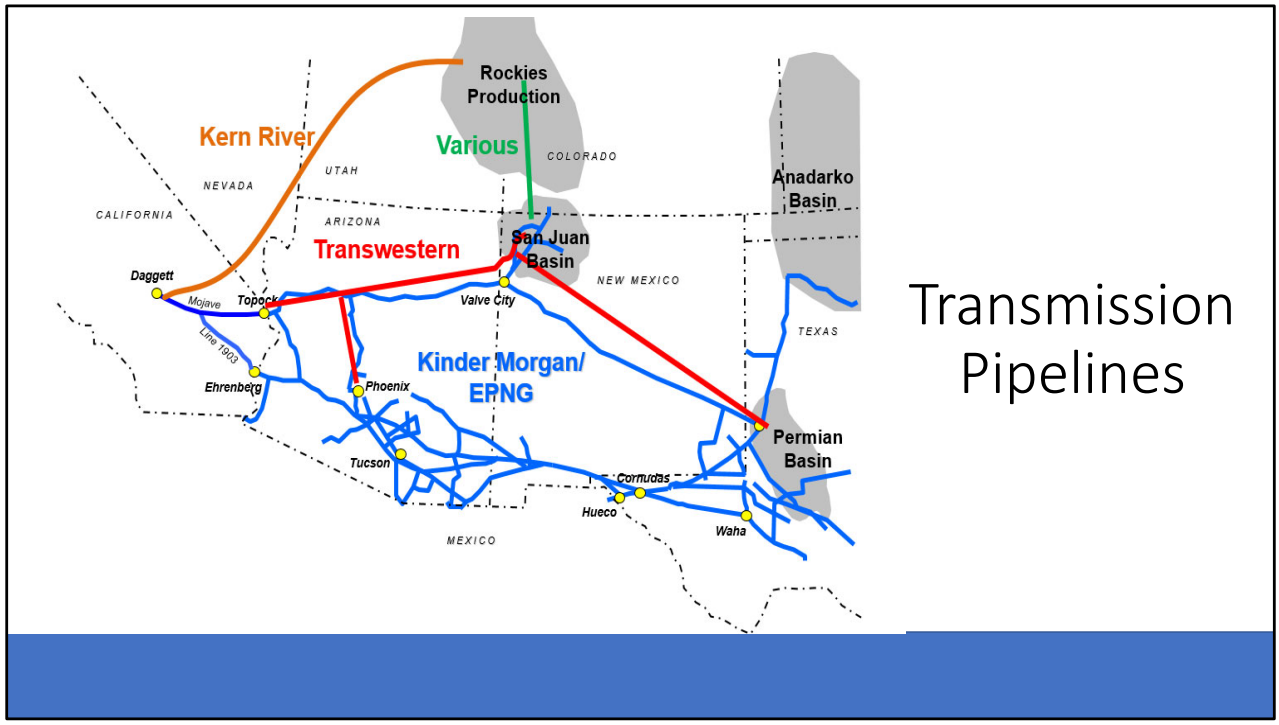


Our purpose here today is to give you an idea of our emergency response capabilities, to discuss how our expertise can complement your agency's, and to get to know each other better NOW, rather than at the scene of an incident.

The following videos are examples of why we are all here today.

Hurst, TX - April 18, 2018
Four people were injured when a car crashed into a house, rupturing a natural gas line and ultimately leveling the home by way of an epic explosion. For reasons that are unclear, at least one resident was still inside the house when it exploded, making it all the more remarkable that everyone came out alive. The driver of the vehicle was not injured. He was, however, arrested for driving without a license. The video can be viewed at: https://youtu.be/RRTlmaurkz0

At about 4:00 AM on February 28th, 2021, an ignition occurred on a 10-inch-high pressure line located underneath the 7th Street bridge in Phoenix. There were no injuries or fatalities. The bridge was closed for repairs for months after the incident and the cause of the failure was determined to be vandalism.
https://www.youtube.com/embed/7ugr4hqCTYo?start=1



Most of our natural gas supplies in Arizona come from the Permian Basin in Texas. Kinder Morgan (formerly El Paso Natural Gas) is the primary natural gas transporter to Arizona. Kinder Morgan's lines are marked in blue. In general, interstate pipelines that transport natural gas over large distances are called transmission lines. A transmission pipeline is defined as any pipeline that operates at greater than or equal to 20% of the pipe's maximum allowable pressure. Think big pipe, high pressure. There are 300,000 miles of natural gas transmission pipelines in the U.S..

