



Preparing for a Pipeline Emergency as the Result of an Earthquake

Most people expect earthquakes in California, but did you know that the New Madrid Seismic Zone is one of the largest and most active earthquake areas in the United States? Stretching from Illinois to Arkansas, the zone spans parts of eight states and averages over 200 seismic events per year. It has historically had some of the most severe earthquakes when measured in shaking intensity, including an event in 1811 that many experts believe was the most intense earthquake to ever impact the U.S.

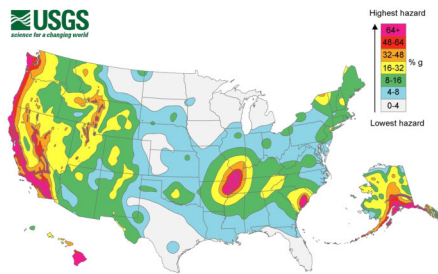


Photo courtesy of USGS

Though most earthquakes in this region are relatively small and only cause limited localized impacts, rare extremely large earthquakes can occur. In 2008, the Federal Emergency Management Agency (FEMA) warned that a serious earthquake in the region could result in "the highest economic losses due to a natural disaster in the United States", further predicting "widespread and catastrophic" damage across Alabama, Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and particularly Tennessee, where a 7.7 magnitude quake or greater would cause damage to tens of thousands of structures supporting water distribution, transportation systems, and other vital infrastructure such as pipelines. One of the key causes of infrastructure damage is from soil liquefaction. Similar to quicksand, shaking from earthquakes can cause certain wet or saturated soils to temporarily liquefy, potentially resulting in widespread ground settlement, lateral spreading, and surface rupture.

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USGS Earthquake Hazards

For general information about Earthquakes, visit the USGS Earthquake Hazards website (<https://www.usgs.gov/natural-hazards/earthquake-hazards>).

April is Safe Digging Month!

We want you to be aware of our pipelines and facilities and ask for your help in preventing damage to them.

As the start of digging season begins, please remember to call 811 prior to excavation activity- no job is too small to call! Immediately report any suspicious persons and/or activities, including unauthorized digging, near the pipeline to your local law enforcement authorities by calling 911.

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When conducting an all-hazards assessment, the risks associated with damage to pipelines from an earthquake should be considered, and pre-planned as appropriate. Steel and plastic pipelines tend to be more flexible than most people realize. However, when significant pipeline bending or strain occurs due to ground displacement, during and after an earthquake, pipeline failures can occur. Many CO₂, hazardous liquids and natural gas transmission pipelines are monitored by control centers that are staffed continually. Through sophisticated system control and data acquisition (SCADA) systems control center personnel have the ability to remotely monitor and operate critical pipeline facilities. In the event of a pipeline release, such as during a major seismic event, controllers can isolate pipeline segments and shut the line down. Natural gas distribution systems may or may not be monitored by a control center on a continual basis. However, on some service lines, distribution system operators have installed “excess flow valves” downstream from main lines that automatically isolate flow when the pipeline is severed.

From an emergency response perspective, earthquakes pose unique challenges since there is often no warning and these events can cause widespread devastation very quickly. Seismic events can produce tens to thousands of emergencies to respond to simultaneously, and can pose significant safety and personnel challenges for emergency responders. Making matters worse, earthquakes frequently set off a chain of emergencies that follow the initial event.

When responding to a seismic event, it is essential to conduct a quick and thorough situational awareness assessment. Some items to consider may be: the boundaries of the disaster area and access points; identify the specific hazards; evaluate available seismic information; the ambient weather conditions; initial response needs and damage assessment; the status of communications, transportation, and other critical infrastructure operations, specifically the energy sector, in the area.

Response agencies located within earthquake prone areas should identify the pipeline operators in their area and establish communications specifically regarding earthquake response procedures. **The National Pipeline Mapping System (NPMS)** is a valuable tool that can assist responders in identifying CO₂, hazardous liquids and natural gas transmission pipeline operators within a geographic area as well as associated contact information.

Sharing of response procedures, as well as participation in seismic event related tabletop exercises can significantly enhance

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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

https://www.youtube.com/channel/UC1Qv4arPbGluPt7j_JuETWw



Need to Locate Pipelines in Your Area?

