

# CALL TO ACTION



In March 2011, former Secretary of Transportation Ray LaHood and the former Administrator of the Pipeline and Hazardous Materials Safety Administration (PHMSA), Cynthia Quarterman, issued a Call to Action to engage all the state pipeline regulatory agencies, technical and subject matter experts, and pipeline operators in accelerating the repair, rehabilitation, and replacement of the highest-risk pipeline infrastructure. The Call to Action addressed many concerns related to pipeline safety, such as ensuring pipeline operators know the age and condition of their pipelines; proposing new regulations to strengthen reporting and inspection requirements; and, making information about pipelines and the safety record of pipeline operators easily accessible to the public. In response to the Call of Action, the Pipeline Safety Update (Attachment 13) provides the actions taken by the U.S. Department of Transportation, the states, communities and pipeline operators.

All documents, letters, and reports pertaining to the Call of Action, can be located in the Pipeline Safety Awareness archive at [www.phmsa.dot.gov/library](http://www.phmsa.dot.gov/library). If you have any questions or would like additional information regarding the Call to Action, please contact the Office of Pipeline Safety at 202-366-4595 or by email at [PHMSA.Pipelinesafety@dot.gov](mailto:PHMSA.Pipelinesafety@dot.gov).

## *Call to Action Highlights*

- Attachment 1: Call to Action Letter to Governors
- Attachment 2: Call to Action Letter to State Regulators
- Attachment 3: Call to Action Letter to Industry
- Attachment 4: Call to Action Letter to Commissioners
- Attachment 5: Call to Action Letter to Technical, Safety, and Environmental Organizations
- Attachment 6: Call to Action Letter to Local and State Organizations
- Attachment 7: Call to Action Letter to Federal Energy Regulatory Commission (FERC)
- Attachment 8: Call to Action Letter to National Association of Regulatory Utility Commissioners (NARUC)
- Attachment 9: Press Release Announcing Call to Action
- Attachment 10: White Paper on State Replacement Programs
- Attachment 11: Request for State Governors' Assistance with Cast Iron Replacement
- Attachment 12: Request for State Regulatory Commissioners' Assistance with Cast Iron Replacement
- Attachment 12: Call to Action - Action Plan
- Attachment 13: Pipeline Safety Update

# ATTACHMENT 1



THE SECRETARY OF TRANSPORTATION  
WASHINGTON, D.C. 20590

March 28, 2011

Recent pipeline failures around the country have elevated concerns about pipeline safety. Neighborhoods in Allentown, Pennsylvania, and San Bruno, California, were rocked by fatal explosions caused by natural gas pipeline failures. These tragic events took lives, shook communities, and raised serious questions about the safety of some of our aging pipeline infrastructure.

These and other recent pipeline incidents, such as the one last summer in Marshall, Michigan, causing a large oil spill into sensitive waters, underscore the need to develop a comprehensive solution that will prevent accidents like these from recurring. The U.S. Department of Transportation (DOT) will host a Pipeline Safety Forum on these issues on April 18 in Washington, DC, and I invite you or your representative(s) to participate. This forum will bring together key stakeholders, including pipeline companies, State and Federal agencies, technical experts, public safety advocates, and the public, to tackle these issues head-on and discuss workable solutions. You or your representative(s) may RSVP for the Pipeline Safety Forum at [pipelineforum@dot.gov](mailto:pipelineforum@dot.gov).

We appreciate your State's partnership on pipeline safety inspection and enforcement. In 2009, the Pipeline and Hazardous Materials Safety Administration provided the majority of the funding for your pipeline safety program, trained your State's inspectors alongside our own, and worked with them to enforce your State pipeline safety laws.

Now, we want to partner with you again to ensure that all pipeline companies in your State, both public and private, are correctly analyzing the risks to their pipeline systems and using the appropriate assessment technologies. Your pipeline safety staff can help make this happen. We ask you to urge your staff to encourage companies and the State utility commission to accelerate pipeline repair, rehabilitation, and replacement programs for systems whose integrity cannot be positively confirmed. This is one of the best ways to help protect your citizens from accidents like those in Allentown, Marshall, and San Bruno.

In addition, there are several other actions you could take to prevent other types of pipeline accidents in your State. These include the following:

**Issue a Proclamation on Safe Digging Month.** You can help raise awareness about the importance of calling before you dig by issuing a State proclamation and holding a public awareness event. As you may know, April is National Safe Digging Month, and DOT will be highlighting our *811 Safe Digging Initiative*. Since establishing the 811 number in 2007 and

raising awareness among excavators and do-it-yourselfers alike of the importance of calling 811 before digging, the number of gas distribution leaks caused by excavation damage has dropped by more than 45 percent. Even with this progress, excavation damage remains the number one cause of pipeline failures causing serious injuries and deaths. Your State proclamation will help raise awareness about this critical safety issue.

**Enforce One-Call Laws.** One of the critical components of a strong damage prevention program is fair and effective enforcement of the one-call laws. Governors play a vital role in supporting improved pipeline safety and a sound infrastructure, and we encourage your support for improvements in one-call laws and programs. Effective damage prevention laws are characterized by few or no exemptions from participation in the safe digging process, balanced enforcement that holds all parties accountable, and clearly defined responsibilities.

**Encourage Better Land Use and Development.** Another important damage prevention initiative is aimed at helping your cities and towns make better decisions about land use and development around existing pipelines. We have published a report on suggested practices and model legislation to help town planners and local officials coordinate with pipeline companies to ensure the safety of people and the environment. This report, called the Pipeline Informed Planning Alliance Report, can be found on our Web site at <http://www.phmsa.dot.gov>. Please help us by referring land use planners in your State to this report so they can make informed decisions about the best use of land near pipelines transporting natural gas or hazardous liquids.

I look forward to working with you on this critical safety issue. If the Office of the Secretary or DOT's Pipeline and Hazardous Material Safety Administration can be of any assistance to you, please contact Administrator Cynthia L. Quarternan at 202-366-4831.

Sincerely yours,

Ray LaHood



# ATTACHMENT 2



U.S. Department  
of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

Administrator

1200 New Jersey Avenue, SE.  
Washington, DC 20590

**MAR 31 2011**

Recent tragedies involving natural gas explosions and spills of hazardous liquids highlight the need to take a hard look at the integrity of the Nation's pipelines. As you are keenly aware, some of this infrastructure is aging and requires prompt attention to ensure the safety of communities across the country.

On April 18, 2011, U.S. Transportation Secretary Ray LaHood will convene a Pipeline Safety Forum with the goal of accelerating the rehabilitation, repair, and replacement of critical pipeline infrastructure with known integrity risks. This forum will bring together pipeline safety experts, researchers, industry representatives, State partners, other Federal agency officials, and members of the public to share their expertise, experience, research, and ideas.

On behalf of the Secretary, I invite you to participate in this very important discussion. You may RSVP to [pipelineforum@dot.gov](mailto:pipelineforum@dot.gov) with the name(s) and contact information of attending individual(s) from your organization or register on-line at our Pipeline Safety Forum website: [www.phmsa.dot.gov/pipelineforum](http://www.phmsa.dot.gov/pipelineforum).

As a Commissioner with responsibility for safety oversight of pipelines in your state, I know you share my concern that these facilities are operated correctly and provide safe and reliable service to the American public. In preparation for the Forum, I urge you to review your State's current replacement plans for the highest risk pipelines (for example, bare steel, cast iron pipe, and pipe whose integrity is questionable or not confirmed), and consider what would be necessary to accelerate these plans. We encourage you to bring your findings to the Forum.

Please reply with this information and any related studies or reports by April 10, 2011. We will post your submissions on the Forum website, [www.phmsa.dot.gov/pipelineforum](http://www.phmsa.dot.gov/pipelineforum). Our plan is to issue a Report to the Nation on the steps needed to achieve the Secretary's goal within the next six months.

Together, we can improve public safety through infrastructure assessment and reinvestment, open communication of concerns and creative solutions, and strong, effective oversight and robust excavation damage prevention programs including promotion of "Safe Digging Month" this April and the national "Call Before You Dig" (811) programs.

Thank you in advance for partnering with us for public safety.

Regards,

A handwritten signature in black ink, appearing to read "Cynthia L. Quarterman". The signature is fluid and cursive, with a large loop at the end.

Cynthia L. Quarterman

# ATTACHMENT 3





U.S. Department  
of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

Administrator

1200 New Jersey Avenue, SE.  
Washington, DC 20590

**MAR 18 2011**

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On behalf of the Secretary, I invite you to participate. Please RSVP to [pipelineforum@dot.gov](mailto:pipelineforum@dot.gov) with the name(s) and contact information of attending individual(s) from your organization.

In preparation for the Forum, I also ask that your organization identify and share with Pipeline and Hazardous Material Safety Administration (PHMSA) information on the integrity of your members' infrastructure based on any comprehensive review or data analysis as well as possible solutions to the challenges confronting the rehabilitation, repair, and replacement of the following: (1) pipelines made of bare steel, cast iron pipe, copper pipe, and polyethylene or plastic pipe; (2) pipelines with unknown or uncertain material specifications or longitudinal seams; (3) pipelines with questionable or unconfirmed integrity.

Please reply with this information and any related studies or reports by April 10, 2011. We will post your submissions on the Forum website, [www.phmsa.dot.gov/pipelineforum](http://www.phmsa.dot.gov/pipelineforum). Our plan is to issue a Report to the Nation on the steps needed to achieve the Secretary's goal within the next six months.

Your members jointly own and operate the nation's pipeline infrastructure - more than 2.5 million miles of pipelines delivering energy to homes and businesses across America. The American public depends upon you and your members, as well as regulatory, inspection and enforcement programs of PHMSA and our state pipeline safety partners to safeguard the integrity and reliability of the nation's pipeline systems.

Together, we can improve public safety. Thank you in advance for partnering with us on this vitally important undertaking.

Regards,

A handwritten signature in black ink, appearing to read "Cynthia Quarterman", with a large, sweeping flourish at the end.

Cynthia L. Quarterman

# ATTACHMENT 4



U.S. Department  
of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

Administrator

1200 New Jersey Avenue, SE.  
Washington, DC 20590

MAR 31 2011

Dear Commissioner:

Recent tragedies involving natural gas explosions and spills of hazardous liquids highlight the need to take a hard look at the integrity of the Nation's pipelines. As you are keenly aware, some of this infrastructure is aging and requires prompt attention to ensure the safety of communities across the country.

On April 18, 2011, U.S. Transportation Secretary Ray LaHood will convene a Pipeline Safety Forum with the goal of accelerating the rehabilitation, repair, and replacement of critical pipeline infrastructure with known integrity risks. This forum will bring together pipeline safety experts, researchers, industry representatives, State partners, other Federal agency officials, and members of the public to share their expertise, experience, research, and ideas.

On behalf of the Secretary, I invite you to participate in this very important discussion. You may RSVP to [pipelineforum@dot.gov](mailto:pipelineforum@dot.gov) with the name(s) and contact information of attending individual(s) from your organization or register on-line at our Pipeline Safety Forum website: [www.phmsa.dot.gov/pipelineforum](http://www.phmsa.dot.gov/pipelineforum).

As a Commissioner with responsibility for safety oversight of pipelines in your state, I know you share my concern that these facilities are operated correctly and provide safe and reliable service to the American public. In preparation for the Forum, I urge you to review your State's current replacement plans for the highest risk pipelines (for example, bare steel, cast iron pipe, and pipe whose integrity is questionable or not confirmed), and consider what would be necessary to accelerate these plans. We encourage you to bring your findings to the Forum.

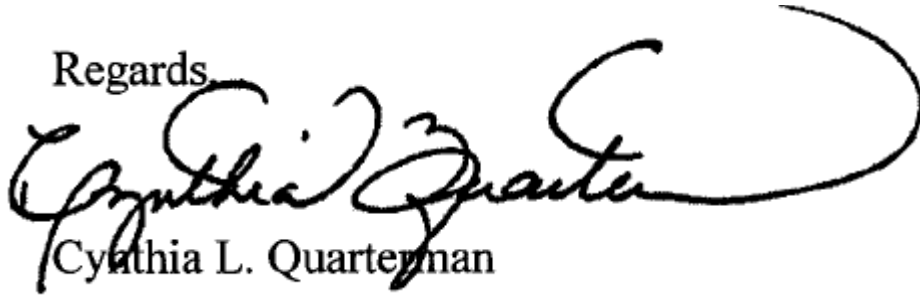
Please reply with this information and any related studies or reports by April 10, 2011. We will post your submissions on the Forum website, [www.phmsa.dot.gov/pipelineforum](http://www.phmsa.dot.gov/pipelineforum). Our plan is to issue a Report to the Nation on the steps needed to achieve the Secretary's goal within the next six months.

Together, we can improve public safety through infrastructure assessment and reinvestment, open communication of concerns and creative solutions, and strong, effective oversight and

robust excavation damage prevention programs including promotion of "Safe Digging Month" this April and the national "Call Before You Dig" (811) programs.

Thank you in advance for partnering with us for public safety.

Regards,

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Cynthia L. Quarterman

# ATTACHMENT 5



U.S. Department  
of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

Administrator

1200 New Jersey Avenue, SE.  
Washington, DC 20590

MAR 24 2011

Recent tragedies involving natural gas explosions and spills of hazardous liquids highlight the need to take a hard look at the integrity of the Nation's pipelines. As you are keenly aware, some of this infrastructure is aging and requires prompt attention to ensure the safety of communities across the country.

On April 18, 2011, U.S. Transportation Secretary Ray LaHood will convene a Pipeline Safety Executive Forum with the goal of accelerating the rehabilitation, repair, and replacement of critical pipeline infrastructure with known integrity risks. This forum will bring together pipeline safety experts, researchers, industry representatives, State partners, other Federal agency officials, and members of the public to share their expertise, experience, research, and ideas.

On behalf of the Secretary, I invite you to participate. Please RSVP to [pipelineforum@dot.gov](mailto:pipelineforum@dot.gov) with the name(s) and contact information of attending individual(s) from your organization. You may also register on-line by going to our Pipeline Safety Forum website: [www.phmsa.dot.gov/pipelineforum](http://www.phmsa.dot.gov/pipelineforum).

Your members possess technical expertise and independent perspectives concerning the nation's energy pipeline infrastructure. In preparation for the Forum, I ask your organization to identify and share with PHMSA possible solutions to the challenges confronting the rehabilitation, repair, and replacement of the following: (1) pipelines made of bare steel, cast iron pipe, copper pipe, and polyethylene or plastic pipe; (2) pipelines with unknown or uncertain material specifications or longitudinal seams; (3) pipelines with questionable or unconfirmed integrity.

Please reply with this information and any related studies or reports by April 10, 2011. We will post your submissions on the Forum website, [www.phmsa.dot.gov/pipelineforum](http://www.phmsa.dot.gov/pipelineforum). Our plan is to issue a Report to the Nation on the steps needed to achieve the Secretary's goal within the next six months.

Together, we can improve public safety through infrastructure assessment and reinvestment, open communication of concerns and creative solutions, strong, effective oversight, and robust excavation damage prevention programs including promotion of “Safe Digging Month” this April and the national “Call Before You Dig” (811) programs.

Thank you in advance for partnering with us for public safety.

Regards,

A handwritten signature in black ink, appearing to read 'C. Quarterman', with a long horizontal flourish extending to the right.

