



Pipeline Emergency Preparedness & Training: Overview of the NVFC/PHMSA FD PREPP Toolkit

The National Volunteer Fire Council (NVFC) and the Pipelines and Hazardous Materials Safety Administration (PHMSA) recognized the need to raise awareness and readiness for first responders regarding pipeline emergencies. To aid in this task, they developed the **Fire Department Pipeline Response Emergency Planning & Preparedness (FD PREPP) Toolkit**. The FD PREPP Toolkit has been developed to assist volunteer fire departments in their training efforts and increase their awareness and operational capabilities for responding to pipeline incidents. This free toolkit provides first responders with templates for developing Standard Operating Procedures (SOPs), checklists, and other resources to aid in various aspects of pipeline emergency response.

Tailoring pre-planning activities to your area of jurisdiction is a critical step for successfully responding to any pipeline emergency. The FD PREPP Toolkit Pre-planning information includes a Risk Assessment Plan checklist that can be helpful in determining potential impacts from pipeline emergencies to the local area, as well as draft Pipeline SOPs to assist emergency responders in developing and enhancing local policies.

The toolkit references standards and regulations pertaining to the pipeline industry. The current National Fire Protection Association (NFPA) standards related to hazardous materials and Recommended Practices on handling releases of flammable and combustible gases are linked within the toolkit, as well as pertinent Incident Command System (ICS) forms. In addition to these, pipeline industry Recommended Practices are outlined as well.

Specific directions where volunteer fire departments can find training resources are included in the toolkit. First responders

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Best Practices

“Our preparedness focus has been on updating our Local Emergency Operations Plan and Hazard Mitigation Plan to address changes in the operating environment and using them to drive training and mitigation strategies.”

“Our department attended a pipeline emergencies training with other local departments at the Kinder Morgan Claysville/Cumberland compressor station.” - **Alan Killian, Cumberland VFD, Cumberland, OH**

“We hold weekly HAZMAT drills and include regional response partners, a couple of these drills each year include pipeline response scenarios.”

“We attend local operator-sponsored training meetings, and are active in our local LEPC.” – **John Cole, El Paso County OEM, Colorado Springs, CO**

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are directed to **NASFM's Training Portal**, the **Pipeline Association for Public Awareness's (PAPA)** tabletop scenarios, operator provided trainings, and state Pipeline Operator and Emergency Responder Initiative (PERI) programs.

For use during a pipeline emergency response, a workflow job aid is included as an outline for the first 60 minutes of the response. This document specifies response priorities, tactical considerations, and provides resources for further information available to first responders. Additional response resources included in the toolkit are: Site Safety Plans, Pipeline Incident Command Organization Chart, Pipeline Incident Thought Process Workflow, Pipeline Products Flammability Reference Charts, and a Safe Response Checklist.

The FD PREPP Toolkit is a comprehensive reference tool for first responders to utilize in the event of a pipeline emergency. With everything from pre-planning forms, training resources, and checklists for managing the actual response effort included, this toolkit is an invaluable source of information for fire departments. To access the FD PREPP Toolkit, click **here**.

Pipeline Emergency Response Tactics: Tailboard Scenario –Responding to a CO₂ Incident

A front has passed through the area resulting in a significant temperature change. Its 7:00 on a Friday morning, and patchy fog is prevalent in the area. A contractor crew from "Speedy Construction" is hastily finishing excavation for a billboard footing adjacent to the northbound lanes of Interstate 101.

As the track hoe continues to dig, a loud noise is heard, and the inattentive spotter standing adjacent to the excavation is thrust on his back, and a large vapor cloud is being released. The track hoe operator flees the scene.

The local 911 operator sends out a dispatch, "Engine 7, Service 3, Rescue 1, and EMS 4 respond priority one to mile marker 68 northbound I-101 for reports of a pipeline release and a vapor cloud. Be advised that traffic is reported to be congested."

Upon arrival, Engine 7 establishes command and begins scene size-up. A large vapor cloud is observed being released in the vicinity of a piece of construction equipment. In addition, a victim is observed to be prone on the ground next to the excavation. No one else is observed to be in the incident area.

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April is Safe Digging Month!

Please help us spread the word and reduce the risk of excavation damage. If you are planning to dig or excavate, or notice any activities along a pipeline right-of-way, please call 811!