To assist identification of transmission pipelines in your area go to the **National Pipeline Mapping System (NPMS)**.

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preparedness in earthquake prone areas. First responders should be aware of the types of product being transported in the area, as well as the physical indications of a potential release. It is also critical to be aware of which areas have businesses and residences or environmentally sensitive areas that could be impacted by a release.

To request a meeting with Kinder Morgan personnel in your area to discuss seismic events, or training opportunities, please go to: <http://PA-inforequest.kindermorgan.com>.

Establishing an SOP for Pipeline Emergencies

Standard Operating Procedures (SOPs) cover a wide variety of operations and response scenarios encountered by emergency response organizations. SOPs enhance consistency and safety by establishing predetermined (and approved) procedures for performing specific tasks, usually incorporating checklists. While response to pipeline incidents might not be as frequent as other types of incidents, responders should develop SOPs specific to these type of emergency events.

It is important to recognize that as with most emergencies, pipeline incidents can vary significantly in scope and scale. SOPs developed to address pipeline emergency response should maintain suitable scalability. While many response agency SOPs can be developed strictly through internal resources, pipeline operators should be consulted to assist in developing SOPs regarding response to pipeline emergencies.

The first step in creating a pipeline emergency related SOP is to determine the types of pipeline systems (CO₂, hazardous liquids, natural gas transmission, natural gas local distribution) that operate within the agency's jurisdiction. To assist identification of transmission pipelines in your area go to the **National Pipeline Mapping System (NPMS)**. Consideration should be given to establishing separate SOPs when pipelines in the area transport product with different physical characteristics that require different response strategies.

Each pipeline operator should be invited to participate in the SOP development process. In addition to being a source of information regarding the physical properties and characteristics of the materials being transported, pipeline operators can share emergency response plans and procedures that can aid with development of the SOP. A robust SOP includes how emergency responders and pipeline operator personnel will participate in a unified incident

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Best Practices

"We hold a full-scale hazardous materials exercise every 3 years. A tabletop each year with all responders".

"We try to send a couple members to the pipeline trainings, and discuss procedures throughout the year".

"We conduct annual training in our PSAP using the materials provided by Kinder Morgan and have developed a continuing education module with a quiz for all of our dispatchers to review annually".

Land Use Planning – Local Government Guidance

PIPA:
https://primis.phmsa.dot.gov/comm/pipa/pipa_audience_local_government.htm

Note:

To request additional information, or to schedule a presentation or tabletop drill with Kinder Morgan, please fill out the form found **here**

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command system structure, expectations of pipeline first responders, and mutually agreeable defensive and offensive actions to be taken by response personnel. For example, what actions will be taken when responding to gas leaks, pipeline explosions, incidents at Terminal facilities, or CO₂ ruptures? Will emergency responders engage in valving off single residential or commercial meter sets, and has this been coordinated with the local distribution company? Scenario-based discussions are critical for effective coordination and SOP development.



Response capabilities are going to vary widely by organization, location, size, and culture. That's why an SOP for response to pipeline emergencies must be tailored to the individual department. Coordination with the pipeline operator in your area is paramount. Procedures within SOPs should provide guidance that emphasizes specific actions that will be taken by the first responders and actions that will be taken by the pipeline operator.

Local Government's Role in Risk-Informed Land Use Planning



As the need for energy in our nation grows, so does the requirement to install new pipelines to transport energy products to meet that demand. Traditionally, pipeline operators seek to install new pipelines in sparsely populated areas. However, as communities

grow and urban sprawl occurs, pipelines that were once rural can become surrounded by residential and commercial development.

As areas along pipeline rights-of-way become more active and congested, the risk from excavation damage increases, from both residential and contractor activities. Damage from excavation is one of the leading cause of pipeline incidents.

To avoid potential conflicts and issues associated with community growth, local government planning and development officials should engage in risk-informed land use planning. A key in this process is

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WISER

NEW- WISER 6.0 Released! It includes:

- *Sharing and collaboration across all platforms
- *More than 60 new substances
- *Various improvements to WISER search functionality
- *Protective distance improvements, including UI updates and improved support outside of the U.S.
- *PubChem data updates

A set of WISER tutorial videos can be viewed [here](#).