Cynthia L. Quarterman



# ATTACHMENT 6



U.S. Department  
of Transportation  
**Pipeline and Hazardous Materials  
Safety Administration**

Administrator

1200 New Jersey Avenue, SE.  
Washington, DC 20590

MAR 24 2011

Recent tragedies involving natural gas explosions and spills of hazardous liquids highlight the need to take a hard look at the integrity of the Nation's pipelines. As you are keenly aware, some of this infrastructure is aging and requires prompt attention to ensure the safety of communities across the country.

On April 18, 2011, U.S. Transportation Secretary Ray LaHood will convene a Pipeline Safety Forum in Washington DC with the goal of accelerating the rehabilitation, repair, and replacement of critical pipeline infrastructure with known integrity risks. This forum will bring together pipeline safety experts, researchers, industry representatives, state partners, other Federal agency officials, and members of the public to share their expertise, experience, research, and ideas. We believe the Federal Energy Regulatory Commission will be able to provide an important perspective to this discussion.

On behalf of the Secretary, I invite you to the Forum and also serve as one of our panel moderators. I will follow up with you next week to discuss the specific details.

If you would like to include other members of your organization, please provide the name(s) and contact information of attending individual(s) from your organization and send to [pipelineforum@dot.gov](mailto:pipelineforum@dot.gov) or register on-line at our Pipeline Safety Forum website: [www.phmsa.dot.gov/pipelineforum](http://www.phmsa.dot.gov/pipelineforum).

Our plan is to issue a Report to the Nation on the steps needed to achieve the Secretary's goal within the next six months.

Together, we can improve public safety. Thank you in advance for partnering with us on this vitally important undertaking.

Regards,

Cynthia L. Quarterman

# ATTACHMENT 7



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

Administrator

1200 New Jersey Avenue SE  
Washington, DC 20590

DEC 19 2011

The Honorable Jon Wellinghoff  
Chairman  
Federal Energy Regulatory Commission  
888 First Street, N.E.  
Washington, DC 20426

Dear Chairman Wellinghoff:

I am writing to request that the Federal Energy Regulatory Commission (FERC) consider opening a proceeding into the management of pipeline integrity risks through ratemaking proceedings. According to the Natural Gas Act of 1938 (NGA) and the Interstate Commerce Act (ICA), FERC must consider the interests of pipeline operators and ratepayers in an efficient and safe pipeline system. On March 7, 2011, we discussed a mutual plan to encourage the acceleration of pipeline rehabilitation, repair, and replacement of interstate natural gas and hazardous liquid pipelines. As you know, the costs associated with wide scale pipeline repair, rehabilitation, and replacement may be significant, and operators may be unwilling to assume such costs without the ability to recover these costs through ratemaking. Therefore, we suggest that FERC consider using its ratemaking authority to accelerate the repair, rehabilitation, and replacement of the nation's most risky pipeline systems.

While an affordable and reliable energy supply is critical to both the public welfare and our nation's economy, operators may delay pipeline repair, rehabilitation, and replacement due to cost concerns, at significant risk to public safety and the environment. In order to address this state of affairs, it is essential that rate proceedings account for the pressing integrity challenges facing the nation's pipeline system. Serious accidents occur every year and some of these incidents are caused by failures in pipeline infrastructure.

High-risk pipeline infrastructure is piping or equipment that poses an integrity risk. Integrity risks are precipitated by a wide variety of factors. As noted below, however, certain types of pipe are of particular concern, including:

- Hazardous liquid and gas transmission pipelines are typically constructed from steel, which is particularly susceptible to corrosion, material and weld failures, and natural force damage. From 2006 – 2010, corrosion, material failures, and weld failures accounted for 51% of significant gas transmission incidents, which have been trending upward for the past 20 years. On August 19, 2000, a transmission pipeline ruptured and killed 12 campers near Carlsbad, New Mexico. Internal corrosion was determined to be the cause of the rupture.

- Other kinds of pipe installations, including bare steel pipe without adequate corrosion control and copper piping, are also more susceptible to failure.
- Pipelines that fail to pass or take adequate assessment tests can lead to pipeline failures, as in San Bruno, California.

Several recent gas pipeline accidents demonstrate that, if high-risk pipeline infrastructure is not properly repaired, rehabilitated, or replaced, grave consequences may ensue. For example, on September 9, 2010, an intrastate natural gas transmission line ruptured in San Bruno, California. The ensuing explosion and fire resulted in 8 fatalities, multiple injuries, and the destruction of 38 homes.

Age is an important factor in determining whether pipeline infrastructure is vulnerable to failure from time-dependent forces, such as corrosion, stress corrosion cracking, settlement, or cyclic fatigue. Over 12% of the nation's cross-country gas transmission and hazardous liquid pipelines were built prior to the 1950's. For gas transmission pipelines, 59% were built prior to 1970 and 69% prior to 1980; 55% of hazardous liquid transmission pipelines were built prior to 1970 and 71% before 1980.

Meaningful rate recovery should reflect efforts to repair, replace, and rehabilitate some of this high risk infrastructure in a timely fashion. The NGA and ICA impose a "just and reasonable" requirement on all charges for interstate gas and oil pipeline transportation, a standard that requires FERC to consider both the interests of pipeline operators and ratepayers. FERC utilizes varying ratemaking methodologies to meet the "just and reasonable" standard, such as selective discounting, market-based rates, and negotiated rates. The Commission has publicly stated that it "recognizes the need for investment in energy transportation infrastructure to meet the nation's growing demand for energy," albeit in the context of new and expanding pipelines.<sup>1</sup> Existing pipeline infrastructure merits similar attention. Therefore, we request that FERC consider the interests of ratepayers and operators in the repair, replacement, and rehabilitation of pipeline infrastructure through ratemaking proceedings. I look forward to your comments on this proposal and working with you to address these issues now and into 2012.

Regards,



Cynthia L. Quarterman

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<sup>1</sup> Testimony of the Honorable Joseph T. Kelliher, Chairman, Federal Energy Regulatory Commission, before the Senate Subcommittee on Energy and Water Development. September 3, 2008.

# ATTACHMENT 8



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

Administrator

1200 New Jersey Avenue SE  
Washington, DC 20590

DEC 19 2011

Mr. Tony Clark  
Chairman of the Board and President  
National Association of Regulatory Utility Commissioners  
1101 Vermont Avenue, NW  
Suite 200  
Washington, DC 20005

Ms. Collette Honorable  
Chair, NARUC Pipeline Safety Task Force  
National Association of Regulatory Utility Commissioners  
1101 Vermont Avenue, NW  
Suite 200  
Washington, DC 20005

Dear Mr. Clark and Ms. Honorable:

As U.S. Department of Transportation (DOT) and the National Association of Regulatory Utility Commissioners (NARUC) continue to support efforts to accelerate the repair, rehabilitation, and replacement of high-risk infrastructure in pipeline systems, we appreciate the NARUC's continued diligence in promoting rate mechanisms that will encourage and will enable pipeline operators to take reasonable measures to repair, rehabilitate or replace high-risk gas pipeline infrastructure. We have prepared, and attached, a white paper on state pipeline infrastructure replacement programs in the hope that you will share it with your members as a resource for encouraging more States to adopt alternative or more flexible rate mechanisms that will facilitate the replacement or repair of high-risk pipelines.

As you know, the Pipeline and Hazardous Materials Safety Administration (PHMSA) has regulatory authority in regard to the safety of our nation's pipelines. PHMSA, however, does not have the authority to determine the routing, rates, or other terms and conditions of service for gas pipelines. The Federal Energy Regulatory Commission makes these determinations for interstate gas pipelines, and the State public utility commissions you represent typically do the same for intrastate gas pipelines. Most State commissions are also responsible for oversight of intrastate pipeline safety through certifications or agreements with PHMSA.

Many State public utility commissions have encouraged the timely repair, rehabilitation, and replacement of high-risk gas pipeline infrastructure through special rate mechanisms. Some legislatures have also provided their State public utility commissions with specific statutory authority to approve such programs for intrastate gas lines. A comprehensive list of these programs is available at <http://opsweb.phmsa.dot.gov/pipelineforum/pipeline-systems/state-pipeline-system/state-replacement-programs/>.

We believe that the timely repair, rehabilitation, and replacement of high-risk gas pipeline infrastructure are critical to ensuring public safety. A series of recent gas pipeline accidents, including the September 9, 2010 San Bruno, California accident, the January 19, 2011 Philadelphia, Pennsylvania accident, and the February 10, 2011 accident, show the terrible loss of life and property that can occur without adequate attention to the integrity of pipeline infrastructure.

PHMSA believes that an effective program for ensuring the timely rehabilitation, repair, or replacement of high-risk gas pipelines might have helped prevent these accidents. Accordingly, we recommend that State public utility commissions consider accelerating work on the following kinds of high-risk intrastate gas infrastructure in the future:

- Cast iron gas mains, which can be prone to failure as a result of graphitization or brittleness;
- Plastic pipe manufactured in the 1960s to the early 1980s, which is susceptible to premature failures as a result of brittle-like cracking;
- Mechanical couplings used for joining and pressure sealing pipe, which are prone to failure under certain conditions;
- Bare steel pipe without adequate corrosion control (i.e., cathodic protection or coating);
- Copper piping;
- Older pipe, if it is vulnerable to failure from time-dependent forces, such as corrosion, stress corrosion cracking, settlement, or cyclic fatigue factor; and
- Pipelines with inadequate construction records or assessment results to verify their integrity.

PHMSA requests your support in ensuring that State commissions implement effective programs for the timely repair, replacement, and rehabilitation of high-risk gas pipeline infrastructure.

I look forward to continuing to work with the NARUC on pipeline safety and welcome any thoughts that you have on the issues discussed in this letter. Please send your response to Jeffrey Wiese, Associate Administrator for Pipeline Safety, or to contact me if you have any questions or concerns.

Regards,



Cynthia L. Quarterman

Enclosure: White Paper



# ATTACHMENT 9



U.S. Department of Transportation  
Office of Public Affairs  
1200 New Jersey Avenue, SE  
Washington, DC 20590  
[www.dot.gov/briefing-room.html](http://www.dot.gov/briefing-room.html)

## News

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DOT 41-11  
Monday, April 4, 2011  
Contact: Olivia Alair  
Tel: 202-366-4570

### **U.S Transportation Secretary Ray LaHood Announces Pipeline Safety Action Plan**

#### *U.S. DOT Initiates National Effort to Prevent Hazardous Pipeline Incidents*

ALLENTOWN, Pa. – U.S. Transportation Secretary Ray LaHood today launched a national pipeline safety initiative to repair and replace aging pipelines to prevent potentially catastrophic incidents.

Following several fatal pipeline accidents, including one that killed five people in Allentown, PA, Secretary LaHood called upon U.S. pipeline owners and operators to conduct a comprehensive review of their oil and gas pipelines to identify areas of high risk and accelerate critical repair and replacement work. Secretary LaHood also announced federal legislation aimed at strengthening oversight on pipeline safety, as well as plans to convene a Pipeline Safety Forum on April 18th in Washington, DC, to gather state officials, industry leaders, and other pipeline safety stakeholders in order to discuss steps for improving the safety and efficiency of the nation's pipeline infrastructure.

“People deserve to know that they can turn on the lights, the heat, or the stove without endangering their families and neighbors,” said Secretary LaHood. “The safety of the American public is my top priority and I am taking on this critical issue to avoid future tragedies we have seen in Allentown and around the country.”

Secretary LaHood was joined by the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administrator Cynthia Quarterman, Pennsylvania Senator Bob Casey, Congressman Charlie Dent and other federal, state and local officials to unveil the Department's new pipeline safety action plan in Allentown, where a devastating natural gas pipeline failure killed five people and leveled homes and businesses on February 10.

Several other cities have also recently experienced pipeline incidents, including the environmentally devastating rupture in Marshall, MI, and the deadly San Bruno, CA, explosion which highlighted the need for pipeline operators to accelerate the repair, rehabilitation, and replacement of their highest risk lines.

“We must work together to develop a comprehensive solution to prevent these tragedies from happening,” said Administrator Quarterman.

In a meeting in March, Secretary LaHood asked the CEOs of major pipeline companies around the country to conduct a comprehensive review of their pipeline systems to identify the highest risk pipelines and prioritize critical repair needs. Secretary LaHood committed that the Department would provide technical assistance in helping to identify high risk pipelines.

Secretary LaHood also called on Congress to increase the maximum civil penalties for pipeline violations from \$100,000 per day to \$250,000 per day, and from \$1 million for a series of violations to \$2.5 million for a series of violations. He urged Congress to authorize the Department to close regulatory loopholes, strengthen risk management requirements, add more inspectors, and improve data reporting to help identify potential pipeline safety risks early.

The Department’s pipeline safety action plan will address immediate concerns in pipeline safety, such as ensuring pipeline operators know the age and condition of their pipelines; proposing new regulations to strengthen reporting and inspection requirements; and making information about pipelines and the safety record of pipeline operators easily accessible to the public.

The Pipeline and Hazardous Materials Safety Administration will also create a new web page to provide the public – as well as community planners, builders and utility companies – with clear and easy to understand information about their local pipeline networks. Ensuring the public has access to information about local pipelines will help keep people safe and reduce the potential for serious accidents.

“To the American public, it doesn’t matter who has jurisdiction over these essential utility lines. We have a responsibility to work together to prevent the loss of life and environmental damage that can result from poor pipeline conditions,” Secretary LaHood added.

Pipeline incidents resulting in serious injury or death are down nearly 50 percent over the last 20 years. In 1991, there were 67 such incidents compared to 36 in 2010, and an average of 42 per year over the last 10 years. However, a series of recent incidents have highlighted the need to address the nation’s aging pipeline infrastructure.

## **Pipeline Safety Fact Sheet and Backgrounder**

Today, more than 2.5 million miles of pipelines are responsible for delivering oil and gas to communities and businesses across the United States. That's enough pipeline to circle the earth approximately 100 times.

Currently, these pipelines are operated by approximately 3,000 companies and fall under the safety regulations of the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA has engineers and inspectors around the country to oversee the safety of these lines and ensure that companies comply with critical safety rules that protect people and the environment from potential dangers. While PHMSA directly regulates most hazardous liquid pipelines in the nation, states take over when it comes to intrastate natural gas pipelines. Every state except Hawaii and Alaska are responsible for the inspection and enforcement of their own state pipeline safety laws for the natural gas pipeline systems within the state. Some states – about 20 percent - also regulate the hazardous liquid lines within state borders.

Over the last three years, annual fatalities have risen from nine in 2008, to 13 in 2009 to 22 in 2010. The ten year average number of fatalities is 15.

### **Causes of Pipeline Accidents**

Pipeline incidents resulting in serious injury or death are down nearly 50 percent over the last 20 years. In 1991, there were 67 such incidents compared to 36 in 2010, and an average of 42 per year over the last 10 years. However, a series of recent incidents have highlighted the need to address the nation's aging pipeline infrastructure.

There are three major causes of significant pipeline failures resulting in oil spills or gas explosion: damage from digging; corrosion; and failure of the pipe material, welds, or equipment. This type of failure is caused by problems with valves, pumps, or the poor construction on any of these.

