

# Get The Facts: Pipeline Safety

## Q: What is the overall safety record of the natural gas industry?

The natural gas industry has an excellent safety record. And transportation by pipeline is the safest form of transportation. In 2007, there were more than 43,000 transportation fatalities in the United States. Of these, less than 0.03 percent was attributed to natural gas transmission and distribution pipelines. Please see the Department of Transportation's Bureau of Transportation Statistics web site for more information:

[http://www.bts.gov/publications/national\\_transportation\\_statistics/html/table\\_02\\_01.html](http://www.bts.gov/publications/national_transportation_statistics/html/table_02_01.html)

The safety of the public is, and will always remain, the natural gas industry's paramount priority. The natural gas industry operates an extensive system of 2.4 million miles of distribution and transmission pipelines that stretches across the country to provide service to 70 million residential, commercial and industrial customers. The design, construction, operation, inspection and maintenance of ALL operating pipelines are subject to state and federal regulations and requirements. For more information on the natural gas industry's safety requirements and work, please click on the following link:

<http://primis.phmsa.dot.gov/comm/SafetyStandards.htm?nocache=6621>

## Q: Who provides oversight to ensure that pipeline operators are complying with these safety regulations?

The Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) is the federal regulatory agency responsible for the oversight of pipeline safety in the United States. Click on the link below to learn more about PHMSA.

<http://primis.phmsa.dot.gov/comm/>

The pipeline safety regulations apply to all pipelines in the United States. Through annual certifications and agreements, individual states have enforcement responsibility for pipelines within their own state. The state agreement with PHMSA requires a state to adopt and enforce the federal regulations. These states may enforce both the federal regulations and their own regulations, which are consistent with, and at least as strict as, the federal regulations.

**Q: Tell me where I can find more information about the regulations that govern the natural gas pipelines in the United States.**

The regulations are posted at:

<http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=0a9201ef9fa229d3d3e7f54da724cf0&rgn=div5&view=text&node=49:3.1.1.1.4&idno=49>

**Q: Has there been a recent increase in the number of natural gas pipeline accidents occurring in the United States?**

Annual pipeline accident information starting in 1990 through 2009 is available at PHMSA's web site at: <http://primis.phmsa.dot.gov/comm/reports/safety/SerPSI.html?nocache=6572>.

Accident data from 2010 will likely be added sometime in 2011.

**Q: What causes natural gas pipelines to fail?**

Historically, excavation damage is the leading cause of most serious pipeline failures.

Accident information is grouped into eight cause categories: excavation damage, corrosion, natural forces, other outside force damage, material or welds, equipment, incorrect operation, and other. Accident cause information is available at PHMSA's web site:

[http://primis.phmsa.dot.gov/comm/reports/safety/SerPSIDet\\_1990\\_2009\\_US.html?nocache=7692](http://primis.phmsa.dot.gov/comm/reports/safety/SerPSIDet_1990_2009_US.html?nocache=7692)

**Q: How do I get access to maps showing the location of all the pipelines in my local area?**

PHMSA has created a National Pipeline Mapping System (NPMS) that shows the general location of all natural gas transmission pipelines and other pipeline facilities in the United States. This map is available to the public and can be accessed by clicking on the following link: <http://www.npms.phmsa.dot.gov/>. There is no map available to the public showing the location of natural gas distribution pipelines.

**Q: Explain the difference between transmission pipelines and distribution pipelines.**

In general, a transmission line is a larger diameter line operating at a higher operating pressure and transports the natural gas between states, counties, cities and towns.

Distribution pipelines are generally the smaller diameter lines at lower operating pressures that deliver natural gas directly to local homes and businesses.

**Q: What exactly is a “High Consequence Area” (HCA) and how can I tell if I live and work in an HCA?**

“HCA” is not a term associated with the safety or condition of a particular pipeline. Instead, this term was created by the public, regulators and industry personnel to improve pipeline safety by focusing comprehensive inspections on certain transmission pipeline segments. Transmission pipelines that are located in areas where people live and work or are known to congregate on a regular basis are then deemed as being in an “HCA.” By regulation, this subset of transmission pipelines then receives the greatest level of inspection and have an added layer of protection to avoid accidents that otherwise would have the greatest (negative) consequence on the public.

**Q: Are natural gas utilities doing anything to educate their customers and the public on pipeline safety issues?**

Yes. All natural gas pipeline operators are required to develop and implement a pipeline safety public awareness program to educate the public in the vicinity of the pipeline, as well as state and local emergency response personnel, public officials and excavators. Pipeline safety education methods are determined based upon the intended audience, but methods used include print materials, personal contact, telephone calls, public service announcements, community events and open houses. Pipeline operators continually review the public awareness materials and distribution methods to ensure the intended stakeholders are adequately informed and, when possible, collaborative efforts are identified.

The public awareness information includes: 1) pipeline purpose and reliability; 2) potential hazards and preventative measures taken by the operator; 3) leak recognition and response; and 4) emergency preparedness specific to each jurisdiction. Individuals living in the vicinity of a pipeline receive public awareness information at a minimum of once every two years.