Pipeline System & Facilities

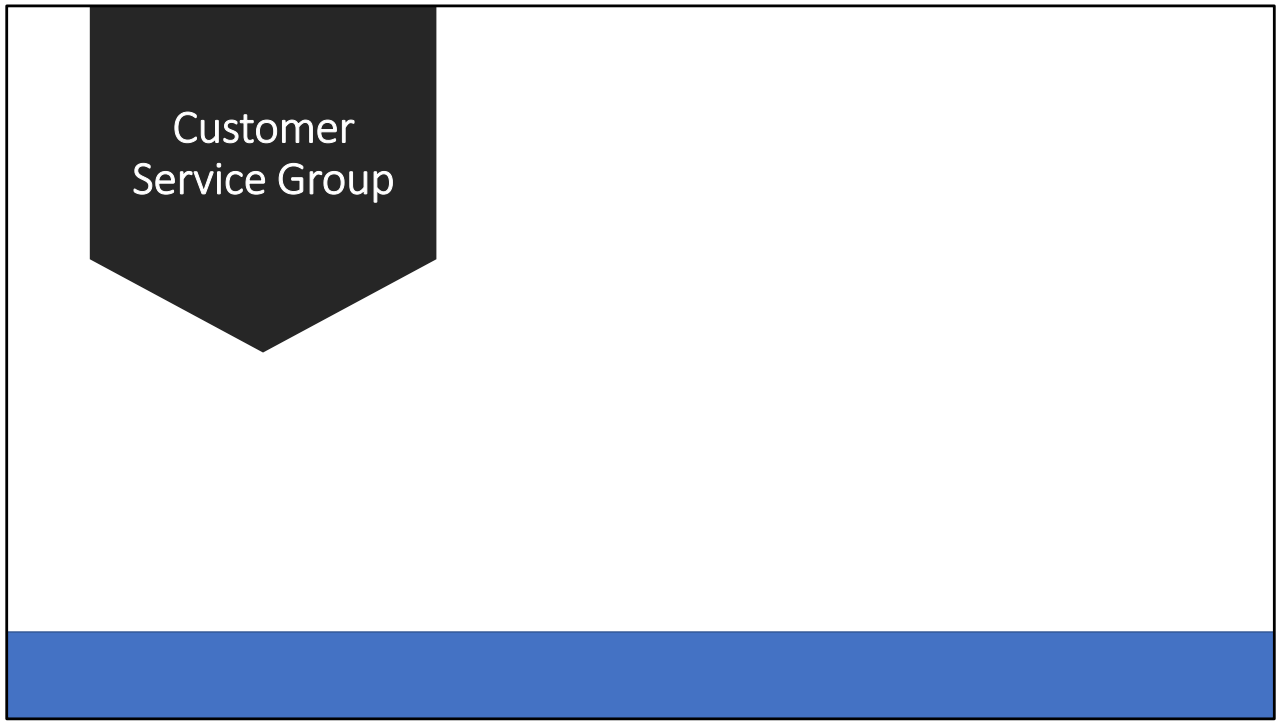
Transmission Lines

- Steel
- High Pressure

Distribution Lines

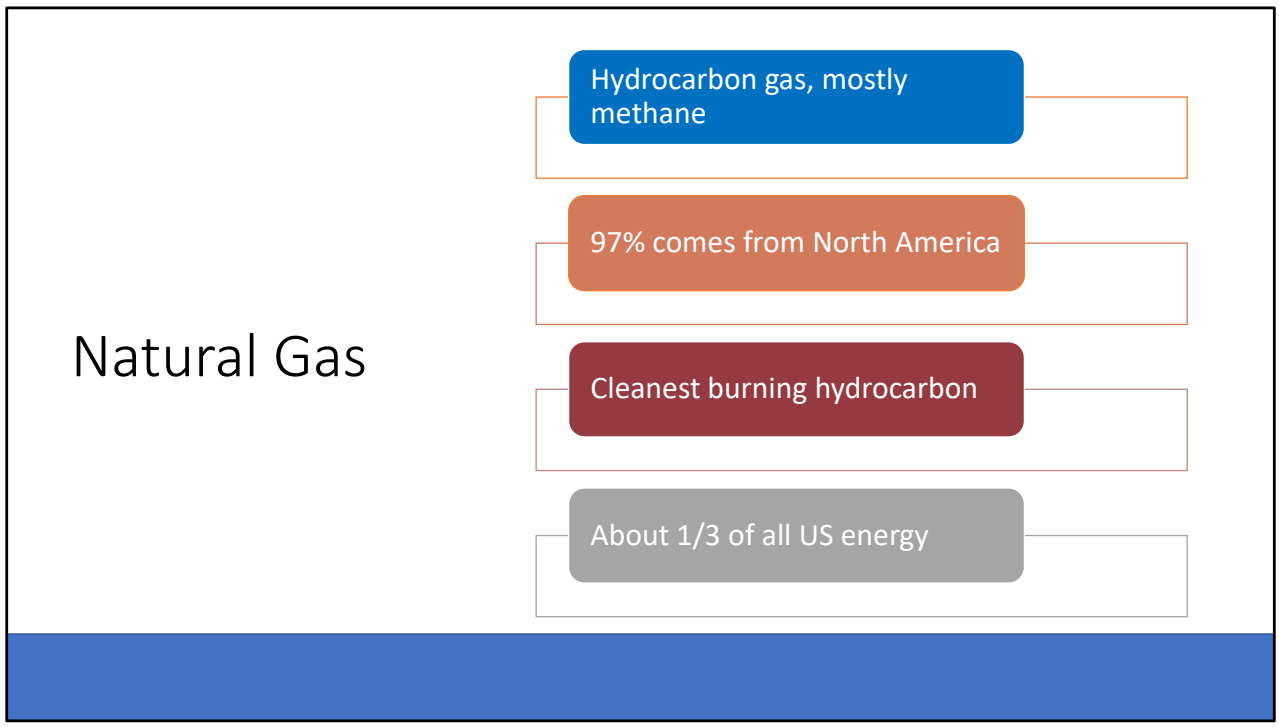
- Plastic
- Steel

Natural Gas transmission lines carry higher volumes and higher pressures of gas across the country.

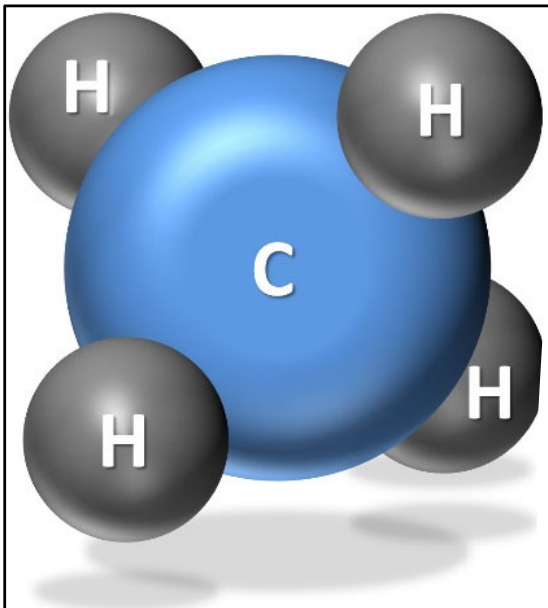

Customer
Service Group

Natural Gas Facts & Properties Demonstration

We will now demonstrate the properties of natural gas.



Natural gas is a hydrocarbon found underground, and the world's largest gas field is in the Middle East. The good news is that natural gas is also abundant here in North America. 84 % of the natural gas used in the U.S. is domestically produced. Another 13 % comes from Canada, and the remaining 3 % is imported as liquefied natural gas from other countries. Due to its efficiency, cleanliness, and reliability, natural gas has grown increasingly popular over the past 20 years. It currently supplies 29 % of all U.S. energy.



What is Natural Gas?

Natural Gas is a mixture of Hydrocarbons

- Methane is the principal component and accounts for approximately 85%
  - Chemical symbol of Methane is: CH_4
- Ethane makes up approximately 11% of Natural Gas
  - Chemical symbol of Ethane is: C_2H_6
- The remaining 4% consists of various gases

Information on Hydrocarbons: http://hyperphysics.phy-astr.gsu.edu/hbase/organic/hydrocarbon.html | http://en.wikipedia.org/wiki/Hydrocarbon

Three Chief Physical Properties

There are three chief physical properties of natural gas:

- Odorless
- Non-toxic
- Lighter than air

Non-Toxic

- Natural Gas is not poisonous
- Asphyxiation can occur if:
  - In an atmosphere with large quantities
    - ✓Natural Gas can displace oxygen

Exposure to extremely high levels of natural gas can cause loss of consciousness or even death.

If a natural gas leak is severe, oxygen can be reduced (displaced), causing dizziness, fatigue, nausea, headaches, and irregular breathing.

Exposure to low levels of natural gas is not harmful to your health.

If the gas is burning incorrectly (incomplete combustion), then Carbon Monoxide poisoning can occur.

Odor

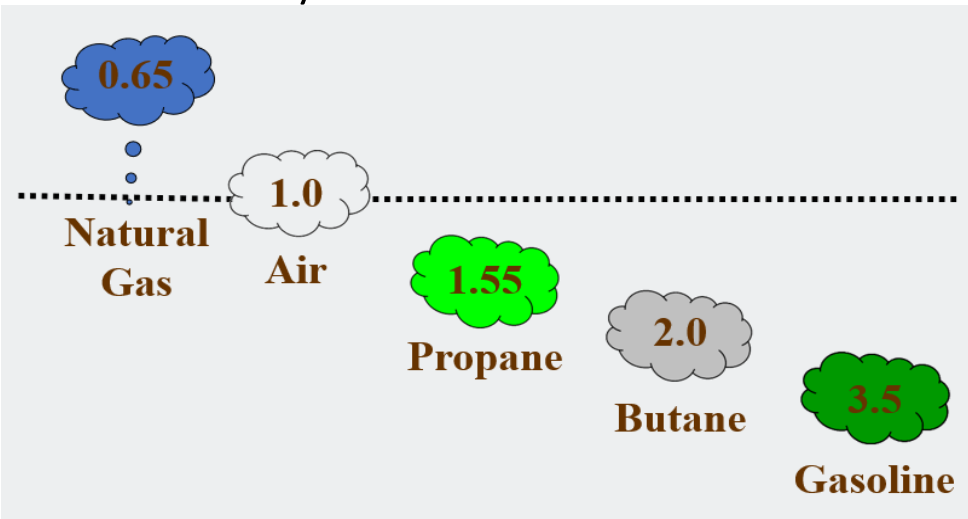
- Natural gas in its original state has no odor.
- Pipeline operators add that “rotten egg” smell with a chemical called mercaptan.
- This is actually a safety aspect. This odorant allows the gas to be detected by the public, although operators also use specialized equipment to detect it.

Lighter Than Air

- Specific gravity = 0.65
- Natural gas will rise and dissipate

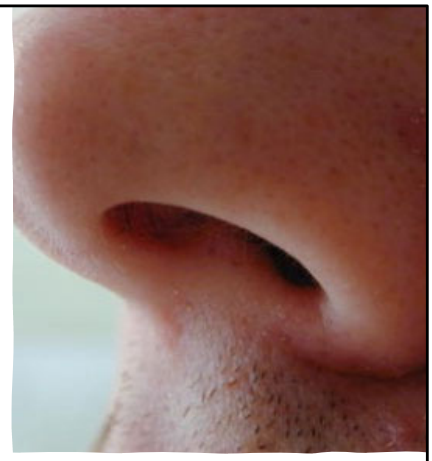
Because natural gas is lighter than air, it will rise and dissipate into the atmosphere, which is another safety aspect. This is better than having the fuel collect around us at ground level, which is what happens when the fuel is heavier than air. It also helps detect gas from a leaking gas line, as it rises to ground level before reaching the atmosphere.