### **Safety Requires Coordination**

Communities and pipeline operators must work together during planning and construction to prevent potentially fatal mistakes. Incidents like the September 2010, San Bruno, California explosion are lessons to developers and local governments to work together to ensure homes and businesses are not built too close to, and in many cases on top of existing pipelines.

### **Pipeline Maintenance & Monitoring**

Maintaining healthy pipeline systems requires regular inspections and repairs. Many cast-iron pipelines were installed more than 50 years ago. While some states have replacement plans, most of those plans do not require pipeline replacement for decades into the future. For example:

Pennsylvania's cast iron pipeline systems are required to be replaced by 2111, which means pipes that are already 80 years old may not be replaced for another 100 years;

New York's oldest, cast iron pipes will be replaced by 2090, in 79 years; and

Connecticut's pipelines won't be completely replaced until 2080, or another 69 years.

**811 "Call Before You Dig" Hotline**

PHMSA helped set up a toll-free 811 "*Call Before You Dig*" hotline that connects excavators and do-it-yourselfers anywhere in the country to One Call centers that alert utility owners of planned digging. One of the primary tools for avoiding damage to pipelines and other underground utilities is timely communication between excavators and those who operate or own buried utilities. More information is available at [www.call811.com](http://www.call811.com).

# ATTACHMENT 10



**UNITED STATES DEPARTMENT OF TRANSPORTATION  
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION**

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**White Paper on State Pipeline Infrastructure Replacement Programs**

**Prepared for**

**National Association of Regulatory Commissioners**

**December 2011**



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## **Introduction**

Under the leadership of Transportation Secretary Ray LaHood and Administrator Cynthia Quarterman, the Pipeline and Hazardous Materials Safety Administration (PHMSA) has issued a Call to Action with the goal of accelerating the rehabilitation, repair, and replacement of high-risk pipeline infrastructure. This effort comes on the heels of several high profile pipeline accidents, including two recent gas distribution line explosions in Pennsylvania that resulted in multiple deaths.

As part of Secretary LaHood's Call to Action, PHMSA has prepared this white paper to urge State public utility commissions to expand the use of pipeline infrastructure replacement programs. It includes an overview of natural gas ratemaking, a discussion of the need to take prompt action to remediate high-risk pipeline infrastructure, and a description of the various State programs that are being used for that purpose.

## **Executive Summary**

Public safety requires prompt action to repair, remediate, and replace high-risk gas pipeline infrastructure, including cast iron mains, certain vintages of plastic pipe and mechanical coupling installations, bare steel pipe without adequate corrosion control, and copper piping. Several recent gas pipeline accidents show the terrible consequences that can occur if such action is not taken.

The Federal Energy Regulatory Commission establishes rates for interstate natural gas pipeline service under the "just and reasonable" standard provided in the Natural Gas Act of 1938. State public utility commissions (and in some cases local authorities) establish rates for intrastate natural gas pipeline service. While based on State and local laws, those determinations are generally made on the basis of a formula that is similar to the "just and reasonable" standard.

Pipeline infrastructure replacement programs for gas distribution systems exist in nearly 30 States. Some State Public utility commissions have used their traditional ratemaking authority to approve these programs, the terms and conditions of which are established under a generally applicable statutory provision. Other State public utility commissions have specific authority to approve such programs. The terms, conditions, and cost recovery mechanisms of these programs vary by statute. Whether as part of the traditional ratemaking process or in a separate proceeding, PHMSA is encouraging the States to accelerate the remediation of high-risk gas pipeline infrastructure.

PHMSA intends to focus on this issue in implementing the new Gas Distribution Pipeline Integrity Management Program Rule and as part of the annual certification process for State pipeline safety programs. PHMSA is also willing to provide other assistance to State public utility commissions who are seeking to establish or improve programs for the repair, rehabilitation, and replacement of high-risk pipeline infrastructure.

## I. General Ratemaking Principles

### *Federal Ratemaking*

The Federal Energy Regulatory Commission (FERC) regulates the interstate sale and transportation of natural gas under the Natural Gas Act of 1938 (NGA). The NGA imposes a “just and reasonable” requirement on the rates charged for interstate pipeline services, a standard that requires FERC to consider both the interests of pipeline operators and ratepayers. FERC utilizes varying ratemaking methodologies to meet the “just and reasonable” standard, such as selective discounting, market-based rates, and negotiated rates. However, the underlying premise that ratemaking should be based on the cost of providing service remains a strong principle in rate-making proceedings. Accordingly, cost-of-service ratemaking is the primary method that FERC uses to establish rates.

Cost-of-service ratemaking bases rates on the cost of service and affords the pipeline a reasonable rate of return. The Cost-of-Service:

Includes the product of the pipeline’s Rate Base (which is the pipeline’s investment) and the Overall Rate of Return, plus its Operation and Maintenance Expenses (O&M), Administrative and General Expenses (A&G), Depreciation Expense, Non-Income Taxes and Income Taxes, less Revenue Credits.

In this equation, the Rate Base captures the total amount invested in the pipeline and is used to calculate the permissible return on investment. The Overall Rate of Return is a product of the pipeline’s capitalization ratio, the cost of debt, and the rate of return that is allowed on the pipeline’s equity. Total cost-of-service captures the amount of rate revenue that a pipeline company must charge in order to maintain profitability and remain an attractive prospect for future investment.

FERC applies cost-of-service and other rate methodologies in rate proceedings to set initial rates for new or expanding pipelines, increase rates for existing pipelines, and require prospective changes to existing rates. Applications to establish new or expanded pipeline service must be approved by FERC and are required to meet a “public convenience and necessity” standard. In a certificate proceeding, FERC authorizes initial rates that remain in effect until a further rate proceeding is held. In a general Section 4 rate case, a pipeline files to increase rates and is required to prove that its proposal is “just and reasonable.” Alternatively, in a Section 5 rate proceeding, FERC may require prospective rate changes, if it is determined that a pipeline’s rates no longer meet the “just and reasonable” standard.<sup>1</sup>

### *State Ratemaking*

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<sup>1</sup> Cost-of-Service Rates Manual, Federal Energy Regulatory Commission, June 1999.

State public utility commission (PUCs) regulate the intrastate sale of natural gas, which includes establishing rates for the end user. State PUCs evaluate ratemaking proposals according to a variety of legislative mandates, policy objectives, and consumer interests, but have traditionally set rates according to the “just and reasonable” standard. As articulated by the National Regulatory Research Institute, these rates share four general characteristics. First, rates are reflective of “an efficient or prudent utility” and, therefore, do not include those costs that a utility could eliminate without impairing efficiency or profitability. Second, rates incorporate the natural consequences of a utility’s provision of service at different levels and to different classes of customers. Third, rates are set at a level that provides the utility with an acceptable return to ensure that it remains an attractive candidate for new capital investment. Lastly, the utility’s provision of service should be nondiscriminatory. Within these general principles, the States use varying methods to establish rates, some of which are outlined below.

#### *Rates for Investor-Owned Local Gas Distribution Companies*

Local distribution companies are privately-owned utilities and are required to provide distribution of natural gas to any customer within its geographic franchise area upon reasonable request. These utilities own the natural gas being distributed for their “sales customers” and get paid a fee for the distribution service. Local distribution companies do not earn any money from the sale of the natural gas itself, whether the utility owns the natural gas or transports it on behalf of the customer. The companies simply pass the cost of the gas straight through to the customer. Customers who have purchased their natural gas from a third party supplier or market and wish the distribution company to transport the gas to their business or home, commonly referred to as “transportation customers,” pay a fee for the transport of natural gas over the local distribution company’s pipeline.

State PUCs regulate the rates, terms, and conditions of service for investor-owned natural gas distribution systems. Local agencies generally perform that regulatory function for publicly-owned distribution utilities. These State and local authorities are also responsible for ensuring that the operation of these utilities serves the public interest. In some cases, that may require prohibiting a utility from turning off a residential customer’s gas service for nonpayment during cold weather, asking for safety-driven changes beyond those required by the Federal and State safety regulators, or requiring utilities to offer energy conservation programs.

Natural gas utilities are required to post the rates, terms, and other conditions of service with their State PUCs, and customers must pay the posted rates to obtain the applicable service. Utilities also have information on file with State PUCs on the current “purchased gas adjustment charge.” These charges account for market-driven changes in the price the utility pays for the gas supplied to its customers.

#### *Rates for Publicly-Owned Local Gas Utility Systems*

Publicly-owned gas utility systems are non-profit enterprises that are owned by the citizens they serve. They include municipal gas distribution systems, public utility districts, county districts, and other public agencies that have natural gas distribution facilities. These

utilities own the natural gas that is provided to their customers and charge a fee for the distribution service. Publicly-owned utilities also pass through and recover the cost of acquiring the natural gas that is distributed.

Unlike privately-owned pipeline systems, most State PUCs do not establish rates for publicly-owned gas distribution systems. That function is typically performed by a local body, like a city or county council or utility board. There is no requirement that the rate charged by the utility be based on the cost of service, and the utility may charge whatever rate is established by its governing body.

Rates for publicly-owned utilities do not include costs for return on investment or profit, and any necessary capital is raised by issuing bonds. Customers of municipal utilities pay the purchased gas adjustment charge for the amount of gas the utility distributes during the billing period. Rate changes must be approved by the city council or the utility board.

## **II. Need for Repair, Rehabilitation, and Replacement of High-Risk Gas Pipeline Infrastructure**

The safety of natural gas distribution systems has improved significantly since the enactment of the Natural Gas Pipeline Safety Act of 1968, which provided DOT with the authority to establish safety standards for natural gas systems. A number of serious incidents in natural gas distribution systems, however, still occur each year, and many of those incidents are caused by failures of high-risk pipeline infrastructure. Thus, there is a need to improve pipeline safety by repairing, rehabilitating and replacing high risk pipe.

High-risk pipeline infrastructure is piping or equipment that is no longer fit for service. As discussed below, that lack of fitness can be the product of a variety of factors.

- Cast iron gas mains and service lines can be prone to failure as a result of graphitization or brittleness. The installation of cast iron pipe dates to the 1830s, and remained prevalent until the post-World War II period. Many major urban areas, including Philadelphia, PA; Boston, MA; Baltimore, MD; Washington, DC; Detroit, MI; Chicago, IL; and San Francisco, CA, still have cast iron pipe in their natural gas distribution systems.<sup>2</sup>
- Certain vintages of plastic pipe are susceptible to premature failures as a result of brittle-like cracking. In April 1998, the National Transportation Safety Board (NTSB) released a Special Investigation Report on Brittle-Like Cracking in Plastic Pipe for Gas Service. NTSB found that the long-term strength and resistance of plastic pipe to brittle-like cracking may have been overrated for much of the plastic pipe manufactured and installed from the 1960s through the early 1980s. The NTSB

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<sup>2</sup> <http://opsweb.phmsa.dot.gov/pipelineforum/reports-and-research/cast-iron-pipeline/>

also found that any potential public safety hazards from these failures are likely to be limited to locations where stress intensification exists. In response to the NTSB report and subsequent investigations, PHMSA issued four advisory bulletins on the susceptibility of certain kinds of older plastic pipe to brittle-like cracking.<sup>3</sup>

- Mechanical coupling installations are devices that are used for the joining and pressure sealing of two pieces of pipe. These devices are prone to failure under certain conditions. In March 2008, PHMSA issued an Advisory Bulletin (ADB) on the use of mechanical couplings in natural gas distribution systems. The ADB noted that these devices are more likely to fail when there is inadequate restraint for the potential stresses on the two pipes, when the couplings are incorrectly installed or supported, or when components experience age-related deterioration. The ADB also noted that inadequate leak surveys can fail to detect a coupling in need of repair and lead to more serious incidents.<sup>4</sup>
- Pipelines lacking adequate construction records or assessment results to verify their integrity. In January 2011, PHMSA issued an ADB on the need to use traceable, verifiable, and complete records in establishing the maximum allowable operating pressures and developing and implementing integrity management programs for natural gas pipelines. The ADB responded to an NTSB recommendation, which resulted from its investigation of the September 2010 intrastate natural gas transmission line rupture in San Bruno, California, which is discussed below.
- Other kinds of pipe installations, including bare steel pipe without adequate corrosion control (i.e., cathodic protection or coating) and copper piping, are also more susceptible to failure.
- Age of pipe should be considered in determining whether pipeline infrastructure is vulnerable to failure from time-dependent forces, like corrosion, stress corrosion cracking, settlement, or cyclic fatigue.

Several recent gas pipeline accidents show the grave consequences that can occur if high-risk gas pipeline infrastructure is not properly repaired, rehabilitated, or replaced. For example,

- On September 9, 2010, an intrastate natural gas transmission line ruptured in San Bruno, California. The ensuing explosion and fire resulted in 8 fatalities, multiple injuries, and destroyed 38 homes. NTSB has released a final report on the cause of the accident and concluded that the failure was the result of an improperly-welded section of pipe that had been installed in 1956 and never subjected to hydrostatic pressure testing.

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<sup>3</sup> 72 FR 51301.

<sup>4</sup> 73 FR 11695.

- On January 19, 2011, a natural gas explosion and fire in a natural gas distribution system killed one person and injured five others in Philadelphia, Pennsylvania. The cause of the accident remains under investigation, but preliminary reports indicate that the source of the gas leak was a 12-inch cast iron gas main installed in the 1920s.
- On February 10, 2011, another natural gas explosion and fire in a natural gas distribution system killed five people and destroyed several homes in Allentown, Pennsylvania. The cause of the accident remains under investigation, but preliminary reports indicate that the source of the gas leak was an 83-year-old, 12-inch cast iron gas main.

Recognizing that prompt action to replace these high-risk gas pipelines might have prevented each of these accidents, Transportation Secretary Ray LaHood issued a Call to Action in April 2009 encouraging the States to expand and accelerate the use of such programs.<sup>5</sup> Twenty-two States responded to the Secretary's initiative by providing PHMSA with information on their efforts to remediate high-risk pipeline infrastructure.

After reviewing that information and performing additional research, PHMSA decided to prepare the following overview of the State pipeline infrastructure replacement programs. PHMSA urges the appropriate regulatory authorities will use this information to accelerate their efforts to repair, rehabilitate, and replace high-risk gas pipeline infrastructure in their jurisdictions. In addition to the analysis provided below, a comprehensive list of all of these programs is included in Appendix I.

### **III. Using Traditional Ratemaking Authority to Establish Infrastructure Replacement Programs**

Several state public utility commissions have used their traditional ratemaking authority to approve pipeline infrastructure replacement programs. The examples discussed below show how that authority can be used to ensure the timely repair, rehabilitation, and replacement of high-risk pipeline infrastructure without additional legislation.