NPMS iPhone app for PIMMA and Updates

The National Pipeline Mapping System (NPMS) now offers Tribal Government applications for PIMMA applicants and GIS Data requests. Tribal Lands are now viewable on a pipeline map in PIMMA or the **NPMS** Public Map Viewer.

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on-going and active communications between pipeline operators and planning officials. As new developments are planned, proximity to existing pipelines should be included in the assessment process to determine potential effects on required setbacks, right of way build-ups in advance of grading activities, and siting of retention ponds or other drainage systems. Early intervention of potential construction conflicts during the design phase can mitigate risk to existing infrastructure and eliminate costly revisions as the project progresses.

When local government planning officials are presented with development plans that involve construction in proximity to existing pipelines, risks during and after construction should be identified and discussed among the developer, construction firms, and the pipeline operator. Local planning and development officials should consider including emergency management and fire department officials in the planning process to solicit their input related to the risk potential associated with the development.

Pipelines and development growth can, and do, coexist in a safe manner. Communications related to damage prevention and risk informed land use planning between developers, local officials, pipeline operators, and construction firms reduces the risk of conflicts and enhances safety for all.

Phishing Attacks Target Local Governments and Organizations

Unfortunately, in today's technological era, large-scale, highly sophisticated phishing attacks have become increasingly common for the general public, public officials and corporations alike. Phishing emails are designed to trick individuals into opening an email attachment, click a link within an email, or download a malicious file. Phishing is not just something that corporations have to deal with, but such attacks are a very real threat to anyone using a computer or internet-connected device.

Ransomware has been found in government response systems across the country. In fact, it's been reported that state-targeted phishing attacks have experienced a "fivefold increase...in the last three years", according to the National Association of State Chief Information Officers.

These campaigns can target employees of organizations who continually correspond with an entity or individual. These scammers often appear to be related to organizations and businesses that recipients frequently work with, but they are in fact imposters who

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Suggest an Article for The Responder!

Is there a topic you'd like to see featured in the next issue?! Please click **here** to suggest your topic for The Responder newsletter!

Did you know ...

811 is the nationally recognized three digit number to provide notification of pending excavation activity so that utilities can properly locate underground assets. Help us spread the word for safety ...**Call 811 before you dig!**



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

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use elaborate email schemes to elicit money or perpetrate malicious acts. These scammers have used phishing to delve into company systems and pretend to be a commonly used vendor. They then request a bank account number be changed for their direct deposit, perpetrating the theft.

One such incident in Florida occurred when a Police Officer simply clicked on a link in an email he was sent, which allowed a perpetrator to inject ransomware into the city's system, locking the system until the city paid the ransom. To stop the attack, the city's cyber security team pulled all of its operations offline, including the 911 Dispatch system. This prevented dispatchers from being able to enter calls into emergency response systems, creating a very serious situation. Ultimately, in order to get their systems back online, the city's cyber security experts advised the city to pay the hacker's request of 65 Bitcoin (the equivalent of \$600,000) to regain control of their system. The City of Atlanta was victim to a similar situation to the tune of \$17 million.

One recent study concluded that the average downtime for a ransomware attack to local government's system is 9.6 days. Though this may not be viewed as a threat to our safety in typical terms, our computer systems and networks have become an integral part of daily life, and when these systems are compromised it endangers and affects everyone. Emergency responders, local government officials and private corporations all need to recognize the signs of phishing, and take this as a very real and serious threat to public safety.

Ways to avoid becoming a victim of a phishing attack:

1. Verify the organization's name is spelled correctly in the email address (i.e. Kinder Morgan may be misspelled Kinder Morgon)
2. Know that these attacks may look very real and will appear as legitimate communications. The email might suggest you update your VPN access, change your password, or look at new workplace policies.
3. Look for common warning signs such as poor grammar, misspellings, or a strange sender address or domain name.
4. If you aren't sure if you should open something, ask for help! If the email address looks like a Kinder Morgan address call your contact at Kinder Morgan or go to **<http://PA-inforequest.kindermorgan.com>**. If your organization or office/agency have cyber security experts or network security staff, they can help.
5. Update antivirus software and ensure that all systems have appropriate firewalls, email filters, and spyware installed. ■

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 **<http://PA-inforequest.kindermorgan.com>** or call us at 800-276-9927.



NOTE

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