Specific Gravity



As previously said, natural gas is lighter than air. This is because the specific gravity is 0.65, being less than the specific gravity of air at 1.0. Now I will demonstrate to you what we are talking about.





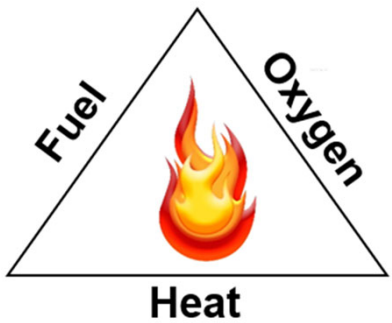
Leak Recognition

SEEING unusual changes to soil (color, hardness), vegetation (dying), or blowing dirt
HEARING an unusual hissing sound coming from a pipeline, appliance, or natural gas meter
SMELLING a rotten egg odor

Our senses can aid in the detection and recognition of a gas leak.


Natural Gas
Demonstrations

Requirements for Combustion



Combustion Triangle

- In the right amounts, it causes a *chemical reaction* that results in combustion.
- By removing one of the triangle elements, the fire is extinguished.
- The best way to extinguish a natural gas fire is to cut off its fuel supply.

The three parts of the combustion triangle, in the right amounts, cause a *chemical reaction* that results in combustion. If you remove one side (element) of the triangle, you extinguish the fire.

The best way to extinguish a natural gas fire is to cut off its fuel supply.

Ignition Sources

TELEPHONE/CELL PHONE

OPEN FLAME

ANY SPARK

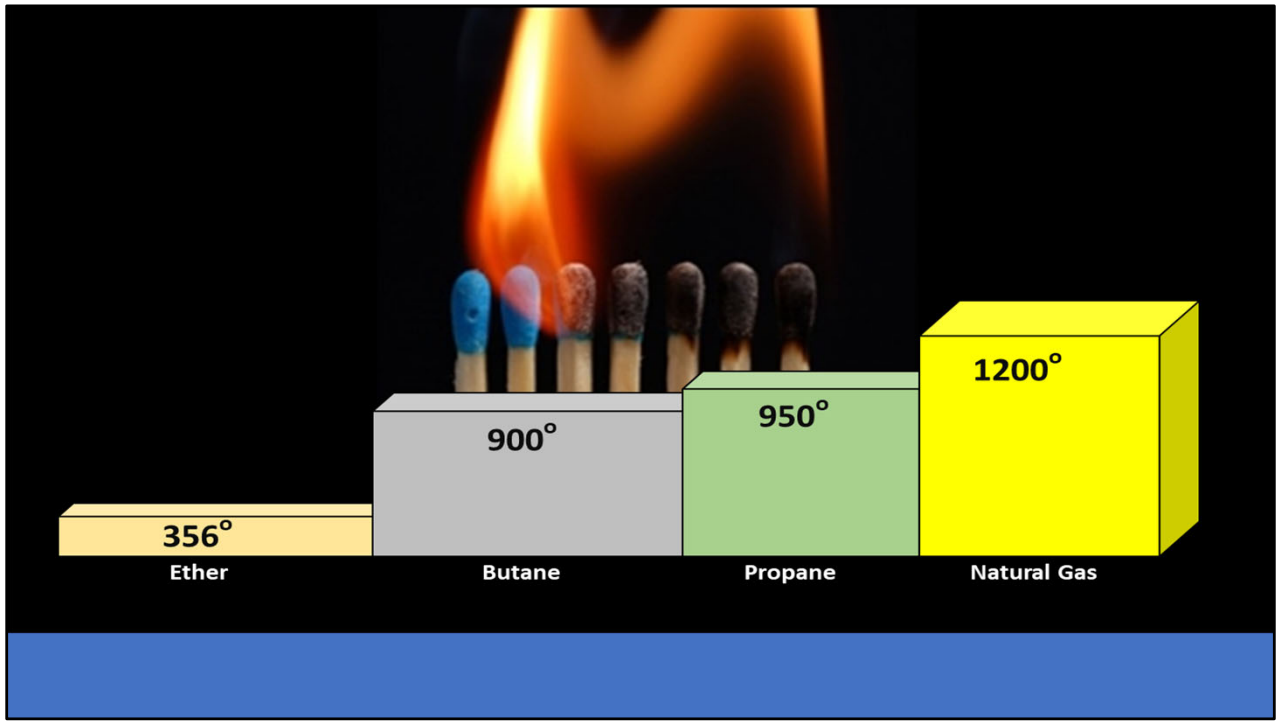
ELECTRICAL SWITCH

VEHICLES

ROAD FLARES

UNINTERRUPTABLE POWER SUPPLIES

STATIC ELECTRICITY



A single match lights at 250* degrees

This slide shows two types of flames: a Bunsen flame on the left and a luminous flame on the right. The Bunsen flame is the desired flame for most natural gas appliances we encounter. This is a hotter flame and is commonly used for cooking or heating your furnace or water heater. You've likely seen a luminous flame in a gas log or a tiki torch.

This slide also illustrates the various ignition temperatures of the fuels shown. As you can see from those listed, natural gas has the highest ignition temperature. Again, another safety feature of natural gas. At 1000 degrees Fahrenheit, these other fuels will ignite while natural gas will not. Natural gas requires at least 1200 degrees Fahrenheit.

We will now demonstrate these two flames to you.

Flame Characteristics

Luminous Type

A. Secondary air only - Obtained at the combustion point

B. 2 to 3 times longer flame

Flame Characteristics

- **50% Primary air and 50% Secondary air** = Combustion
- **Inner Cone**
  Cold Zone - Mixture of unburned gas and air takes place
- **Outer Cone**
  Hot - Complete Combustion
- **Outer Mantle**
  Almost Invisible

Byproducts of *Complete* Combustion

As natural gas is burned, there are byproducts. The byproducts of complete combustion are heat, light, water vapor, and carbon dioxide.

Byproducts of *Incomplete* Combustion

1. Heat
2. Light
3. Water vapor
4. Carbon Dioxide (C02)
5. Carbon Monoxide (C0)
6. Aldehydes

As long as the combustion is complete, the byproducts are not harmful. On the other hand, if the combustion is incomplete, you get the same four byproducts of complete combustion PLUS additional byproducts that ARE HARMFUL.

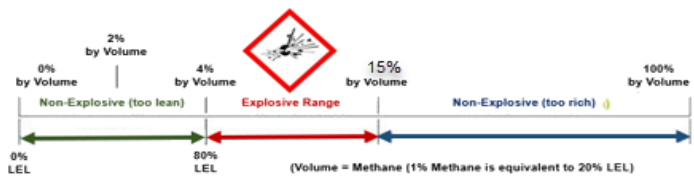
Limits of Flammability

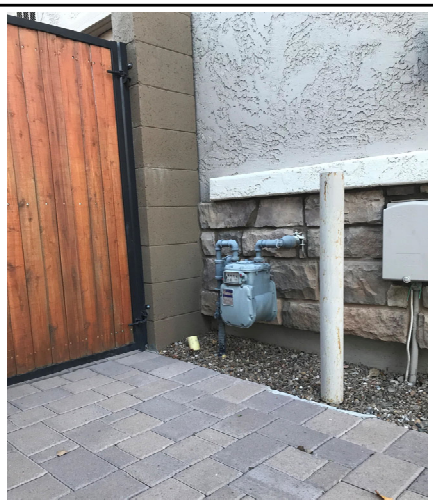
Definition:

The percent of ***gas*** in ***air*** that will support combustion

- Natural Gas in Air Explosive Range
  - Lower Explosive Limit (LEL)
  - Upper Explosive Limit (UEL)

4% - 15%





Types of Meters

- Residential
- Commercial
- Master Meter

Residential Systems operate between 20 psig and 60 psig. The residential meter and regulator then regulates the pressure and flow into the house line or customer-owned lines to ¼ pound pressure.