#### *New Jersey*

Originally established in 1911 as the Department of Public Utilities, the mission of the New Jersey Board of Public Utilities (BPU) is "[t]o ensure the provision of safe, adequate and proper utility and regulated service at reasonable rates, while enhancing the quality of life for the citizens of New Jersey and performing these public duties with integrity, responsiveness and efficiency."<sup>6</sup> The Division of Energy is responsible for regulating the State's four natural gas

<sup>5</sup> <http://opsweb.phmsa.dot.gov/pipelineforum/>

<sup>6</sup> <http://www.nj.gov/bpu/about/index.html>.

service providers: Elizabethtown Gas, New Jersey Natural Gas (NJNG), PSE&G, and South Jersey Gas.<sup>7</sup>

As part of then-Governor Jon Corzine's economic stimulus plan, BPU approved accelerated pipeline infrastructure replacement programs using its plenary authority to require or enable natural gas companies to provide safe, adequate, and proper service to its customer.<sup>8</sup> In a December 22, 2009 provisional order, BPU approved Elizabethtown Gas's petition to implement a Utility Enhancement Infrastructure Rider (i.e., a rate increase to allow for an accelerated recovery of the costs associated with performing certain gas-distribution infrastructure related projects). The list of qualifying projects included the replacement of 29 miles of 10- and 12-inch and 41.9 miles of 4-inch cast iron gas mains; the installation of 6 miles of 8-inch main and 20 miles of 12-inch main in certain locations. In a subsequent filing, Elizabethtown petitioned BPU to approve an additional rate increase to cover greater-than-anticipated costs for each of these projects.<sup>9</sup>

Likewise, in an April 29, 2009 order, BPU approved NJNG's petition to implement an Accelerated Infrastructure Investment Program (AIIP), i.e., a rate increase to allow for an accelerated recovery of the costs associated with performing 14 infrastructure projects. In a March 30, 2011, BPU approved NJNG's petition to add 9 additional projects to the AIIP. The total anticipated cost for these projects is approximately 130 million dollars.<sup>10</sup>

### *Kentucky*

Created in 1934, the Kentucky Public Service Commission (KPSC) is a three member administrative body with authority to regulate investor-owned natural gas companies. KPSC does not regulate natural gas utilities subject to the control of cities or political subdivisions, or those served by the Tennessee Valley Authority.<sup>11</sup>

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<sup>7</sup> <http://www.state.nj.us/bpu/index.shtml>

<sup>8</sup> Specifically, § 48: 2-23 states:

The board may, after public hearing, upon notice, by order in writing, require any public utility to furnish safe, adequate and proper service, including furnishing and performance of service in a manner that tends to conserve and preserve the quality of the environment and prevent the pollution of the waters, land and air of this State, and including furnishing and performance of service in a manner which preserves and protects the water quality of a public water supply, and to maintain its property and equipment in such condition as to enable it to do so.

The board may, pending any such proceeding, require any public utility to continue to furnish service and to maintain its property and equipment in such condition as to enable it to do so.

<sup>9</sup> See <http://www.elizabethtowngas.com/Universal/RatesandTariff/RegulatoryInformation.aspx>

<sup>10</sup> See <http://www.njng.com/regulatory/filings.asp>

<sup>11</sup> <http://psc.ky.gov/>

In a January 31, 2002 order, KPSC approved a petition filed by Duke Energy Kentucky, Inc. (Duke) for approval of an Accelerated Main Replacement Program (AMRP) Rider, which was designed to allow Duke to reduce the time for replacing its cast iron and bare steel mains from 15 years to 10 years. The Kentucky Attorney General appealed that order, arguing that KPSC lacked the authority to approve such a program outside of the confines of a general rate case. The Kentucky Supreme Court later ruled that KPSC had the power to approve the AMRP Rider under its plenary authority to ensure that rates are “fair, just and reasonable.”<sup>12</sup>

### *Indiana*

Established in the early 20<sup>th</sup> century, the Indiana Regulatory Utility Commission (IRUC) is comprised of five Commissioners who are appointed by the Governor to staggered four-year terms. The Gas Division is responsible for regulating the rates and terms and conditions of service for intrastate gas utilities.<sup>13</sup>

IRUC uses a deferred accounting alternative to allow eligible infrastructure investment costs to be diverted to a special deferred account. In the next rate case, the costs are amortized, recovered in rates, and the balance in the special deferred account is either reduced or eliminated. Gas utilities must establish, through the ratemaking proceeding, that all infrastructure investment costs in such accounts are properly accounted for. The assets in these deferred accounts may accrue interest, which is amortized and recoverable. The amount and type of infrastructure costs may be limited and are subject to state approval.

IRUC has approved Vectren Corporation’s program to target 90 miles of pipeline replacements per year, as part of a broader, 20-year effort to replace 1,700 miles of aging bare steel and cast iron mains in Indiana and Ohio.<sup>14</sup>

## **IV. Using Specific Ratemaking Authority to Establish Infrastructure Replacement Programs**

Several states have provided their public utility commissions with specific statutory authority to approve pipeline infrastructure replacement programs. Some states, like Missouri, Kansas, and Nebraska, have enacted statutes with detailed eligibility requirements and cost-recovery formulas. Other states, like Ohio, have adopted statutes that provide their commissions with far more flexibility and discretion. Still other states, like Texas and Virginia, fall somewhere in between.

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<sup>12</sup> *Kentucky Public Service Commission v. Commonwealth of Kentucky*, 324 S.W.3d 373 (KY 2010).

<sup>13</sup> <http://www.in.gov/iurc/>

<sup>14</sup> [http://www.enengineering.com/pdf/p&gj4\\_05.pdf](http://www.enengineering.com/pdf/p&gj4_05.pdf).



### *Infrastructure Replacement Surcharge: Missouri, Kansas, and Nebraska*

Missouri, Kansas, and Nebraska have adopted statutes that authorize the approval of infrastructure replacement surcharges. Local distribution companies are allowed to charge current customers for the cost of replacing existing infrastructure through the performance of certain projects. A specific formula is provided for determining the permissible amount of the surcharge; procedural requirements are also included to facilitate commission review and approval.

#### Missouri and Kansas

Established in 1913, the Missouri Public Service Commission (MPSC) regulates local gas distribution companies and is composed of five commissioners who are appointed by the governor.<sup>15</sup> Founded two decades later, the Kansas Corporation Commission (KCC) regulates natural gas companies and is composed of three commissioners who are appointed by the Governor for 4-year terms with the approval of the Senate.<sup>16</sup>

On July 9, 2003, the Missouri General Assembly enacted a statute allowing gas corporations to petition MPSC for approval of an infrastructure system replacement surcharge (ISRS) as of August 28, 2003. Using Missouri's ISRS statute as a model, the Kansas Legislature enacted the Gas Safety and Reliability Act (GSRA) three years later, on April 12, 2006. The GSRA provided that as of July 1, 2006, a natural gas public utility could petition the KCC to establish or change gas system reliability surcharge (GSRs) rate schedules.

These two statutes are similar in many respects and include provisions that define the kinds of gas utility projects which are eligible for a cost recovery surcharge, establish a formula for determining and limiting the amount of that surcharge, and prescribe the procedural requirements that must be met before a surcharge can be imposed.

Both statutes generally limit eligible infrastructure system replacements to gas utility plant projects that:

- Do not increase revenues by directly connecting the infrastructure replacement to new customers;
- Are in service and used and useful;
- Were not included in the gas corporation's rate base in its most recent general rate case; and
- Replace, or extend the useful life of an existing infrastructure.

The statutes also list the kinds of "gas utility plant projects" that are eligible for the surcharge:

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<sup>15</sup> <http://psc.mo.gov/>

<sup>16</sup> <http://www.kcc.state.ks.us/index.htm>

- Mains, valves, service lines, regulator stations, vaults, and other pipeline system components installed to comply with State or Federal safety requirements as replacements for existing facilities that are in deteriorated condition;
- Main relining projects, service line insertion projects, joint encapsulation projects, and other similar projects extending the useful life, or enhancing the integrity of pipeline system components for compliance with State or Federal safety requirements; and
- Facility relocations as a result of construction or improvement of a highway, road, street, public way, or other public work by or on behalf of the United States, the State (or political subdivision thereof), or another entity having the power of eminent domain provided that the costs related to such projects have not been reimbursed to the gas corporation.

The two statutes also prescribe a formula for determining the maximum amount and duration of the surcharge:

- MPSC and KCC cannot approve a surcharge that produces a total annualized surcharge revenue below the lesser of \$1,000,000 or 1/2 percent of the gas company's base revenue level or exceeds 10 percent of the base revenue approved at the gas company's most recent general rate proceeding.
- A surcharge cannot be approved for a gas company that has not had a general rate proceeding decided or dismissed within a certain number of months (the past 36 months for Missouri and the past 60 months for Kansas), unless the gas company has filed for one or is the subject of a new proceeding.<sup>17</sup>

Finally, there are also procedural requirements that must be met to authorize the surcharge:

- Gas companies that petition MPSC or KCC for a surcharge must submit a proposed ISRS or GSRS and supporting documentation.
- MPSC and KCC must publish notice of that filing, and their respective staffs are required to confirm underlying costs and submit a report within 60 days.
- MPSC and KCC may hold a hearing on the petition but must issue an order that is effective no later than 120 days after the filing.

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<sup>17</sup> As originally enacted, the GSRA prohibited a utility from collecting a GSRS for any period exceeding 60 months unless a filing had been made or was subject to a new proceeding. However, on April 13, 2011, the Kansas Legislature amended the GSRA to allow the KCC, on motion from a natural gas public utility, to extend that 60-month deadline for up to 12 months.

- A gas company cannot effectuate a change in its rates more often than twice every 12 months.

### *Nebraska*

The Nebraska Public Service Commission (NPSC) regulates the rates and quality of service for investor-owned natural gas public utilities and is composed of five elected commissioners who serve 6-year terms.<sup>18</sup> On August 30, 2009, the Nebraska legislature enacted a statute allowing a jurisdictional utility to file an application and proposed rate schedule with NPSC to establish or change “infrastructure system replacement cost recovery charge rate schedules.” Through this process, utilities may request an adjustment of their rates to recover costs for eligible infrastructure system replacements. Nebraska’s legislation is largely bifurcated: utilities are treated differently depending on whether or not their prior rate filings were subject to negotiation.

NPSC is specifically disallowed from approving rate schedules that produce total annualized infrastructure system cost recovery charge revenue either:

- Below the lesser of one million dollars or one-half percent of the utility’s base revenue level, as approved by the commission in the most recent general rate proceeding; or
- Exceeding ten percent of the utility’s base revenue level, as approved by the commission in the most recent general rate proceeding.

Furthermore, NPSC cannot approve any rate schedules for a utility that has not had a general rate proceeding decided or dismissed by order within the 60 months immediately preceding the application for a infrastructure system replacement cost recovery charge. Utilities cannot collect a recovery rate for a period exceeding 60 months after the initial approval, unless that utility has filed for or is the subject of a new general rate proceeding within the 60-month period. (The rate may be collected until the effective date of a new rate schedule established as a result of a new general rate proceeding or until the rate proceeding is otherwise decided or dismissed by issuance of a commission order without new rates being established).

Two processes exist for establishing or changing a rate schedule. If the utility’s last general rate filing was not subject to negotiation, the utility must submit to NPSC:

- A list of eligible projects;
- A description of the projects;
- The location of the projects;

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<sup>18</sup> <http://www.psc.state.ne.us/index.htm>

- The purpose of the projects;
- The dates construction began and ended;
- The total expenses for each project at completion; and
- The extent to which such expenses are eligible for inclusion in the calculation of the infrastructure system replacement cost recovery charge.

After the public advocate conducts an examination of this information to verify the underlying costs, NPSC must require a report on this examination to be prepared and filed not later than 60 days after the application. NPSC must hold a hearing on the application and issue an order that is effective not later than 120 days after the application is filed (there is a good-cause 30-day extension). If NPSC finds that an application complies with the applicable requirements, an order is issued authorizing the utility to recover appropriate pretax revenue. Utilities may apply for a change in any infrastructure system replacement cost no more than once in any 12-month period.

If a utility's last general rate filing was subject to negotiation, it must submit to NPSC the schedules, supporting documentation, and a written notice for each city that will be affected by the charge. The notice must identify the cities that will be affected by the filing and copies must be provided to each such city. Affected cities have 30 days from that filing to adopt a resolution of intent to negotiate a charge rate with the utility. A copy of the resolution in support, or a resolution of rejection, of the offer to negotiate must be provided to the utility and NPSC within seven days of adoption.

If NPSC receives timely resolutions from cities that represent more than 50 percent of the ratepayers within the affected cities, to negotiate a recovery rate with the utility, the commission will certify the case for negotiation and will take no action until the negotiation period has expired. If agreement is reached, it must be put in writing and filed with the commission, which then must enter an order either approving or rejecting the rate within 30 days of the filing of the agreement. If agreement is not reached, the affected cities and the utility must submit all documentation within 14 days after the commission receives notice that the negotiations have failed. A hearing must be held not later than 35 days after the receipt of this report. If the commission receives resolutions from cities representing more than 50 percent of ratepayers that expressly reject negotiations, the rate review proceeds immediately.

#### *Interim Rate Adjustment: Texas and Virginia*

##### Texas

Established in 1891, the Texas Railroad Commission (TRC) has primary regulatory authority over various aspects of the oil and natural gas industry. The Gas Services Division regulates the day-to-day activities of approximately 200 natural gas utilities and is responsible for ensuring that a continuous, safe supply of natural gas is available to local consumers at the lowest, reasonable price. TRC has exclusive authority over the rates and terms of service for gas

utilities in unincorporated areas and original jurisdiction over utilities at a city gate. TRC is composed of three members who are elected to serve 6-year terms.<sup>19</sup>

On May 16, 2003, the Texas Legislature enacted the Gas Reliability Infrastructure Program (GRIP) statute, which allows gas utilities to recover a return on capital expenditures made during the interim period between general rate cases.<sup>20</sup> Specifically, a gas utility may file a tariff or rate schedule with TRC providing for an interim rate adjustment within two years of the utility's last general rate case. That tariff or rate schedule must be filed at least 60 days before the proposed implementation date of the new rates. During that 60-day period, implementation of the new rates may be suspended by the TRC or an affected municipality for up to 45 days.

The allowable amount of the interim rate adjustment is based on values associated with the utility's return on investment, depreciation expenses, ad valorem taxes, revenue-related taxes, and incremental federal income taxes. The reasonableness and prudence of the investments recovered by an interim rate adjustment is subject to review in the utility's next general rate case. Until the TRC issues a final order approving the interim rate adjustment in that rate case, all amounts collected under the tariff or rate schedule before the filing of that rate case are subject to refund (including with interest, if appropriate). Any utility that implements an interim rate adjustment is required to file a general rate case no later than 180 days after the fifth anniversary of the date its interim rate became effective. The regulatory authority itself may also initiate a rate case at any time to review the reasonableness of the utility's rates.

It should also be noted that TRC has issued regulations mandating the removal, rehabilitation, or replacement of gas distribution pipeline facilities as part of their state pipeline safety program.<sup>21</sup> That includes requirements for the removal of compression couplings and, more recently, for the submission of a written risk-based program, by August 1, 2011, for the removal or replacement of all other distribution facilities.

### Virginia

Established in 1902, the Virginia State Corporation Commission (VSCC) is composed of three commissioners who are elected by the General Assembly for 6-year terms. Its Division of Energy Regulation is responsible for providing assistance in regulating investor-owned natural gas utilities.<sup>22</sup>

On April 11, 2010, the SAVE Act (Steps to Advance Virginia's Energy Plan) was enacted, authorizing certain natural gas utilities to petition the State Corporation Commission

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<sup>19</sup> <http://www.rrc.state.tx.us/>

<sup>20</sup> Tex. Util.Code Ann. § 104.301.