**Q: What kind of testing is performed on natural gas pipelines to ensure these lines will not fail?**

There are several different types of inspections and testing that can be used to evaluate the condition of natural gas pipelines. Different types of inspections and testing methods are used, based upon a variety of factors for both transmission pipelines and distribution pipelines. The inherent differences that exist between distribution pipelines and transmission pipelines often dictate what type of inspection can even be considered by the pipeline operator.

**Q: Tell me more about the inspections being conducted for the transmission pipelines. Are all transmission pipelines being inspected or just those that are in an HCA?**

All existing transmission pipelines have some form of periodic inspection. The purpose is to obtain information on the pipeline to determine if it has a leak or if it is not receiving adequate protection from the threat of corrosion. In addition, pipeline right-of-ways are surveyed to ensure that population encroachment has not become an issue and that there are no excavation activities in the vicinity of the pipeline that may result in any damage.

In addition to these baseline inspections, the federal regulations do specify that the level of inspection must be more rigorous on transmission pipelines in HCAs. This type of integrity inspection can be done primarily by techniques known as In-Line-Inspection (ILI), Pressure Testing, or Direct Assessment. While these three techniques have some fundamental differences in their application and in what circumstances they can be utilized, they are all designed to provide the pipeline operator detailed and comprehensive information on the condition of the pipeline and whether or not repairs are necessary.

Due to the way pipeline systems are configured, there are actually tens of thousands of miles of transmission pipelines outside an HCA that have had this formal integrity inspection.

**Q: Is it true that only seven percent of all the natural gas transmission pipelines are being inspected, as has been cited recently by the media?**

No. All natural gas transmission pipelines are required to be designed, constructed, operated, maintained and frequently inspected in accordance with federal standards. In addition, state pipeline safety agencies require intrastate transmission pipelines to follow state specific regulatory requirements. For transmission pipelines that are in HCAs, federal regulations stipulate even more comprehensive inspections. Operators have voluntarily performed more than the required inspections of pipelines in HCAs. Transmission pipelines outside HCAs are required to be inspected by leak surveys, corrosion monitoring and patrolling.

**Q: When a large pipeline does experience a failure, how long does it take for the utility or pipeline operator to respond and make the area safe?**

This depends on a number of factors unique to the situation and it is impossible to pinpoint a specific time period. Pipeline operators work diligently throughout the year with the emergency responder community as they are often the first ones to respond to an incident.

**Q: How old are the natural gas pipelines in the United States? Why don't natural gas utilities replace all of the oldest pipelines?**

There is a wide range with respect to the age of pipelines. Age is not the sole factor used to determine when a pipeline is replaced, as an older pipeline can still provide safe and reliable service. Operators work with state and federal regulators to continually monitor the natural gas pipelines to determine if leaks are occurring, when repairs are required and when a pipeline needs to be replaced. The replacement of pipelines is an ongoing process. Gas utilities often submit multi-year replacement projects to their state commissions for approval. Immediate pipeline replacement will be performed if a hazardous situation is identified.

For more information on the natural gas pipelines in the United States, please click on the following link: <http://primis.phmsa.dot.gov/comm/PipelineBasics.htm?nocache=6223>.

**Q: How does the public know the industry is committed to safety?**

Safety is and always will be unequivocally the number one priority for the natural gas transmission and distribution industry. The industry spends billions of dollars each year to ensure the safety and reliability of the natural gas infrastructure. Natural gas utilities are subject not only to their own stringent internal controls, but also must meet rigorous federal and state oversight.

**Q: What actions can I take to help ensure the pipelines in my neighborhood are safe?**

There are three actions that individuals can take:

1. Be alert for signs of a natural gas leak. There are several ways to detect a natural gas leak:

**Smell:** Because an odorant is added to natural gas by the utility to help you detect its presence, the best sign of a natural gas leak is if you smell something similar to rotten eggs.

**Sight:** Look for dirt blowing into the air, persistent bubbling in standing water, or discolored or dead vegetation around the pipeline area.

**Sound:** Listen for any unusual hissing or roaring sound.

2. Be sure to call 811 at least two full days before you perform any digging work, even if it is something as simple as planting a tree in your yard. This will allow the local utilities to come and mark the location of any underground lines so that you can avoid damaging them when you dig. <http://www.call811.com/>
3. Help make sure that all those who are performing any excavation work in your neighborhood have notified 811. This would include any work done in the public right-of-way, as well as work done by individuals in their yard. If a call to 811 has been made, underground utilities in the vicinity of the excavation site will come to the site prior to the start of excavation and will mark the location of their buried facility through painted lines, flags or other markers. If a call to 811 has not been made prior to excavation, this could possibly result in damage to underground facilities, including natural gas pipelines.

Information on how to respond to a potential leaks or these signs varies throughout the country based on a variety of factors, including climate and soil condition. To learn how transmission pipelines near you or your distribution utility addresses leak, contact them directly.