Some commercial house line systems operate at 2 pounds or up to 5 pounds. These meter set assemblies can reduce the distribution pressure down to ounces of gas inside the customer's residence and/or building by the gas appliances.

These assemblies have an emergency shut-off valve located below the regulator on the inlet side of the meter.

During an emergency, it is permissible to shut off an individual gas service by using the valve on the gas meter. Once you have turned off the gas at a meter, ***leave it off***.

This is a typical residential meter set assembly. The meter measures the flow of gas going into the home, so we know how much to bill the customer. It also reduces the pressure to ¼ psi or 7 inches of water column. If you feel it is necessary to shut off a residential gas meter, you may do so with an ordinary crescent wrench. Here you see the valve in both the open and closed positions.

Once the meter is shut off, please do NOT turn it back on under any circumstances! We have a special procedure that our technicians follow to turn a home's natural gas service back on.

Some older homes have the meter located at the property line rather than close to the house. We own the service up to and including the meter, but any yard line running from the meter to the house is owned by the property owner and is the owner's responsibility to maintain.

Commercial Meter Valve

Larger commercial meter applications may have a valve without the ears (loops), ¼ turn valve that requires a wrap-around locking device.

Commercial meter set assemblies come in several shapes and sizes but serve the same function as residential meters. Commercial meters are typically larger, and pressures can vary a bit more.

Measurement & Technical Service Group

City Gate or "Tap''

This is the point at which distribution companies take delivery of natural gas from other transporters.

It not only measures the flow of gas being delivered to the city gate, but also regulates the pressure.

Regulator Stations

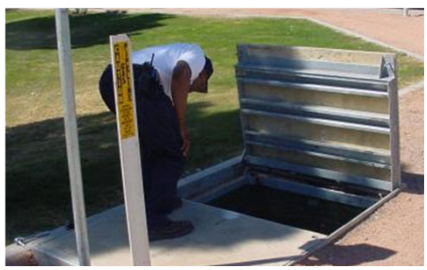
Pressure regulator stations are located throughout our systems to maintain constant gas pressure and flow. Some of the stations are fairly nondescript, and you may have driven by one every day without even noticing it. Some regulator stations are located in very urban surroundings, others in remote locations, and others are enclosed by fencing and identified with pipeline markers.

Regulator Stations

DO NOT attempt to close valves on pressure regulation stations. Doing so could:

- Result in a catastrophic event
- Over-pressurize system

In the event of an incident with a release of gas, we ask all emergency responders not to operate valves or shut off regulator stations. Some regulator stations like the ones pictured here, are equipped with relief valves that may release gas into the atmosphere when a malfunction occurs. Shutting a valve may stop the relief from operating as designed and create a build-up of pressure in the distribution system. Additionally, the operation of valves by emergency responders may not secure the flow of gas and potentially create an unnecessary outage. The best course of action is to wait for gas field personnel to arrive, as they will have the system knowledge to address the situation.



Below Ground Regulator Stations

Below-ground regulator stations are often inconspicuous, located in a small vault in public right-of-way.

Vaults will most often have locks or other method of impeding entry; they may also have an alarmed entry.

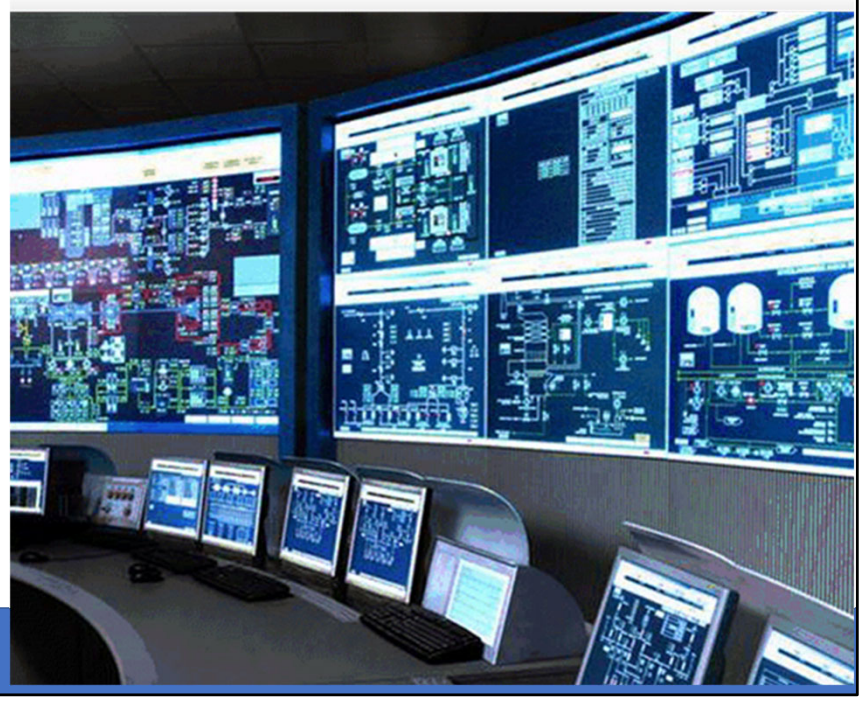
These stations reduce gas pressures on the outlet, or downstream, side.

DO NOT attempt to close valves on pressure regulation stations.

Emergency Notification

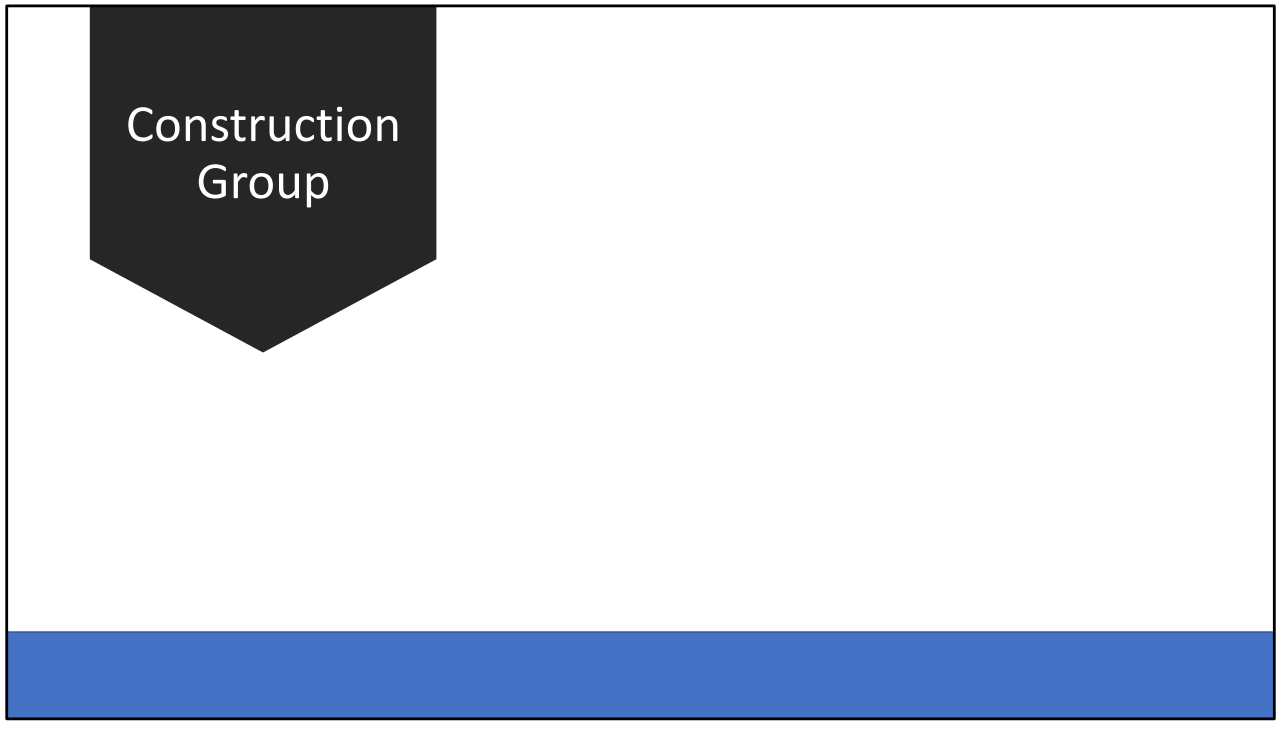
- Receives and dispatches gas emergency calls
- Monitors Operating Conditions
  - Pipeline pressures
  - Volume and flow rates