<sup>21</sup> [http://info.sos.state.tx.us/pls/pub/readtac\\$ext.ViewTAC?tac\\_view=5&ti=16&pt=1&ch=8&sch=C&rl=Y](http://info.sos.state.tx.us/pls/pub/readtac$ext.ViewTAC?tac_view=5&ti=16&pt=1&ch=8&sch=C&rl=Y)

<sup>22</sup> <http://www.scc.virginia.gov/pue/index.aspx>

(SCC) for a separate rider (“SAVE rider”), allowing for the recovery of certain costs associated with eligible infrastructure replacement projects. While utilities are still required to apply for the SAVE rider, the statute places restrictions on the VSCC approval process, ostensibly to wall off this process from traditional ratemaking.

Under the Act, an eligible “natural gas utility” is any investor-owned public service company that furnishes natural gas service to the public. Natural gas utilities may apply for “eligible infrastructure replacement” projects that:

- Enhance safety or reliability by reducing system integrity risks associated with customer outages, corrosion, equipment failures, material failures, natural forces, or other outside force damage;
- Do not increase revenues by directly connecting the infrastructure replacement to new customers;
- Reduce or have the potential to avoid greenhouse gas emissions; and
- Are not included in the natural gas utility’s rate base in its most recent rate case or in the rate base filed with a performance based regulation plan.

Specifically, eligible “natural gas utility facility replacement projects” are intended to replace storage, peak shaving, transmission or distribution facilities used in the delivery of natural gas, or supplemental or substitute forms of gas sources by a natural gas utility. The act specifically delineates recoverable costs, including return on investment, depreciation, property taxes, and carrying costs of the eligible infrastructure replacement projects.

In order to qualify for the SAVE rider, utilities must file a petition with VSCC to establish a plan, which must include a completion timeline, a schedule of cost recovery, and a certification that the plan is “prudent and reasonable.” Prior to approval, VSCC must provide notice and an opportunity for a hearing on the plan. SAVE plans must be approved or denied within 180 days; in the case of a denial, VSCC must specifically detail the reasons for the denial and the utility may refile, without prejudice, an amended plan within 60 days, at which point the Commission has an additional 60 days to approve or deny. VSCC is specifically prohibited from requiring the filing of rate case schedules in conjunction with the consideration of a SAVE plan. In addition, no other revenue requirement or ratemaking issues may be examined in conjunction with the consideration of an application filed pursuant to the SAVE Act.

At the end of each 12-month period that a SAVE rider is in effect, the utility must reconcile the difference between the eligible replacement costs and the amounts recovered under the SAVE rider. This reconciliation provides the basis for an adjustment to the SAVE rider, which VSCC must approve or deny within 90 days, whether it is an additional recovery or a refund. Finally, the Act states that this rider is in addition to all other costs that a utility is permitted to recover and cannot be considered as an offset to other VSCC-approved cost of service or revenue requirements. In addition, the rider cannot be included in the computation of a performance based regulation plan revenue-sharing mechanism.

In summary, the Virginia SAVE Act:

- Uses a rider for the recovery of certain eligible infrastructure costs;
- Uses a statutorily prescribed process that is separated from the ratemaking process;
- Includes an amendment process to incorporate increased project costs, but also requires refunds;
- Requires approval or denial within specific timeframe; and
- Restricts VSCC from considering any costs that the utilities are already allowed to recover in the consideration of whether a utility should be able to recover infrastructure costs.

#### *Alternative Rate Plan: Ohio*

Established in 1913, the Public Utilities Commission of Ohio (PUCO) regulates various public utilities in Ohio, including more than two dozen natural gas companies. Those companies provide gas service to more than 3 million users and operate a network of approximately 54,000 miles of regulated distribution lines. PUCO is composed of 5 commissioners who are appointed by the Governor for 5 year terms.<sup>23</sup>

Ohio Chapter 4901: 1-19 governs the filing and consideration of an alternative rate case by a natural gas company. Alternative rate plans may include automatic adjustments based on a specified index or changes in a specified cost. In its “alternative rate plan filing,” the applicant must notify the commission and the consumer services department of its intent to file at least 30 days prior to the expected date of filing. The application (sample is included in rule appendix) must include the proposed rates, a summary of the proposed plan, a comparison of the typical “before” and “after” customer bill, and any waiver requests. In addition, the applicant must fully justify any proposal to deviate from the traditional rate of return regulation, including the rationale for the alternative plan, including “how it better matches actual experience of performance of the company in terms of costs and quality of service to its regulated customers.”

PUCO may grant alternative rate regulation on the basis of this application. However, PUCO may subsequently determine that the natural gas company is not in substantial compliance with state policy, or on the motion of an adversely affected party, abrogate any order when (1) the commission determines that the findings are no longer valid and that modification or abrogation is in the public interest; and (2) the modification or abrogation is not made more than eight years after the effective date of the order, unless the affected natural gas company consents.

#### *California*

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<sup>23</sup> <http://www.puco.ohio.gov/puco/>

The California Public Utilities Commission (CPUC) is responsible for regulating intrastate natural gas pipelines in the State of California, except for municipal gas systems.<sup>24</sup> CPUC is composed of five commissioners who are appointed by the Governor.

On October 7, 2011, the Governor approved a package of pipeline safety bills with several new mandates for gas pipeline operators and CPUC. The relevant provisions include:

- Requiring operators of intrastate gas transmission lines to prepare and submit to CPUC a plan for pressure testing each line segment and to replace each segment that is not tested. Plans must include a timeline for completing all testing and replacements as soon as practicable with interim safety measures during implementation. Where warranted, segments must also be capable of accommodating inline inspection devices.
- Requiring gas pipeline operators to submit to CPUC for approval a plan for the safe and reliable operation of their gas pipeline facilities. Plans must be consistent with Federal pipeline safety laws and must address specific criteria, including: minimizing hazards and systemic risks; identifying safety-related systems that may be deployed; patrolling and inspecting for leaks; responding to reports of leaks; determining MAOP; ensuring qualified and adequately-sized workforce; and meeting applicable pipeline safety standards.
- Requiring gas pipeline operators to report to CPUC twice per year on the strategic planning and decisionmaking approach that is used to determine and rank pipeline safety, integrity, reliability, operations and maintenance activities, and inspections.
- Establishing that is the policy of the State and CPUC for each gas pipeline operator to place safety as its top priority. CPUC must take reasonable and appropriate action to carry out this policy, including through ratemaking.
- Requiring gas pipeline operators who recover expenses for integrity management program and related pipeline maintenance and repairs to have a balancing account, with any unspent money being returned to ratepayers at the end of each rate cycle.

In a June 2011 order, CPUC had previously used its general authority to require operators of intrastate natural gas transmission lines to submit comprehensive pressure testing implementation plans. The purpose of these plans is to achieve the orderly and cost effective replacement or testing of all natural gas transmission lines in the State. The plans permit the use of alternatives that achieve the same standard of safety, but must include a prioritized schedule based on risk assessment and maintaining service reliability, as well as cost estimates with proposed ratemaking. The plans also address the retrofitting of pipelines to accommodate the use of in-line inspection tools and, where appropriate, automated or remotely controlled shut off valves.

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<sup>24</sup> CA PUB UTIL §§ 2101 *et seq.*, 4351-61, 4451-64.



## V. CONCLUSIONS

Nearly 30 State public utility commissions have established pipeline infrastructure replacement programs as part of the ratemaking process. These programs play a vital role in protecting the public by ensuring the prompt rehabilitation, repair, or replacement of high-risk gas distribution infrastructure.

Several state public utility commissions, including those in New Jersey, Kentucky, and Indiana, have used their traditional ratemaking authority to approve such programs. Other States, like Missouri, Kansas, and Nebraska, have provided their public utility commissions with specific statutory authority to approve pipeline infrastructure replacement programs based on detailed eligibility requirements and cost-recovery formulas. Ohio has a statute in place that provides its commission with far more flexibility and discretion. California recently enacted a statutory scheme requiring the implementation of a comprehensive program for pressure testing and replacement of gas pipelines.

Whether as part of the traditional ratemaking process or in a separate proceeding, PHMSA urges State public utility commissions to accelerate the repair, rehabilitation, and replacement of high-risk pipeline infrastructure. The recent pipeline accidents in San Bruno, Philadelphia, and Allentown show the tremendous cost in terms of fatalities, injuries, and property damage that can result in the absence of such action.

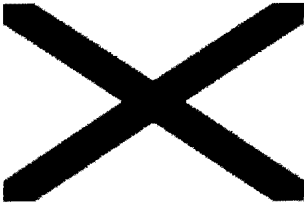
PHMSA is focused on this issue in implementing its integrity management requirements for natural gas transmission and distribution lines and as part of the state certification process. PHMSA is willing to provide assistance to State public utility commissions who are seeking to establish or improve programs for the repair, rehabilitation, and replacement of high risk pipeline infrastructure. Such assistance could include offering testimony at legislative hearings or in state proceedings, providing technical expertise in identifying high-risk pipeline infrastructure, and ensuring that state pipeline safety regulators are effectively implementing the integrity management requirements for natural gas transmission and distribution lines.

## Appendix I:

### Additional Information on State Pipeline Infrastructure Replacement Programs

*Hyperlinks Confirmed as of Date of Publication and Available for Use in Electronic  
Version Only*

#### Alabama



STATE AUTHORITY: Alabama Public Service Commission

PROGRAM: Rate Stabilization and Equalization Plan

PARTICIPANTS: Mobile Gas

Alabama Gas

#### Arkansas



STATE AUTHORITY: Arkansas Public Service Commission

PROGRAM: Main Replacement Program Rider

PARTICIPANTS: CenterPoint Energy

**California**



STATE AUTHORITY: California Public Utilities Commission

PROGRAM: Comprehensive Implementation Plan

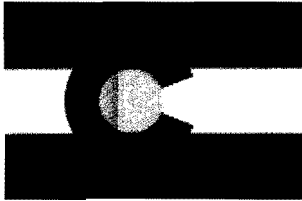
PARTICIPANT: San Diego Gas and Electric

PROGRAM: Pipeline Safety Enhancement Plan

PARTICIPANTS: Southern California Gas

Pacific Gas & Electric

**Colorado**



STATE AUTHORITY: Colorado Public Service Commission

PROGRAM: Pending

PARTICIPANT: Colorado Public Service Company

**District of Columbia**

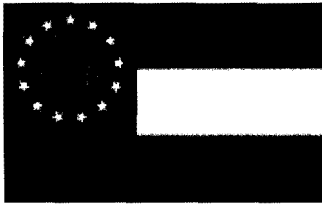


STATE AUTHORITY: District of Columbia Public Service Commission

PROGRAM: Pending

PARTICIPANT: Washington Gas

## Georgia



STATE AUTHORITY: Georgia Public Service Commission

PROGRAM: Pipeline Replacement Program

PARTICIPANT: Atlanta Gas Light

PROGRAM: Pipeline Replacement Surcharge

PARTICIPANT: Atmos Energy

## Illinois

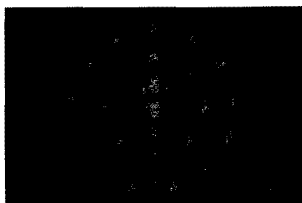


STATE AUTHORITY: Illinois Commerce Commission

PROGRAM: Infrastructure Cost Recovery Rider

PARTICIPANT: Integrys Peoples Gas

## Indiana



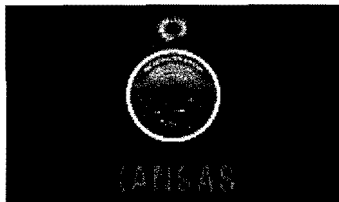
STATE AUTHORITY: Indiana Utility Regulatory Commission, Gas Division

PROGRAM: Pipeline Safety Adjustment

PARTICIPANT: Vectren Energy Delivery of Indiana, Inc.

Vectren South – SICEGO

**Kansas**



STATE AUTHORITY: Kansas Corporation Commission

PROGRAM: Accelerated Pipeline Replacement Rider

PARTICIPANT: Black Hills Energy

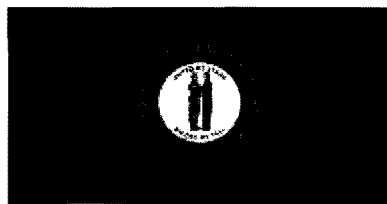
PROGRAM: Gas System Reliability Surcharge Rider

PARTICIPANT: Kansas Gas Service

Atmos Energy

LAWS: Gas Safety and Reliability Policy Act

**Kentucky**



STATE AUTHORITY: Kentucky Public Service Commission

PROGRAM: Accelerated Main Replacement Program Rider

PARTICIPANT: Columbia Gas Kentucky

PROGRAM: Pipeline Replacement Program

PARTICIPANT: Delta Natural Gas

PROGRAM: Accelerated Main Replacement Program

PARTICIPANT: Duke Energy Kentucky

PROGRAM: Pipeline Replacement Program Rider

PARTICIPANT: Atmos Energy

LAWS: KRS 278.509

## Louisiana



STATE AUTHORITY: Louisiana Public Service Commission

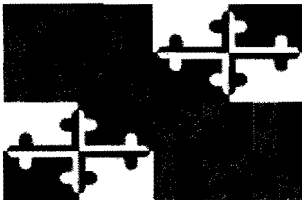
PROGRAM: Rate Stabilization Tariffs

PARTICIPANTS: Atmos Energy – LA

Entergy

CenterPoint Energy

## Maryland



STATE AUTHORITY: Maryland Public Service Commission

PROGRAM: Pending

PARTICIPANTS: Washington Gas

## Massachusetts



STATE AUTHORITY: Massachusetts Department of Public Utilities, Pipeline Engineering and Safety Division

PROGRAM: Targeted Infrastructure Reinvestment Factor

PARTICIPANTS: Columbia Gas Massachusetts

National Grid Massachusetts

New England Gas

PROGRAM: Pending

PARTICIPANT: Fitchburg Gas and Electric

## Michigan

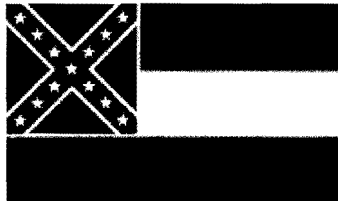


STATE AUTHORITY: Michigan Public Service Commission

PROGRAM: Main Replacement Program Rider

PARTICIPANT: SEMCO Energy

## Mississippi



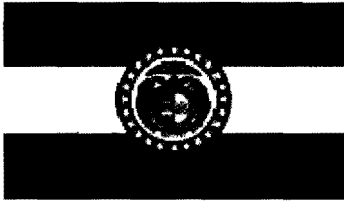
STATE AUTHORITY: Mississippi Public Service Commission

PROGRAM: Rate Stabilization Tariffs

PARTICIPANTS: Atmos Energy – MS

CenterPoint Energy

## Missouri



STATE AUTHORITY: Missouri Public Service Commission

PROGRAM: Infrastructure System Replacement Surcharge

PARTICIPANTS: Ameren Missouri

Laclede Gas

Missouri Gas Energy

Atmos Energy - MO

LAWS: MO ST 393.1009 et seq.