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

PAPA Response Scenarios

The Pipeline Association for Public Awareness has developed nine scenarios for emergency responders tailored to pipeline incidents. To access these free scenarios, go to: <https://training.pipelineawareness.org/scenarios.html>

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Initial combustible gas indicator (CGI) readings in the area indicate there are no concentrations of flammable gases.

- What are the response priorities at this point?
- What are the safety concerns?



Personnel from Service 3 report seeing a pipeline marker with the following label: “WARNING, CARBON DIOXIDE PIPELINE” near the area where the leak is occurring. The Incident Commander asks dispatch to contact the pipeline operator via the phone number listed on the marker and request company personnel to respond.

- How have the response priorities changed?
- What are the hazards/safety concerns associated with the incident at this point?
- What precautions need to be taken to effect a rescue of the injured individual?

Background Considerations

There are over 4,500 miles of carbon dioxide (CO₂) pipelines spanning the US and Canada. While carbon dioxide releases do not pose a flammability risk, there are other hazards that should be considered, including noise, oxygen displacement and the risk of freeze-related injuries to exposed skin.

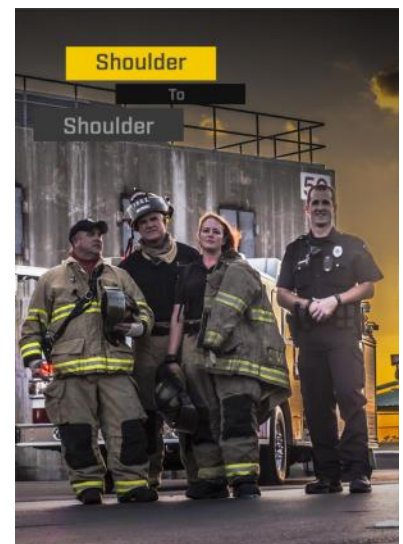
Pipelines are the safest mode of transportation for hazardous liquids, CO₂ and natural gas products. However, as evidenced in this scenario, a pipeline incident may result in a release of a product, resulting in unique risks to first responders. Take the opportunity to identify the pipeline operators and products transported within your jurisdiction and contact them for specific emergency response information and training. To be put in contact with Kinder Morgan personnel in your area, or for more information on CO₂ pipelines go to PA-inforequest.kindermorgan.com.

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First Responder Training Video Series

Learn how to safely and effectively respond to a pipeline emergency, how pipelines work, how different products impact response, response leading practices, how to better prepare to respond to pipeline incidents and roles in pipeline response. Videos feature interviews with pipeline and emergency response experts, covering a wide variety of emergency response disciplines.

* Videos available at www.shoulder2shoulder.tv

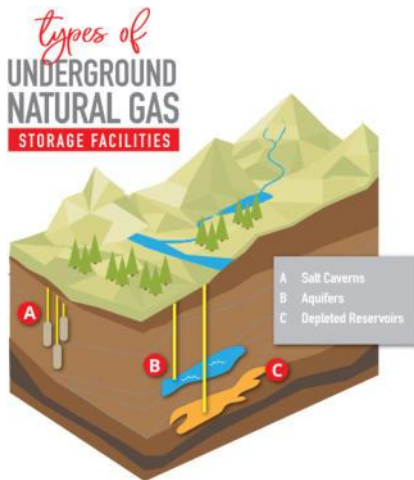


www.shoulder2shoulder.tv

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Overview of Pipeline Systems: Overview of Underground Natural Gas Storage

Natural gas is one of the most widely used fossil fuels and is critical in meeting our country's energy needs. What you may not realize is that after production, natural gas is often stored underground prior to use. The United States has approximately 5 trillion cubic feet (Tcf) of natural gas storage capacity that can deliver 118 billion cubic feet per day (Bcf/d). There are three main types of underground storage facilities: depleted reservoirs in oil and/or natural gas fields, aquifers, and salt cavern formations.



The majority of current natural gas storage in the United States utilizes depleted natural gas or oil fields that are in relative proximity to areas of consumption. The primary advantage of using depleted fields is the ability to repurpose existing wells, gathering piping and pipeline system connections.

More frequently found in the Midwestern portion of the United States, natural aquifers have been converted for storage of natural gas. Aquifers tend to be suitable for natural gas storage if the sedimentary layer has a cap of non-porous rock.