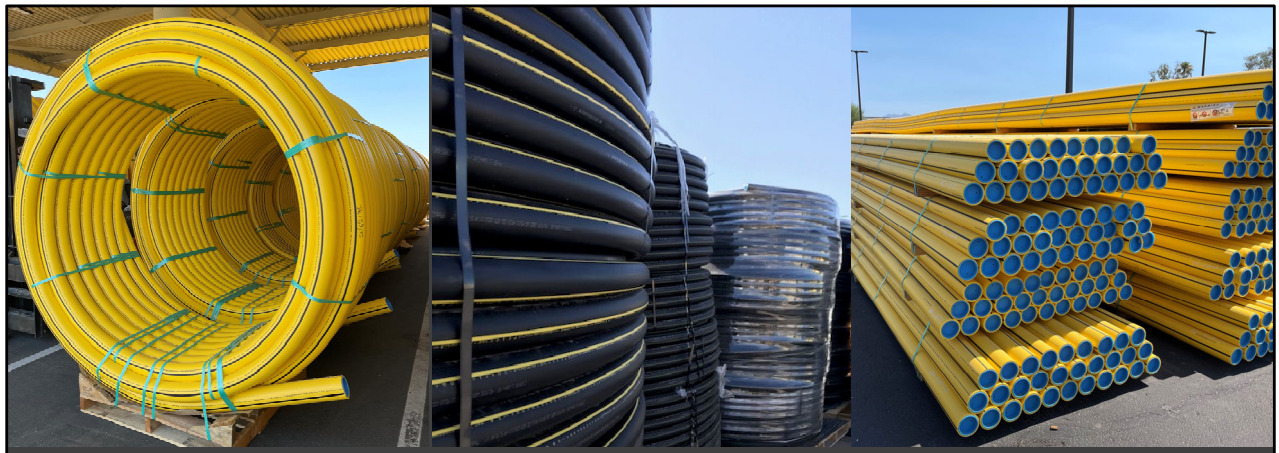
Pipeline operating conditions are monitored 24 x 7



Pipeline operating conditions are monitored 24 hours a day, 7 days a week by personnel in control centers using a Supervisory Control and Data Acquisition (SCADA) computer system. This electronic surveillance system gathers such data as pipeline pressures, volume and flow rates and the status of pumping equipment and valves. Whenever operating conditions change, an alarm warns the operator on duty and the condition is investigated. Both automated and manual valves are strategically placed along the pipeline system to enable the pipeline to be shut down immediately and sections to be isolated quickly, if necessary.

This may include remote operation of a pipeline.


Construction
Group



Distribution Polyethylene Pipe

The bulk of our main and service piping is a special grade of high-density polyethylene material. In many respects, it can be more durable, in part because it is resistant to corrosion. The vast majority of our mains are 2-4 inches in diameter, and most service lines average ½-1 inch in diameter. The average main and service operate at or below 60 psi.

Pipe Materials

Natural gas piping comes in different sizes, materials, and colors. The following three slides illustrate the different types of piping materials you may encounter in a natural gas transmission or distribution system.

Steel Pipe

We protect steel pipe from corrosion:

- Coating on the pipe
- Cathodic protection

We do use steel pipe when the situation calls for high pressure. We protect the pipe from corrosion by ensuring a special coating is on the pipe, and by cathodically protecting the line by impressing a **very weak** electric current. Properly protected steel pipe can last 75 years or more. This photo shows the inspection of the pipe's coating to ensure there are no imperfections prior to installation.

Emergency Response Calls

- 2nd party & Third-party damage
- Gas Leaks
- Gas Odors
- Carbon Monoxide

Each call is treated as an Emergency.

We respond to thousands of emergency calls each year, ranging from minor problems dealing with a customer's appliance, serious leak calls, and reports of carbon monoxide. Each call is treated as an Emergency.

Emergency Response

- Safety comes first- for customers, employees, the public & the environment
- Incident Response takes precedence

We are committed to providing safe, reliable service to our customers. When an emergency occurs, Incident Response takes precedence. During the incident, our first priority remains protecting the safety of customers, the public, emergency responders, and our employees.

Pipeline Operator Responsibilities

- Respond
- Assess
- Implement ICS
- Coordinate with police & fire
- Establish a safety perimeter
- Eliminate sources of ignition
- Determine leakage spread
- Shut down flow, make repairs, aerate
- Restore service

- We respond to all incidents to ensure public safety.
- First-person on the scene will assess the situation.
- That person will implement Incident Command System (ICS) and coordinate with fire and police departments.
- We will establish a safety perimeter and eliminate sources of ignition.
- If a leak, we will determine the leakage spread.
- We will shut down the flow of gas, make repairs, and aerate residual gas from the soil if necessary.
- Finally, we will restore service to any affected customers.

When Do We Need Your Help?

- Fire
- Line-break
- Explosion

- Odor complaint
- Carbon monoxide
- Underground leak

There are many types of natural gas incidents that may require the assistance of First Responders.

- Fire
- Line-breaks
- Explosions
- Odor complaint
- Carbon monoxide
- Underground Leak

Emergency Responders Actions

- Notify pipeline dispatch immediately
- Traffic control and evacuation assistance
- Secure area of leak, damage, or ignition (tape off – **never use flares)**
- Remove sources of ignition
- Monitor for signs of migration
- If ignited, let it burn unless lives are at stake

Potential Impact Radius (PIR)

8” line operating at
720 PSIG =
PIR 160’ Radius

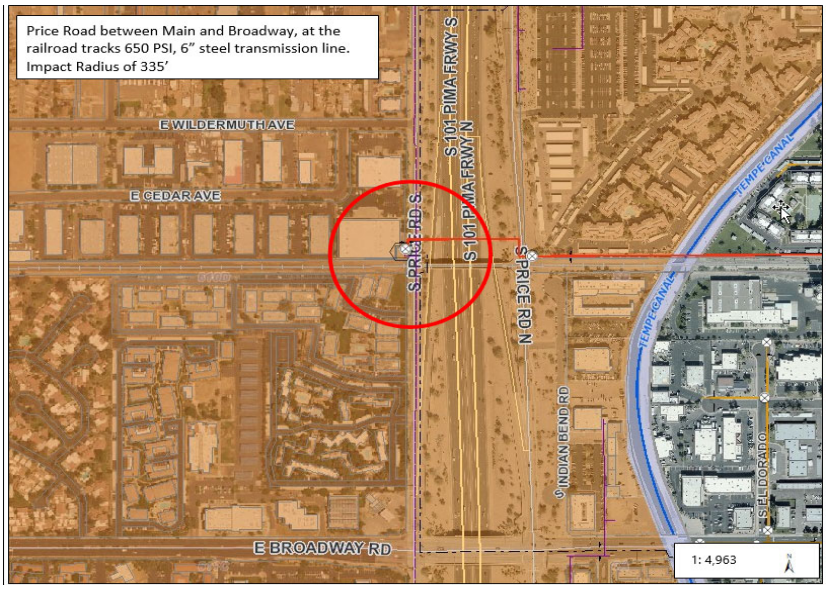
PIR circle showing 160-foot radius based on an 8-inch line operating at 720psi.

PIR (Cont.)