## Nebraska



STATE AUTHORITY: Nebraska Public Service Commission

PROGRAM: Infrastructure System Replacement Cost Recovery Charge

PARTICIPANT: Black Hills Energy

LAWS: NE ST 66-1865

NE ST 66-1866

NE ST 66-1867



## **New Hampshire**

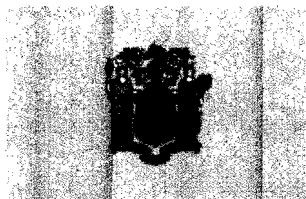


STATE AUTHORITY: New Hampshire Public Utilities Commission

PROGRAM: Cast Iron Bare Steel Replacement Program

PARTICIPANT: National Grid Energy North

## **New Jersey**



STATE AUTHORITY: New Jersey Board of Public Utilities

PROGRAM: Utility Enhancement Infrastructure Rider

PARTICIPANT: Elizabethtown Gas

PROGRAM: Accelerated Infrastructure Investment Program

PARTICIPANT: New Jersey Natural Gas

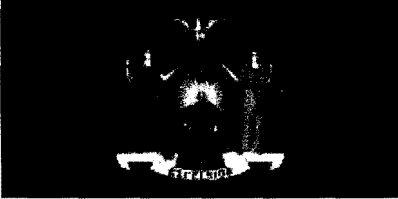
PROGRAM: Capital Adjustment Charge

PARTICIPANT: Public Service Electric and Gas

PROGRAM: Capital Investment Recovery Tracker

PARTICIPANT: South Jersey Gas

## New York

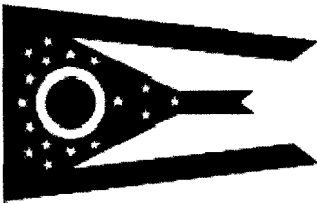


STATE AUTHORITY: New York State Public Service Commission

PROGRAM: LIMITED INFRASTRUCTURE REPLACEMENT

PARTICIPANTS: National Grid Long Island, Niagara Mohawk, and NYC  
Corning Natural Gas

## Ohio



STATE AUTHORITY: Ohio Public Utility Commission

PROGRAM: Infrastructure Replacement Program

PARTICIPANTS: Columbia Gas Ohio

PROGRAM: Pipeline Infrastructure Replacement Cost Recovery Charge

PARTICIPANT: Dominion East Ohio

PROGRAM: Accelerated Main Replacement Program Rider

PARTICIPANT: Duke Energy Ohio

PROGRAM: Distribution Replacement Rider

PARTICIPANT: Vectren Energy Delivery of Ohio, Inc.

## Oklahoma



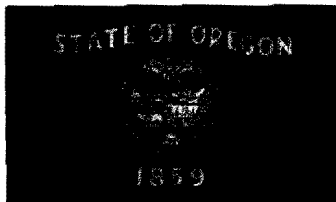
STATE AUTHORITY: Oklahoma Corporation Commission

PROGRAM: Rate Stabilization Tariffs

PARTICIPANTS: Oklahoma Natural Gas

CenterPoint Energy

## Oregon

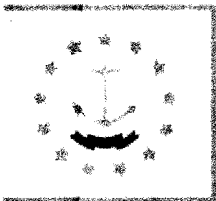


STATE AUTHORITY: Oregon Public Utility Commission

PROGRAM: Replacement Projects

PARTICIPANT: Avista Corp

## Rhode Island

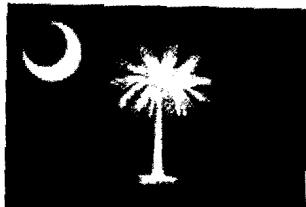


STATE AUTHORITY: Rhode Island Public Utilities Commission

PROGRAM: Capital Expenditure Tracker Factor, Accelerated Replacement Program

PARTICIPANT: National Grid Narragansett Gas

## South Carolina



STATE AUTHORITY: South Carolina Office of Regulatory Staff

PROGRAM: Rate Stabilization Tariff

PARTICIPANTS: Piedmont Natural Gas

South Carolina Electric and Gas

## Texas



STATE AUTHORITY: Texas Railroad Commission

PROGRAM: Gas Reliability Infrastructure Program

PARTICIPANTS: CenterPoint Energy

Atmos Energy – TX

Texas Gas Service

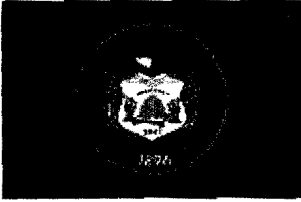
PROGRAM: Rate Stabilization Tariffs

PARTICIPANTS: Atmos Energy – TX

CenterPoint Energy

LAWS: Tex. Util.Code § 104.301

## Utah



STATE AUTHORITY: Utah Public Service Commission

PROGRAM: Infrastructure Rate Adjustment Tracker

PARTICIPANT: Questar Gas

## Virginia



STATE AUTHORITY: Virginia State Corporation Commission

PROGRAM: Pending

PARTICIPANT: Washington Gas

LAWS: SAVE Act



# ATTACHMENT 11



U.S. Department  
of Transportation

**Pipeline and Hazardous  
Materials Safety  
Administration**

Administrator

1200 New Jersey Avenue SE  
Washington, DC 20590

July 23, 2012

The Honorable Andrew Cuomo  
Governor of New York  
Albany, NY 12224

Dear Governor Cuomo:

I am writing to request your assistance in addressing pipeline safety by providing State information for a Congressional mandate. The U.S. Congress, through § 7 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, instructed the Pipeline and Hazardous Materials Safety Administration (PHMSA) to conduct a nationwide survey on the progress of cast iron pipeline replacement.

Cast iron is one of a few high risk pipeline materials, typically installed over 60 years ago, which is still in use supplying natural gas to homes and businesses in many of our towns and cities. Almost all cast iron pipeline systems are subject to State pipeline safety oversight. This means you, your fellow Governors, and other State officials have the ability, and responsibility, to assure these pipeline systems do not pose a risk to life, property or the environment within your State.

Before the end of summer, PHMSA will release a public web-based solution highlighting the inventory of cast iron remaining in each State, as well as any pipeline remediation plans provided to us. PHMSA's Associate Administrator for Pipeline Safety, Jeffrey D. Wiese, recently requested your State's pipeline remediation plans from your State utility commission chair. We look forward to showcasing your State's active management of these pipeline risks by including your related programs and plans.

We are maintaining your responses on our website at:  
<http://opsweb.phmsa.dot.gov/pipelineforum/library/index.html>.

I look forward to our continued partnership on this critical safety issue. Your input and efforts within your State to support safety initiatives is greatly appreciated. If my staff or I can be of any assistance to you, please do not hesitate to contact me at 202-366-4433.

Regards,

Cynthia L. Quarterman



# ATTACHMENT 12

# U.S. Department of Transportation Call to Action To Improve the Safety of the Nation's Energy Pipeline System

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## Executive Summary

Today, more than 2.5 million miles of pipelines are responsible for delivering oil and gas to communities and businesses across the United States. That's enough pipeline to circle the earth approximately 100 times.

Currently, these liquid and gas pipelines are operated by approximately 3,000 companies and fall under the safety regulations of the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA). PHMSA has engineers and inspectors around the country who oversee the safety of these lines and ensure that companies comply with critical safety rules that protect people and the environment from potential dangers. While PHMSA directly regulates most of the hazardous liquid pipelines in the nation, states take over when it comes to intrastate natural gas pipelines. Every state, except Hawaii and Alaska, is responsible for the inspection and enforcement of state pipeline safety laws for the natural gas pipeline systems within their respective states. Some states – about 20 percent - also regulate the hazardous liquid lines within state borders.

In the wake of several recent serious pipeline incidents, U.S. DOT/PHMSA is taking a hard look at the safety of the nation's pipeline system. Over the last three years, annual fatalities have risen from nine in 2008, to 13 in 2009 to 22 in 2010. Like other aspects of America's transportation infrastructure, the pipeline system is aging and needs a comprehensive evaluation of its fitness for service. Investments that are made now will ensure the safety of the American people and the integrity of the pipeline infrastructure for future generations.

For these reasons, Secretary LaHood has issued "A Call To Action" for all pipeline stakeholders, including the pipeline industry, the utility regulators, and our state and federal partners. Secretary LaHood brought together PHMSA Administrator Quarterman and the senior DOT leadership to design a strategy to achieve that goal. The action plan below is the result of those deliberations.

## Background

Much of the nation's pipeline infrastructure was installed many decades ago, and some century-old infrastructure continues to transport energy supplies to residential and commercial customers, particularly in the urban areas across our nation. Older pipeline facilities that are constructed of obsolete materials (e.g., cast iron, copper, bare steel, and certain kinds of welded pipe) may have degraded over time, and some have been exposed to additional threats, such as excavation damage.

On December 4, 2009, PHMSA issued the Distribution Integrity Management Final Rule, which extends the pipeline integrity management principles that were established for hazardous liquid and natural gas transmission pipelines, to the local natural gas distribution pipeline systems. This regulation, which becomes effective in August of 2011, requires operators of local gas distribution

pipelines to evaluate the risks on their pipeline systems to determine their fitness for service and take action to address those risks. For older gas distribution systems, the appropriate mitigation measures could involve major pipe rehabilitation, repair, and replacement programs. At a minimum, these measures are needed to requalify those systems as being fit for service. While these measures may be costly, they are necessary to address the threat to human life, property, and the environment.

In addition to the many pipelines constructed with obsolete materials, there are also early vintage steel pipelines in high consequence areas that may pose risks because of inferior materials, poor construction practices, and lack of maintenance or inadequate risk assessments performed by operators. The lack of basic information or incomplete records about these systems is also a contributing factor. The U.S. DOT is seeking to make sure these risks are identified, the pipelines are assessed accurately, and preventative steps are taken where they are needed.

### **Action Plan**

The U.S. DOT and PHMSA have developed this action plan to accelerate rehabilitation, repair, and replacement programs for high-risk pipeline infrastructure and to requalify that infrastructure as fit for service. The Department will engage pipeline safety stakeholders in the process to systematically address parts of the pipeline infrastructure that need attention, and ensure that Americans remain confident in the safety of their families, their homes, and their communities. The strategy involves:

- **A CALL TO ACTION** – Secretary LaHood is issuing a “Call to Action” to engage state partners, technical experts, and pipeline operators in identifying pipeline risks and repairing, rehabilitating, and replacing the highest risk infrastructure. Secretary LaHood is also asking Congress to expand PHMSA’s ability to oversee pipeline safety.
  - Secretary LaHood and PHMSA Administrator Quarterman have met with the Federal Energy Regulatory Commission (FERC), the National Association of Regulatory and Utility Commissioners (NARUC), state public utility commissions, and industry leaders to ask all parties to step up efforts to identify high-risk pipelines and ensure that they are repaired or replaced.
  - Secretary LaHood is asking Congress to increase the maximum civil penalties for pipeline violations from \$100,000 per day to \$250,000 per day, and from \$1 million for a series of violations to \$2.5 million for a series of violations. He is also asking Congress to help close regulatory loopholes, strengthen risk management requirements, add more inspectors, and improve data reporting to help identify potential pipeline safety risks early. The Senate has passed its version of the pipeline safety reauthorization legislation. The House of Representatives is currently considering two versions of a similar bill that could be passed by end of the year.
  - The U.S. DOT and PHMSA convened a Pipeline Safety Forum in April 2011 that engaged a working session around the actions that DOT/PHMSA, the state regulatory agencies, and the pipeline industry can take to drive more aggressive actions to raise

the bar on pipeline safety. The U.S. DOT and PHMSA is preparing a report based on ideas, opportunities and challenges presented at the Forum and action that will be taken.

- **AGGRESSIVE EFFORTS** – The U.S. DOT and PHMSA are calling on pipeline operators and owners to review their pipelines and quickly repair and replace sections in poor condition.
  - PHMSA has asked technical associations and pipeline safety groups to provide best practices and technologies for repair, rehabilitation and replacement programs, and has asked industry groups for commitments to accelerate needed repairs.
  - PHMSA will review all data received from pipeline operators to identify areas with critical needs.
  - PHMSA’s Distribution Integrity Management rule became effective in August, requiring all operators of local gas distribution pipeline systems to evaluate the risks on their pipeline systems and take action to address those risks.
  
- **TRANSPARENCY** - U.S. DOT and PHMSA will execute this plan in a transparent manner with opportunity for public engagement, including a dedicated website for this initiative, and regular reporting to the public.
  - PHMSA has launched a public website (<http://opsweb.phmsa.dot.gov/pipelineforum>), which describes the ongoing pipeline rehabilitation, replacement and repair initiatives.
  - All materials from the Pipeline Safety Forum will be publicly posted to the web, followed by a Draft Report for Notice and Comment. Once public input has been collected, PHMSA will publish a final Pipeline Safety Report to the Nation.
  - PHMSA will be holding a national forum on emergency preparedness and response to pipeline emergencies. The forum will take place December 9, 2011, and will include the major stakeholders from the emergency response community, industry and government to discuss how best to improve pipeline emergency preparedness and response capabilities.
  - A report from the forum will be prepared and published.

Revised 11/1/11

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# ATTACHMENT 13

SEPTEMBER 2012



US DEPARTMENT OF  
TRANSPORTATION

## PIPELINE SAFETY UPDATE



## Letter from the Secretary

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There are 2.6 million miles of hazardous liquid and gas pipeline that crisscross our Nation, and although we usually don't see them, they play an important role in the daily lives of all Americans. They provide energy for hot water for morning showers, heat in the winter and air conditioning in the summer, as well as gasoline to power our cars. Approximately 70 percent of liquid fuels (oil, gasoline, jet fuel, etc.) and nearly all natural gas are delivered to our communities, businesses and industries by pipelines.

Pipelines are the safest way to deliver these resources, and major failures are rare. However, over the past two years there have been a few devastating accidents involving natural gas explosions and hazardous liquid spills. From the loss of life in California and Pennsylvania, to the thousands of gallons of crude oil dumped into the waters of Michigan, Montana, and Utah, many people have rightfully questioned the safety of the pipelines that run through their communities.

As the Secretary of Transportation, I am responsible for overseeing the safety of our Nation's pipelines. I visited some of these communities, and I saw the devastation first hand. That is why I issued a Call to Action, urging pipeline operators to replace, repair or rehabilitate aging infrastructure.

I also promised that the Department of Transportation would take a hard look at our nation's pipeline infrastructure and report to the public what we found. The Pipeline Safety Update is a compilation of those findings and an update on the progress we've made under the Call to Action. The Update overview is available in hard copy and online; the data and graphics are available for viewing or download at [www.PHMSA.dot.gov](http://www.PHMSA.dot.gov). As this document and the data demonstrate, we have made progress, but we still have work to do.

The Pipeline Safety Update also contains an overview about how the nation's pipeline system is regulated and how safety requirements are enforced. It covers the oversight roles of Federal and State governments and the safety and environmental records of pipeline operators. The Update also chronicles the actions taken by the Pipeline and Hazardous Materials Safety Administration, the federal agency within the U.S. Department of Transportation (USDOT), that implements the Call to Action and the Pipeline Safety Act of 2011.

I encourage you to continue to visit the Pipeline Safety Update section on PHMSA's Pipeline Safety Awareness website to get the latest information about pipelines, including enforcement actions, safety proposals, public awareness initiatives and data updates.

Pipeline safety depends on a combination of factors, including strong safety regulations and enforcement, dependable infrastructure, and information and data sharing. Educating the public about how to stay safe around pipelines is also crucial—the number one cause of serious pipeline accidents is excavation damage.

I hope you will find the Update informative and useful. Pipeline safety is a top priority for DOT, and we will continue to keep the public updated as we move forward to protect people and the environment by making sure that pipelines operate safely and reliably.