Salt caverns used for natural gas storage are typically found in the Gulf Coast areas and are derived from salt dome formations. Salt caverns have also been constructed in bedded salt formations in areas of the Northeast, Midwest, and Southwest.

Underground natural gas storage facilities are typically owned and operated by natural gas transmission pipeline companies. There are approximately 400 active underground storage facilities in the continental United States managed by approximately 120 operators. One interesting fact is that often the owners of the storage facilities are not the owners of the stored natural gas. Most consumable natural gas in storage is maintained under a lease agreement with shippers or other end users of the product. In this arrangement, end users can withdraw natural gas from storage for system balancing or during periods of peak demand.

Emergencies involving underground natural gas storage facilities are rare but can occur. Facility operators are required by federal

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WISER

WISER 5.2 Update Release Includes:

- *CHEMM Intelligent Syndrome Tool (CHEMM-IST) 2.0
- *Globally Harmonized System of Classification and Labeling of Chemicals (GHS)
- *Many smaller updates and bug fixes

A set of WISER tutorial videos can be viewed [here](#) and videos can also be found in the training section of the [NLM YouTube Channel](#).



NPMS iPhone app for PIMMA and Updates

The National Pipeline Mapping System (NPMS) has iPhone app for PIMMA, can be accessed by searching for "pipeline information" on the App store. New High Population Area (HPA) and Other Population Area (OPA) datasets are now available for download from the Population Data Page.

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regulations to have site security and safety plans, emergency response procedures, blowout contingency plans, and training programs. It is paramount for local emergency responders and operators of storage facilities to have on-going emergency preparedness dialogue, training, and exercises. For more information please contact Kinder Morgan at **PA-inforequest.kindermorgan.com**.

Pipeline Emergency Response Tactics: Overview of Pipeline Safety Measures and Systems

Pipelines are the safest way to transport our nation's energy, but most people may not be aware of operators' multi-layered approach to pipeline safety. Supervisory Control and Data Acquisition (SCADA) systems, regular rights-of-way (ROW) patrols, pipeline inspection technologies, pipeline maintenance practices, and damage prevention work in tandem to keep pipelines safe.

SCADA systems are an important component of pipeline safety. SCADA systems are sophisticated, computer-based technologies that allow operators to monitor the pipeline remotely-typically from a control center. SCADA systems monitor flow rates, operating pressures and the temperature of the product. SCADA allows operators to set certain thresholds, and once those levels are achieved, an alarm goes off and provides detailed information alerting controllers of a potential operational issue.

Another technology utilized by pipeline operators are intelligent inspection tools, such as smart pigs. These devices are used to inspect the pipeline, searching for any external and internal anomalies that may compromise the pipe's integrity. A smart pig is inserted into the pipeline, and is moved through the pipeline by the product's flow. Depending on the tool, these devices have the capability of detecting everything from miniscule dents in the pipe, to reduced or non-uniform wall thickness.

Regular monitoring of the pipeline ROW, via aerial, driving or foot patrol, is necessary to protect the pipeline from third-party damage. These patrols are conducted on a regular basis and allow pipeline operators to get "eyes on" the ROW, and ensure there are no unauthorized encroachments or activities occurring nearby. Aerial patrols also monitor environmentally sensitive areas, such as rivers

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NOTE

If you would like to request additional information, or to schedule a presentation or tabletop drill with Kinder Morgan, please fill out the form found at **PA-inforequest.kindermorgan.com**

NOTE

If you would like to be added to *The Responder* distribution list, please click [here](#)



First Responder Online Pipeline Training

To access the API-AOPL Emergency Response Team's free online training, click <https://nasfm-training.org/>

NOTE

To read past issues of *The Responder*, please go to the archived issues at http://www.kindermorgan.com/pages/public_awareness/The_Responder/archive.aspx

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or streams, to check for visible signs of erosion or leaks that may need to be further investigated.

While pipeline operators have a multi-faceted approach to pipeline safety, one of the more important ways we protect pipelines is by preventing digging damage. This starts with a simple, free call to 811 prior to digging. Emergency responders and the public can also report encroachments or unauthorized activity in their area. For example, if you notice someone digging near the pipeline and there are no locate marks in the area, contact the operator to report the activity. ■

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