Should an ignition occur, the circle indicates the potential heat zone with a radius of 335’ of a 6” line operating at 650 psi.

The following are impacted:

- Homes
- Businesses
- Streets
- The Freeway
- The Railroad



What Will We Require Of You?

Coordinate	Coordinate with the gas operator first responder and brief them on the situation
DO NOT attempt	DO NOT attempt to close system valves
Extinguish	If extinguishing is necessary, dry chemical is preferred
Monitor	Monitor for signs of migration to adjacent structures
Watch	Watch for other utilities that could be affected

Remember…

- Migration (Gas will follow the path of least resistance; check inside structures, sewers, conduits, etc.)
- Static electricity can ignite gas vapors.
- Gas can become trapped in confined spaces, vessels, pipes, etc.
- Joint trenches with multiple utilities pose unique problems.
- Unidentified or suspicious persons should be investigated.

Line-Break Assistance

- Provide access route.
- Secure affected streets.
- Evacuate, as necessary.
- Eliminate sources of ignition, BUT….
- Do NOT turn off/move equipment!
- DO NOT CLOSE any valves!
- Electric, Other Utilities, and Emergency Responders, please coordinate with Utility Command.

Vehicle Damage to Natural Gas Facility

- Gas Operators may need assistance with SCBA.
- Vehicle instability and potential for ignition major concerns.
- Operating pressure of facility has a bearing on control methods.
- Other hazardous materials may be present – DO NOT OPERATE ANY VALVES.

Odor Complaints & Underground Leaks

Customers sometimes call us when they think they have detected a leak, and sometimes they call 911. Gas companies and emergency responder agencies respond promptly and evacuate when appropriate to ensure public safety.

Natural Gas Odor/Leak Incidents

- Call the pipeline operator on all gas odor complaints.
- Evacuate as necessary.
- Establish a safety perimeter.
- Eliminate sources of ignition, BUT….
- Do NOT turn off/on switches or appliances!
- Assist the Operator’s emergency personnel.

Leak Detection Equipment

Gas Rover

Picarro
(AMLD)

Combustible Gas
Indicators (CGI)

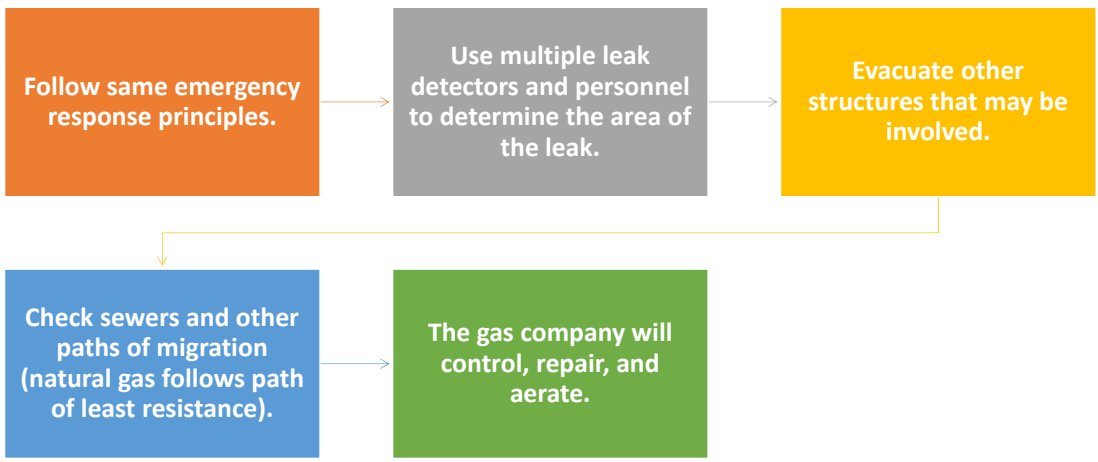
We have several pieces of leak detection equipment that we can use to locate a gas leak.

1. **Gas Rover** - A gas rover facilitates the rapid search for underground leakage, is intrinsically safe for indoor use and will detect ***both*** natural gas and carbon monoxide. When using a gas rover for underground leak investigation, gas responders no longer need to place sampling bar holes every 10 feet around the base of a structure, saving time while maintaining safety. Once a natural gas indication is detected, we will bar-hole and use the same instrument (or a gas ranger) to obtain specific underground readings—concentration and leak migration.

2. Picarro– An AMLD advanced mobile leak detection vehicle

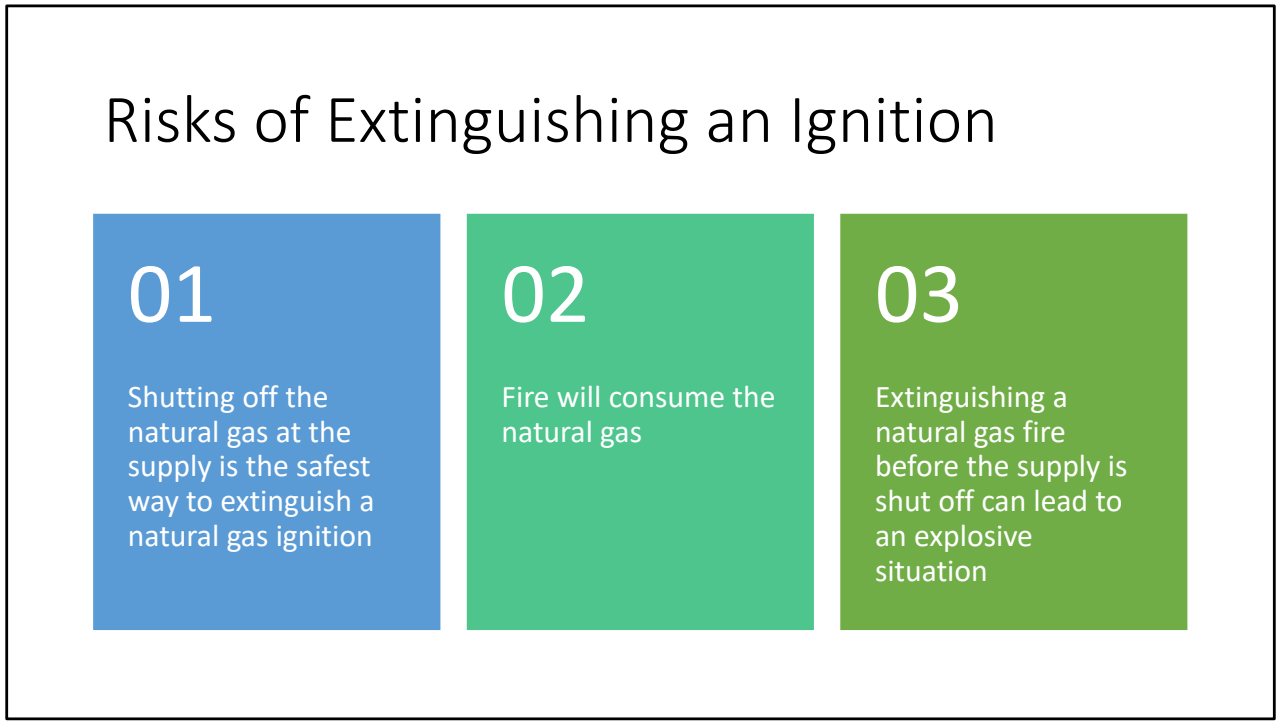
3. **Combustible Gas Indicators (CGI)** - At line breaks, you will more often see our gas responders bar-holing and using a CGI because the gas rover in its search mode is very sensitive. We would be getting continuous indications.

Gas Leak with Migration



House Fires

- Shut off meter valve, if possible
- Combustible gas indicators will be used to check for gas migration
- Meter must be secured/locked off (if house or house piping is damaged)



When ignition occurs, the fire consumes natural gas, reducing migration. The fire also provides a visual indication of where the gas is escaping from the pipe.

Shutting off the gas supply is the safest way to extinguish a natural gas fire. However, even after the supply is shut off, gas will continue to escape and migrate from the pipe for some time.