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Secretary Ray LaHood  
U.S. Department of Transportation



## Executive Summary

We all have a stake in the safe operation of our pipelines. Pipeline safety is important because most of the energy we consume today still comes from oil and natural gas. The vast majority of these products are transported through pipelines – from the wells where they are produced, across hundreds or thousands of miles, to our homes and businesses. The companies that operate the pipelines are responsible for ensuring their safety. But others have a major role to play in ensuring pipeline safety, including the Federal and State government agencies that oversee them, and the end users who are most affected because of their proximity.

In the wake of several recent serious pipeline incidents, the Department of Transportation's Pipeline and Hazardous Materials Safety Administration has been working hard to address safety concerns. To date, PHMSA has determined that the age of the pipelines, the enforcement authority, and the data quality and transparency are some of the elements that are vital to having safe and reliable pipelines.

Pipeline infrastructure—like our roads, bridges, ports, and rail infrastructure—is aging and needs more attention. Secretary Ray LaHood issued a Call to Action, urging pipeline operators to step up and repair, rehabilitate, or replace their aging infrastructure. The Pipeline Safety Update includes infrastructure updates from states, as well as initiatives from pipeline operators.

In recognition of the need to strengthen pipeline safety regulations, President Obama signed the Pipeline Safety, Regulatory Certainty and Job Creation Act of 2011 into law earlier this year. The Act authorizes PHMSA to increase the maximum civil penalty for pipeline safety violations from \$100,000 to \$200,000 per violation per day. In addition, the agency will be able to collect a maximum of \$2,000,000 for a related series of violations, up from \$1,000,000. PHMSA is already moving forward to implement this new statutory authority. PHMSA plans to use its new authority to build on its already strong enforcement history – in 2011, PHMSA closed its highest number of enforcement cases in a single year since the passage of the Pipeline Safety Improvement Act of 2002.

PHMSA has also made sharing information about pipeline performance a priority. For example, on [PHMSA.dot.gov](http://PHMSA.dot.gov), visitors have access to their state's pipeline profile, which includes information about pipeline operators, enforcement actions, and incident and mileage data. The agency will also continue holding public workshops about key safety issues, such as leak detection and shut-off valves.

In addition to pipeline safety initiatives, the Update also provides context and background information about pipelines. Sections 1 and 2 describe the role of pipelines in our lives, and the numerous stakeholders that have a role in ensuring pipeline safety. Section 3 summarizes the environmental and safety record of pipelines. Section 4 provides a status report summarizing pipeline safety, including the implementation of the Pipeline Safety Act and the status of the Secretary's Call to Action and additional initiatives to further improve pipeline safety. Section 5 provides safety guidance about how to stay safe around pipelines. Also included is an image library, a glossary, a list of acronyms, and a collection of additional resources, including data sets.

The Pipeline Safety Update sections below will continue to be updated with new data, information from states, and instructions for how to comment on pipeline safety proposals. The webpages are structured so that users may download the entire document or choose among individual chapters.

### ***1. The Role of Energy Pipelines in our Society***

We all have a stake in improving pipeline safety because much of the energy we use every day is delivered to our homes and businesses through an expansive network of pipelines.

### ***2. The Role of Key Stakeholders***

Stakeholders play critical roles in ensuring the safety of hazardous liquid and natural gas pipelines. Find out who they are and what roles each group plays in keeping pipelines safe.

### ***3. The Pipeline Safety and Environmental Record***

While there is room for continued improvement, pipeline safety has improved over the past twenty years. Unfortunately, over the last three years, pipeline-related fatalities have risen from 9 in 2008, to 13 in 2009, to 22 in 2010. Pipeline spill volumes fluctuated from 2004-2009, from a minimum in 2009 and to a significant upward spike in 2010.

### ***4. The Path Forward: The Call to Action and Other Pipeline Safety Initiatives***

Improving pipeline safety requires that the pipeline industry focus energy and resources on understanding and managing a set of known risks. Regulators have a role in understanding those risks, developing regulations to manage those risks, monitoring performance, and ensuring compliance with regulations.

The Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 is one of the most important pieces of legislation to affect pipeline safety in recent years. Signed by President Obama on January 3, 2012, the Act incorporates many lessons learned from the accident in San Bruno, California, including requiring automatic or remote-controlled shutoff valves on new or entirely-replaced transmission pipeline facilities. It also increases civil penalties for pipeline operators who fail to observe safety rules.

To build upon the Safety Act of 2011, the presidential budget request for PHMSA in 2013 included \$177 million for pipeline safety. The budget request would fund 120 new pipeline safety inspectors and provide more than \$20 million for State pipeline safety grant programs, \$13 million for pipeline safety research and development, and \$8 million for a national Pipeline Information Exchange. The Exchange would enable PHMSA to develop a comprehensive database of integrated pipeline safety information from PHMSA, States, industry and other Federal sources. Another \$2 million would go towards establishing a national campaign to educate the public about pipeline awareness during excavation.

In addition to Federal and State safety laws and initiatives, there are many other initiatives through which operators, regulators and other key stakeholders can continuously improve regulations, oversight, management practices, safety technology, and vigilance. These initiatives are important ingredients in driving accidents and injuries to zero.

## **5. *The Pipeline Safety Guide***

Pipeline safety is a shared responsibility. Community and pipeline safety is improved through active stakeholder participation, which includes members of the general public. Programs for public awareness and participation are an important component of ensuring pipeline safety today and tomorrow.

The Pipeline Safety Guide provides important information on how to locate nearby pipelines, recognize and respond to leaks, and avoid hitting underground pipelines during excavation projects. It also features a checklist of pipeline safety information for the general public.

## The Role of Energy Pipelines in Our Society

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**What are pipelines? Where are they? And why do we need them in the first place? Those are good, basic questions.**

The energy transportation network of the United States consists of over 2.6 million miles of pipelines. That's enough to circle the earth about 100 times. These pipelines are operated by approximately 3,000 companies, large and small.

Based on data generated from annual reports to PHMSA from pipeline operators (1), the network includes approximately:

- 175,000 miles of onshore and offshore Hazardous Liquid pipeline;
- 321,000 miles of onshore and offshore Gas Transmission and Gathering pipelines;
- 2,066,000 miles of Natural Gas Distribution mains and service pipelines;
- 114 active LNG Plants connected to our natural gas transmission and distribution systems; and
- Propane Distribution System pipelines.

Although pipelines exist in all fifty states, most of us are unaware that this vast network even exists. This is due to the strong safety record of pipelines and the fact that most of them are located underground. Installing pipelines underground protects them from damage and helps protect our communities as well.

### Where Are They?

Most hazardous liquid and gas pipelines are buried underground. To ensure your safety and avoid damaging underground lines, you must call your state one-call center before digging. Call Before you Dig!

Most hazardous liquid and natural gas transmission pipelines are located underground in rights-of-way (ROW). A ROW consists of consecutive property easements acquired by, or granted to, the pipeline company. The ROW provides sufficient space to perform pipeline maintenance and inspections, as well as a clear zone where encroachments can be monitored and prevented. ROW Briefing.

To find out if a transmission pipeline is located near you, you can visit the National Pipeline Mapping System (npms) and search by your county or zip code.

Pipeline operators are required to post brightly-colored markers along their ROW to indicate the presence of – but not necessarily the exact location of – their underground pipelines.

Markers come in a variety of shapes and sizes. They contain information about the nearby pipeline as well as emergency contact information for the company that operates it. Pipeline Markers Briefing

Natural gas distribution systems consist of distribution main lines and service lines. Distribution main lines are generally installed in underground utility easements alongside streets and highways. Distribution service lines run from the distribution main line into homes or businesses. Distribution main and service lines are not generally indicated by above-ground markers. To ensure safety and avoid damaging underground lines, anyone planning to dig or excavate is required by law to contact their state One-Call center 48 to 72 hours before digging. Call Before You Dig!

### Why Do We Need Them?

Pipelines play a vital role in our daily lives. Cooking and cleaning, the daily commute, air travel and the heating of homes and businesses are all made possible by the readily available fuels delivered through pipelines. Click here to see a list of products transported through pipelines. More...

These routine activities really add up, in terms of energy use. Natural gas provides for fully 24% of our country's total energy consumption, and petroleum provides for another 39%.

Because such huge volumes of hazardous liquid and natural gas must be transported, the only feasible way to do so is through pipelines. Pipelines do not crowd our highways and waterways as trucks and barges would, nor do they contribute to traffic congestion or highway accidents.

Pipelines, in short, are practical and safe.

Here is more information about pipelines that you may find interesting:

- [Natural Gas Pipeline Systems: From the wellhead to the consumer](#)
- [Petroleum Pipeline Systems: From the wellhead to the consumer](#)
- [Basics of gas and oil exploration](#)
- [Technologies of gas and oil exploration](#)
- [Early days of the oil industry](#)
- [Pipeline construction](#)

Sources: PHMSA Calendar Year 2009 Annual Reports for Gas Transmission and Gathering, Gas Distribution and Hazardous Liquid; PHMSA Calendar Year 2009 npms submissions for LNG Plants.

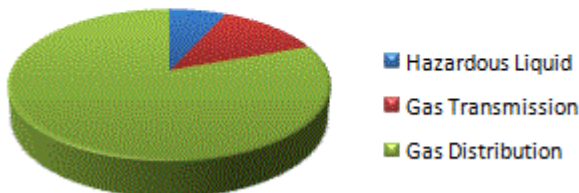
## The Pipeline Safety Record and Environmental Record

### Pipeline System Components

Pipelines stretch more than 2.6 million miles across the US. The majority of these pipelines are for gas distribution (80 percent). Another 300,516 miles of pipeline are used for gas transmission, which is 13 percent of the total. The remaining miles are used for hazardous liquids, 173,396 miles, or seven percent. Pipeline system components also require operators. For the entire system this amounts to about 2,500, half of which operate the gas distribution lines. Another 38 percent handle gas transmission, while 12 percent manage hazardous liquids.

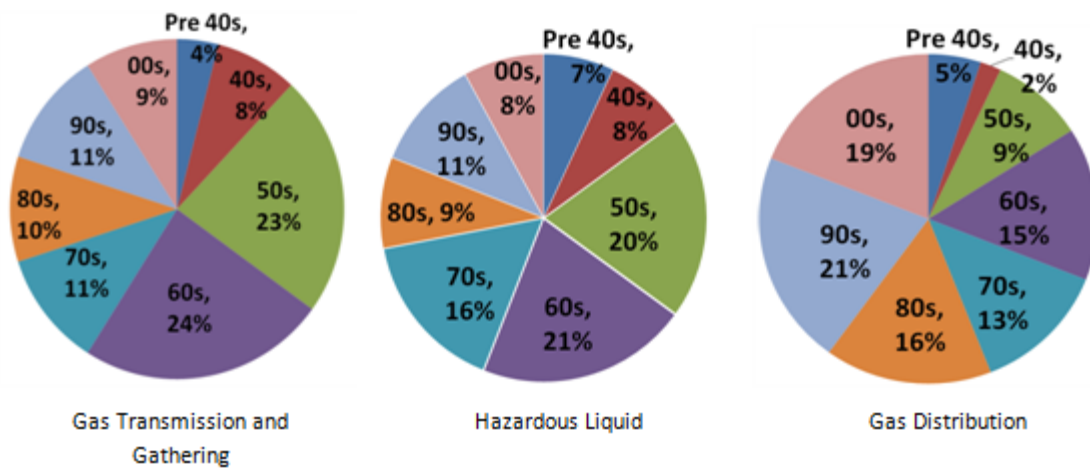
National Pipeline System Components				
Pipeline	Mileage	% Total	Operators	% Total
Hazardous Liquid	173,396	7	306	12
Gas Transmission	317,516	13	939	38
Gas Distribution	2,035,253	80	1,245	50
<i>(main)</i>	1,200,803	48		
<i>(service)</i>	834,450	32		
<b>Total</b>	<b>2,526,165</b>	<b>100</b>	<b>2,490</b>	<b>100</b>

**US Pipeline Mileage:  
2,526,165**



## Aging Infrastructure

Over 50% of the nation's pipelines were constructed in the 1950's and 1960's during the creation of the interstate pipeline network built in response to the huge demand for energy in the thriving post-World War II economy. Some pipelines were built even earlier. Approximately 3% of our gas distribution mains are made of cast or wrought iron and were built in the first half of the 20th century. Over 12% of the nation's cross-country gas transmission and hazardous liquid pipelines were built prior to the 1950's. Each of these types of pipelines has its own unique age (and even material) distribution. The figure below depicts the percentage of pipelines constructed by decade (50s = 1950's) for each of the three types of regulated pipelines.



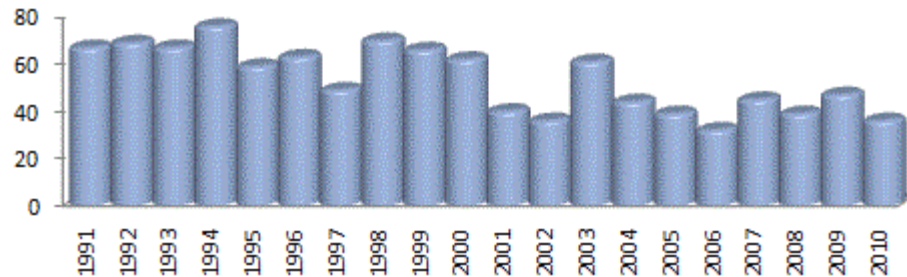
Some of our current pipeline infrastructure was built using materials and welding techniques that – though considered acceptable and state-of-the-art at the time -are no longer used today.

Recent incidents in San Bruno, California and Allentown, Pennsylvania have raised questions in the public's mind about the safety of older pipelines. PHMSA is taking a hard look at the causes and characteristics of these failures to identify means to prevent future incidents. Individual states are also examining the need to accelerate the replacement of high risk pipe to ensure public safety and the reliability of our critical pipeline infrastructure into the future.

## Pipeline Incidents with Death or Major Injury

Since 1986 the pipeline incidents causing death or major injuries have declined. The long term trend is an average decline of 10 percent every three years. Pipeline incidents can be caused by a number of factors including corrosion, equipment failure, as well as damage from excavations, incorrect operation, and natural forces. Current available data covers the period from 1991 through 2010.