If it becomes necessary to extinguish a natural gas fire before the gas flow can be stopped, a dry chemical is preferred. This should be done as a last resort, as unburned gas will continue to migrate and create a potential explosion hazard.

No matter the ***TYPE OF GAS INCIDENT***, all gas emergencies must be investigated and secured by the pipeline operator.

Our action is mandated under federal code, which requires all incidents and emergencies to be investigated.

1. Gas incidents involving gas meters, regulators, pipes, odors, etc., are covered under this code.

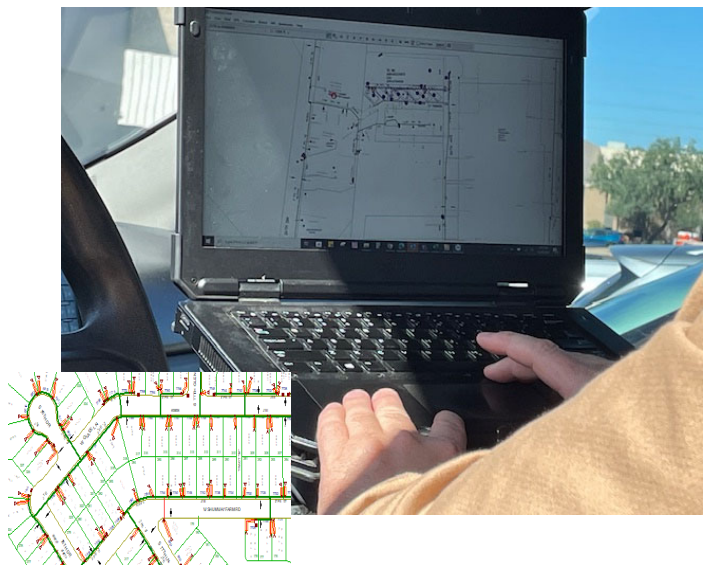
2. Depending on the scope and nature of the call, personnel with different specialties and expertise will be called upon to control the incident or emergency.

If a gas appliance is involved in a gas incident, the appliance and the gas piping within the home must be investigated and secured by gas utility personnel.

Emergency Response Vehicles

Responding vehicles are similar in design and will be identified with a company logo, except SWG responding supervisors, who will respond in unmarked trucks but will still carry company identification.

Operators can access field manuals and gas system facility maps on electronic devices.



Operators use electronic devices in the field to access detailed information about their gas systems. This includes facility location, size, type, pressure levels, and installation dates. The system also provides customer information and appliance details.

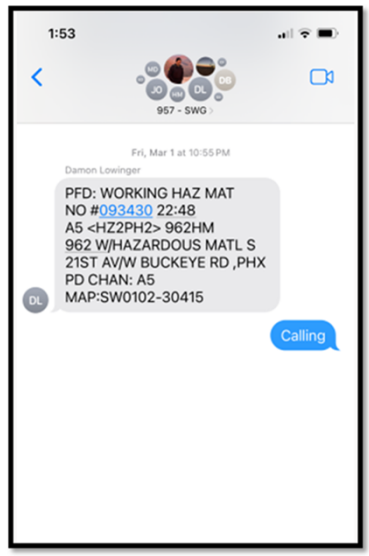
Mobile Command Centers

The Mobile Command Trailer is designed to operate as a remote EOC or command post during major incidents. Its portability and size allow it to be utilized at the scene of any gas-related incident.

957 Text Group

- Created by Building Relationships
- Unofficial Source of Communication
  - Quick Communication
- Great Value to Emergency Response Time

Southwest Gas



Compliance and Customer Service Group

True or False

Is it considered trespassing for a gas operator or their contractor to enter a customer's yard?

FALSE

Arizona Revised Statutes (A.R.S.) 40-431 Title 40 - Public Utilities and Carriers

Allows for duly appointed and authorized officer or agent of a public service corporation may, at all reasonable times, enter any premises using the product of such corporation for the purpose of inspecting and examining the property of the corporation, or for ascertaining the quantity of its product consumed.

A person who knowingly prevents or interferes with such officer or agent entering such premises or making such examination or inspection is guilty of a class 2 misdemeanor.

What are the different ways to identify if there is natural gas in the area?

Pipeline Markers

Indicate the area of pipeline operations.

*They Do **NOT**:*

- Show the exact location of the pipe.
- Indicate pipeline depth.
- Indicate pressure

A right-of-way easement is an agreement between a landowner and a pipeline company that allows the pipeline system to run through the property.
As you can see on the slide, many of our pipeline companies like the right of way to be 'brushed back' or free and clear of any deeply rooted plants,
trees, or permanent structures.

Pipeline markers will list three pieces of information

1. Pipeline owner
2. Material being transported
3. 24-hour Emergency contact number

Utility Identification

RED:
Electric

YELLOW:
Gas, Oil, Steam

ORANGE:
Communications

Blue:
Potable Water

Purple:
Reclaimed Water

Green:
Sewer/Drainage

PINK:
Survey Marks

WHITE:
Proposed Excavation

You'll know what's below by the different flags, stakes, or paint.

Natural Disasters

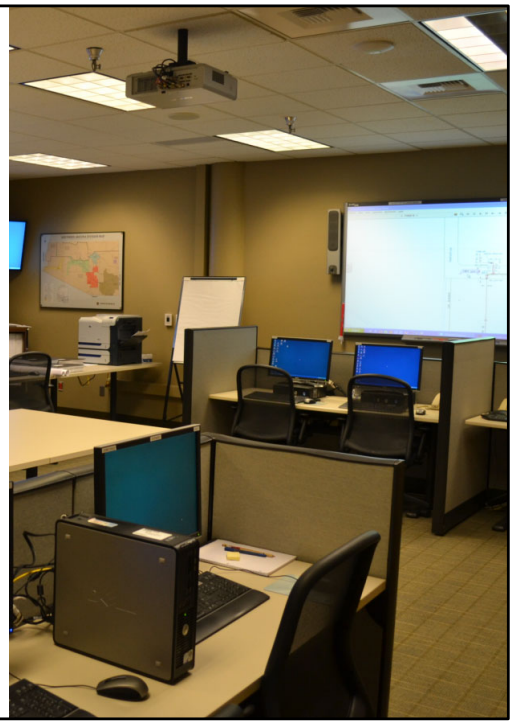
Natural disasters are unlikely here in the Southwest, but we have seen earthquakes and flooding, mainly during the monsoon season. Most of our pipe is below ground, but there are several pipe crossings under washes and rivers and suspended from bridges.

Here is an example of a regulator station completely submerged in water. In situations like this, we must isolate our facilities if conditions threaten the integrity of pipes or systems.

Note: the water level was at the yellow line in the picture on the right, completely submerging the regulator station.

Emergency Operations Center (EOC)

During large-scale incidents, Operators will convene at their EOC-designated location or on Teams Virtual platforms to provide support to field personnel and other company personnel.



Train Derailments

Both pipelines and rail are used to transport energy resources.

When responding to train derailments, not only is cargo a concern, but it is important to be aware of underground pipelines in the area.

Cherry Valley, IL in June 2009

Check for line markers in the area and call the operator listed on the marker so they can evaluate their pipelines to determine if damage has occurred.

The Cherry Valley derailment caused damage to a 12-inch transmission pipeline buried 11 feet deep with a 16-inch-diameter casing, installed well below the minimum requirements.

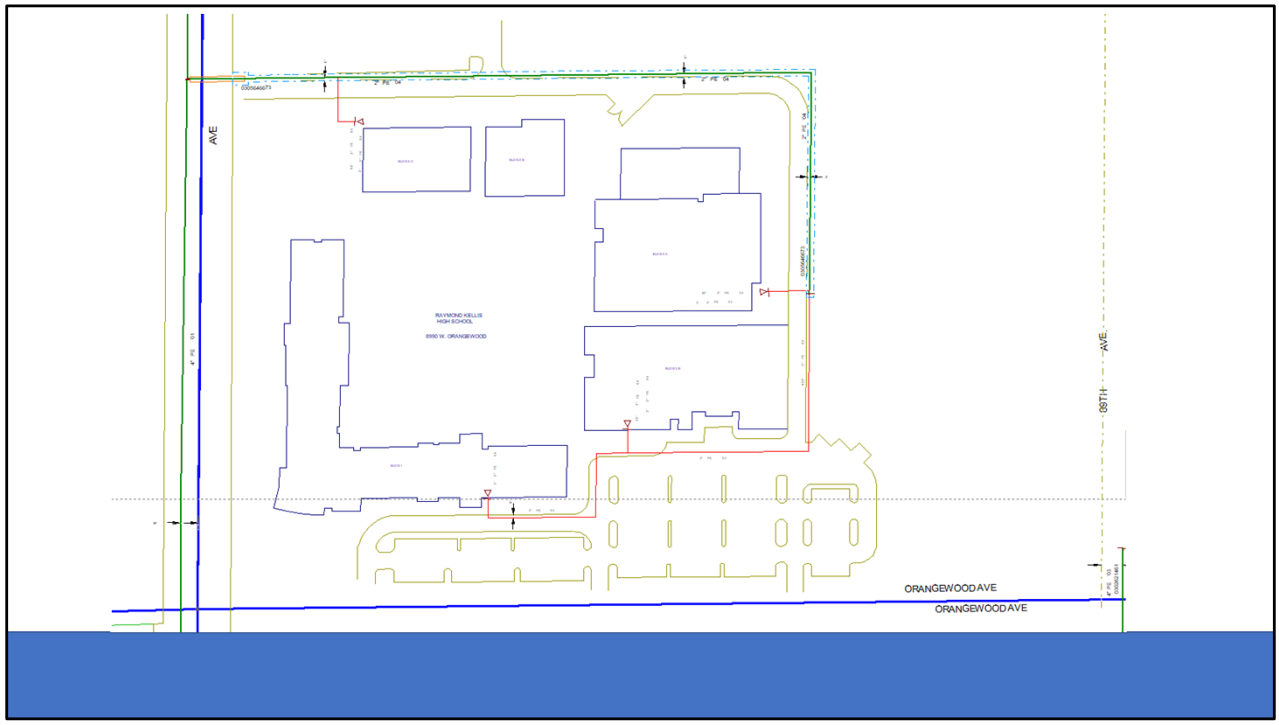
Incident Tabletop Exercise/ Discussion

Mike Militello, SQTQ Specialist

Southwest Gas Construction

Natural Gas Explosion

A 2-inch bore gas line was struck during operations, resulting in a fatal incident that claimed the life of one firefighter. The strike occurred after the contractor failed to communicate with the ELM Locator before excavation. No safety perimeter was established at the scene, and potential sources of ignition were not identified or controlled, significantly increasing the risk. Compounding these issues, the local gas company did not arrive on scene until approximately 55 minutes after the initial incident, delaying mitigation efforts and contributing to the severity of the outcome.



An odor complaint at Ironwood High School prompted the evacuation of the entire campus, raising important questions about the appropriateness and alignment of the response. Given that the source of the odor was unknown at the time, the decision to evacuate raised the issue of whether this action was necessary or if alternative protective actions, such as shelter-in-place, could have been considered. An unidentified odor can also present a security concern, as such complaints could be used to divert attention or initiate disorder during an active shooter or other hostile event. This highlights the importance of evaluating whether the school's emergency operations plan clearly distinguishes between and integrates responses for natural gas emergencies and security threats, ensuring staff and responders can make informed, rapid decisions that balance safety, security, and continuity of operations.


Rsk Drama Booster Club
Raymond S. Kellis High School
N 89TH AVE
N 88TH LN

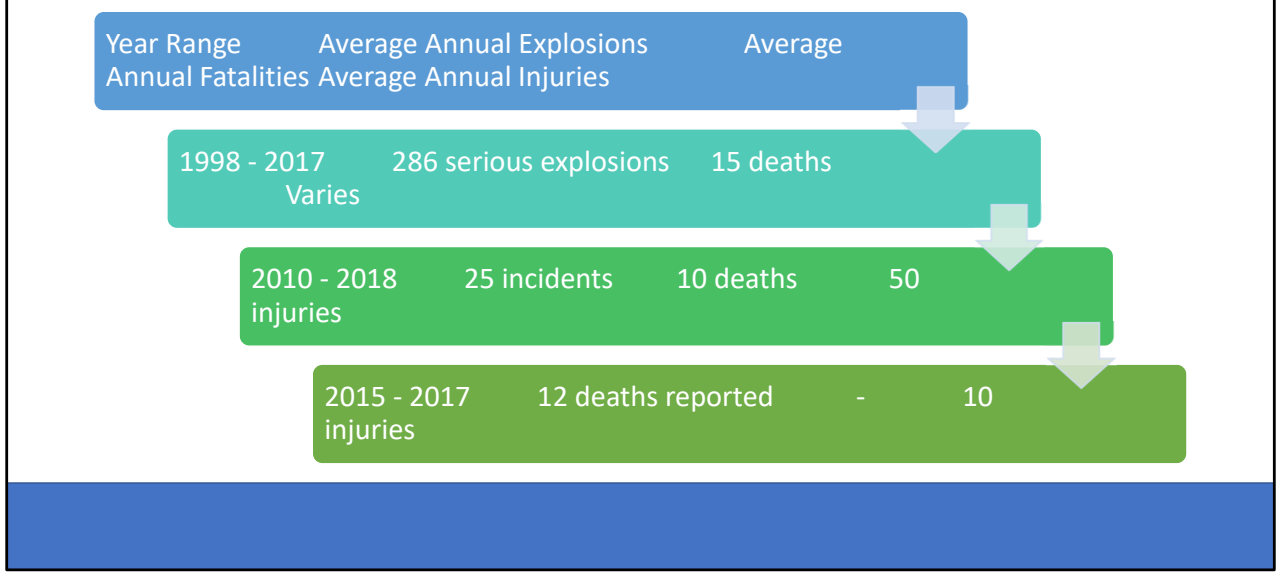
Electrical Fires

Electrical fires account for approximately 51,000 incidents annually in the U.S., resulting in nearly 500 deaths and over $1.3 billion in property damage.

These fires are often caused by issues such as faulty wiring, overloaded circuits, and misuse of electrical appliances.

Natural gas is widely recognized as a comparatively safe energy product when evaluated against other common hazards such as electrical fires and explosions. National data shows that electrical incidents occur far more frequently, with approximately 51,000 electrical fires each year resulting in an estimated $1.3 billion in property damage. In contrast, serious natural gas–related explosions are relatively rare, with about 286 significant incidents annually and roughly $150 million in damages. These figures highlight that while any energy source carries inherent risk, natural gas incidents occur far less often and result in substantially lower overall losses compared to electrical fires. When properly installed, maintained, and managed, natural gas remains a reliable and safe utility, particularly when paired with effective detection, emergency response, and public awareness measures.

Natural Gas Explosions



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Additional Resources

National Pipeline Mapping System	npms.phmsa.dot.gov
Pipeline and Hazardous Safety Administration (PHMSA)	phmsa.dot.gov/safety-awareness/pipeline/safety-awareness-overview
Arizona Corporation Commission	azcc.gov/divisions/safety
Pipeline Emergencies	pipelineemergencies.com
Pipeline Association for Public Awareness Training	pipelineawareness.org/stakeholder-resources/emergency-responder-training-resources/

Key Takeaways

- NEVER ASSUME 
- LOOK AT THE BIG PICTURE 
- DO NOT OPERATE GAS FACILITIES UNLESS TRAINED 
- BE AWARE OF EMERGENCY POLICIES AND PROCEDURES 

Key Takeaways (Cont.)

Understand	Understand local pipeline companies' emergency response capabilities.
Consider	Consider how those capabilities complement other emergency response agencies.
Establish	Establish a working partnership NOW rather than at the scene of an incident.
Provide	All operators can provide your agency with special training sessions for your agency.

QUESTIONS?

Thank you for your service!