Year	All Types
1991	67
1992	69
1993	67
1994	76
1995	59
1996	63
1997	49
1998	70
1999	66
2000	62
2001	40
2002	36
2003	61
2004	44
2005	39
2006	32
2007	45
2008	39
2009	47
2010	36

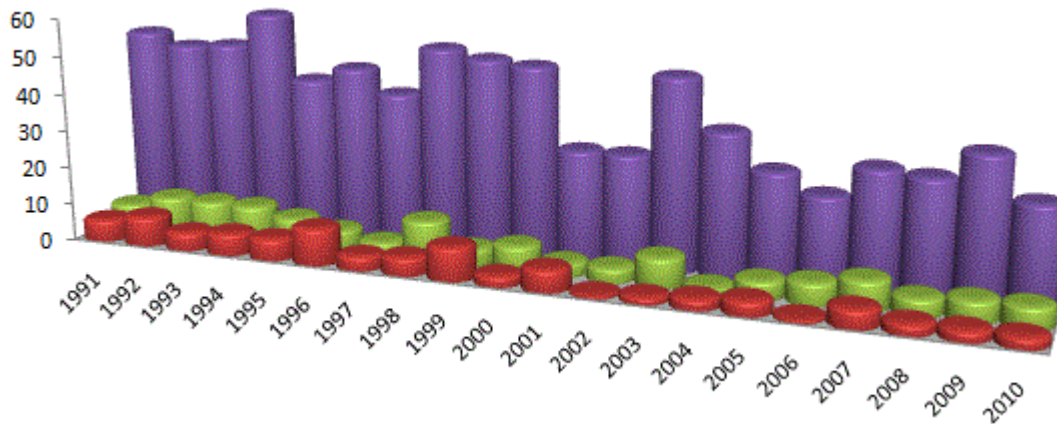




## Pipeline Incidents with Death or Major Injury by Sector

The number of Serious Accidents/Incidents fell 30% in the past five years, despite large increases in the number of both fatalities and injuries. Even though the high consequence accidents/ incidents in 2010 were small in number, they were somewhat catastrophic as compared to the average consequence of a serious accident over past years.

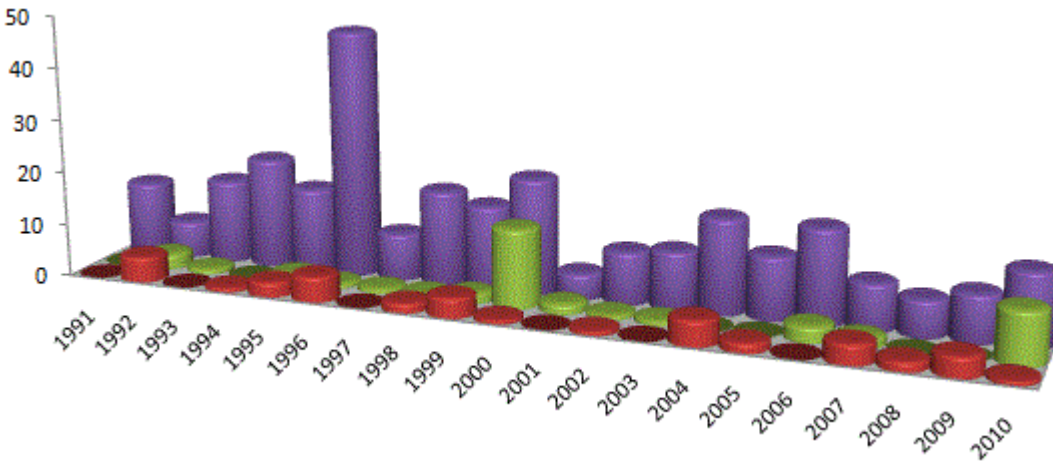
Year	Hazardous Liquid	Gas Transmission	Gas Distribution
1991	6	7	53
1992	8	10	50
1993	5	10	51
1994	6	10	60
1995	6	8	43
1996	10	6	47
1997	4	4	41
1998	5	11	54
1999	9	5	52
2000	3	7	51
2001	6	4	30
2002	1	4	30
2003	2	8	51
2004	3	2	38
2005	4	5	29
2006	1	6	24
2007	5	8	32
2008	3	5	31
2009	3	6	38
2010	3	6	27



## Pipeline Fatalities by Sector

Except for spike in fatalities in 1996, overall, the number of deaths due to pipeline incidents have remained low.

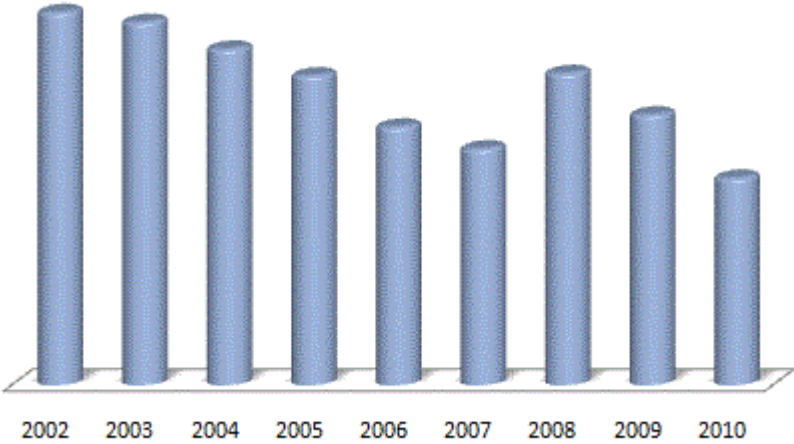
Year	Haz. Liquid	Gas Transmission	Gas Distribution
1991	0	0	14
1992	5	3	7
1993	0	1	16
1994	1	0	21
1995	3	2	16
1996	5	1	47
1997	0	1	9
1998	2	1	18
1999	4	2	16
2000	1	15	22
2001	0	2	5
2002	1	1	10
2003	0	1	11
2004	5	0	18
2005	2	0	12
2006	0	3	18
2007	4	2	9
2008	2	0	7
2009	4	0	9
2010	1	10	14



**Liquid Pipeline Spills with Environment Consequences**

Since 2002 and the number of incidents have decreased overall from 153 down to 85 in 2010.

Year	Spills
2002	153
2003	149
2004	138
2005	127
2006	106
2007	97
2008	128
2009	111
2010	85



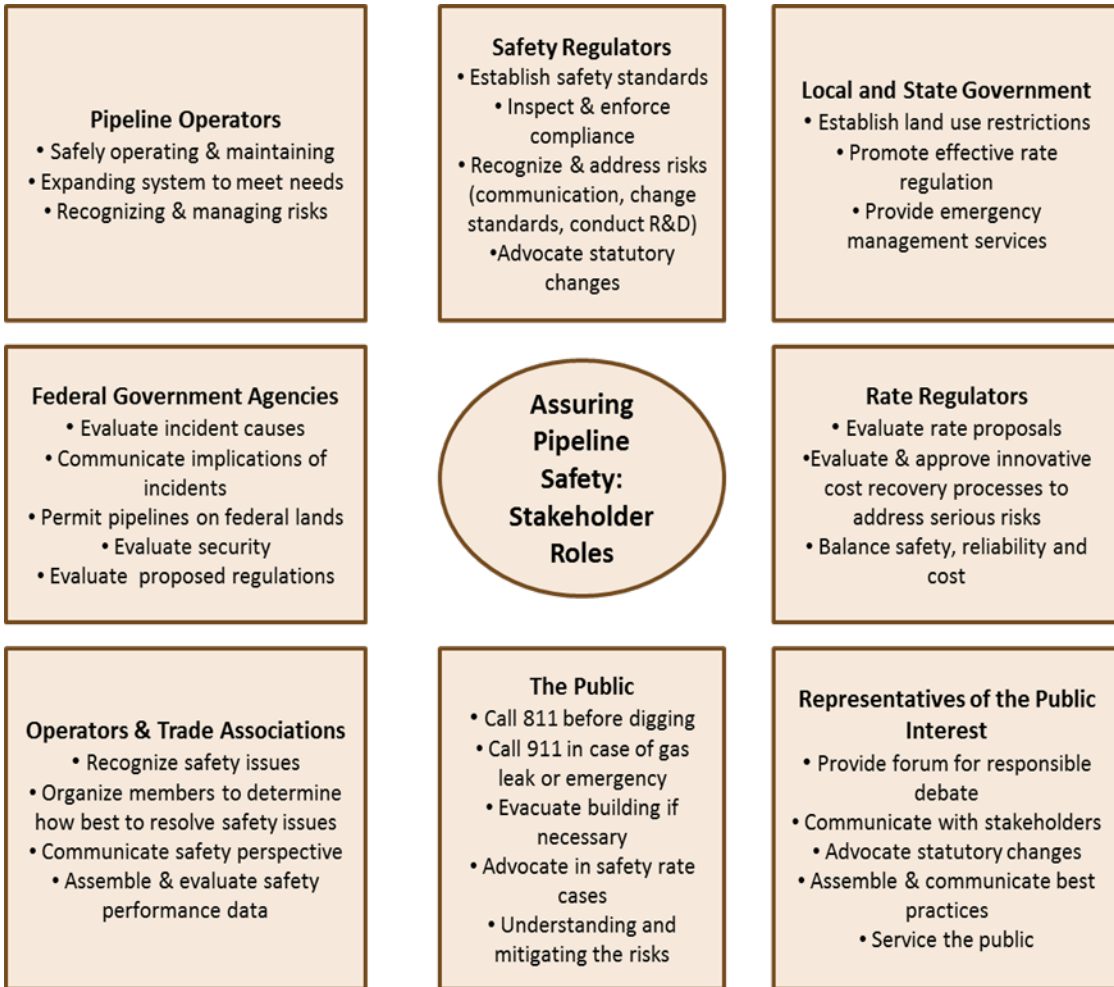
## The Role of Key Stakeholders

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### *Pipeline Safety Connects Us All*

Pipeline safety is a responsibility shared by all stakeholders. Community and pipeline safety is improved through active stakeholder participation, especially with regard to public awareness, damage prevention, risk-informed land use planning, and emergency management efforts.





## The Path Forward: Call to Action and Other Pipeline Safety Initiatives

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The Pipeline and Hazardous Materials Safety Administration (PHMSA) is committed to reducing transportation risks to the public and environment. PHMSA has been providing strong safety and environmental oversight of the pipeline network that delivers energy fuels to the American public. This oversight has focused on high-risk infrastructure issues, including a specific concern regarding the need to accelerate the repair, rehabilitation or replacement of certain high-risk pipeline infrastructure.

Under the leadership of Secretary LaHood, PHMSA has developed a comprehensive action plan to accelerate the rehabilitation, repair, and replacement of high-risk pipeline infrastructure. It has engaged pipeline safety stakeholders in the process to address parts of the pipeline infrastructure that need attention, and ensure that Americans remain confident in the safety of their families, homes, and communities. The strategy includes:

- **Call to Action** - U.S. DOT/PHMSA announced a “Call to Action,” actively engaging its state partners, technical experts, pipeline operators, safety advocates, and the public to focus on identifying pipeline risks and repairing, rehabilitating, and replacing the highest risk infrastructure to ensure they are fit for service.
- **Aggressive Efforts** - U.S. DOT/PHMSA hosted a Pipeline Safety Forum on April 18, 2011 to engage all stakeholders about the actions that U.S. DOT/PHMSA, States, and industry can take to raise the bar on pipeline safety; and the challenges to implementing these actions. During the week of July 18, 2011, PHMSA hosted a series of technical meetings on challenges associated with seam failure, pipeline risk assessments, and record keeping. PHMSA also hosted a meeting of Public Safety and Emergency Response Officials on December 9, 2011 to discuss pipeline emergency preparedness and emergency response.
- **Transparency** - U.S. DOT/PHMSA is executing this plan in a transparent manner with continuing opportunities for public engagement, including the creation of a dedicated website for this initiative.

**STRONG LEGISLATION** - PHMSA drafted an Administration legislative initiative for program reauthorization entitled, “Strengthening Pipeline Safety and Enforcement Act of 2010 (Act).” The proposal led to the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, which was signed into law by President Obama on January 3, 2012, and provides a number of strong pipeline safety measures, including:

- increases the maximum administrative civil penalties from \$100,000 per day/\$1 million for a series of violations to \$200,000 per day/\$2 million for a series of violations;

- grants authority, for the first time, to enforce oil spill response plans required of pipeline operators under the Oil Pollution Act of 1990;
- requires technical studies and analysis of leak detection systems, diluted bitumen, and excavation damage on pipeline safety;
- requires new regulations for the use of automatic or remotely controlled shut-off valves on new or replaced transmission pipelines;
- requires new regulations for tests to confirm material strength of previously untested gas transmission pipelines in high consequence areas (HCAs);
- requires regulations to confirm appropriate records to confirm maximum allowable operating pressures on gas transmission pipelines in highly populated or high consequence areas;
- requires a review of whether integrity management regulations should be expanded outside of high consequence areas;
- requires a review and report to Congress on existing Federal and State regulations for all types of gathering pipelines;
- requires a survey of the nation’s progress in replacing cast iron gas pipelines;
- requires actions to increase state and local emergency responder awareness of the National Pipeline Mapping System;
- limits incorporation by reference into regulation of any document that is not made publicly available free of charge on the internet website; and
- provides for consultation with and technical assistance for Indian tribes regarding the regulation of pipelines subject to tribe jurisdiction.

**AGGRESSIVE REGULATORY INITIATIVES** – Through rulemakings and actions taken since 2008, PHMSA has closed a record fifteen National Transportation Safety Board NTSB safety recommendations, addressing leak detection systems, excess flow valves, human fatigue, and internal operations of pipeline companies’ control rooms, and the distribution integrity management program (DIMP).

PHMSA conducted a thorough review of its inspection and enforcement related regulations and operations, as well as its data collection and transparency, and has taken the following actions:

Late 2012/Early 2013 Will issue NPRMs strengthening hazardous liquid and gas transmission pipeline oversight.

Fall 2012 NPRM to update Hazardous Liquid regulations.

- August 2012 NPRM published to incorporate into regulation the Act increase in PHMSA's civil penalties authority.
- July 31, 2012 Advisory Bulletin issued to alert all pipeline operators of the circumstances of the June 19, 2009 Canadian National Railway company freight train derailment in Cherry Valley, Illinois and remind them of the importance of assuring that pipeline facilities have not been damaged either during a railroad accident or other event occurring in the right-of-way. Further, the advisory bulletin reminds pipeline owners and operators of the importance of providing pertinent information to rail operators and emergency response officials during an incident.
- July 18-19, 2012 Hosted Research and Development Public Forum to identify gaps in needed pipeline technology and map a path forward to assure no unnecessary duplications and appropriately-leveraged resources.
- July 5, 2012 Information Collection Activity published to survey and request for comments to gauge the effectiveness of PHMSA 811 "Call Before You Dig" public awareness campaign materials.
- June 27, 2012 Public workshop was held to review the first year implementation of Distribution Integrity Management Program regulations and share lessons learned between Federal/State regulators and industry.
- June 2012 Advisory Bulletin issued to owners and operators of gas distribution pipeline facilities to provide clarification when completing the Mechanical Fitting Failure Report Form, PHMSA F 7100.1-2.
- May 2012 Advisory Bulletin issued to remind operators of gas and hazardous liquid pipeline facilities to verify their records relating to operating specifications for maximum allowable operating pressure (MAOP) required by 49 CFR 192.517 and maximum operating pressure (MOP) required by 49 CFR 195.310. This advisory bulletin follows-up on issues identified in the San Bruno incident investigation.



- April 2012 Information Collection Notice to revise gas transmission annual report to collect information relating to operator record verification of maximum allowable operating pressures and piggability of pipelines
- April 2012 NPRM published proposing to establish criteria and procedures for determining the adequacy of state pipeline excavation damage prevention law enforcement programs; establish an administrative process for making adequacy determinations; establish the federal requirements PHMSA will enforce in states with inadequate excavation damage prevention law enforcement programs; and establish the adjudication process for administrative enforcement proceedings against excavators where federal authority is exercised. The development of these criteria and the subsequent determination of the adequacy of state excavation damage prevention law enforcement programs is intended to encourage states to develop effective excavation damage prevention law enforcement programs to protect the public from the risk of pipeline ruptures caused by excavation damage, and allow for federal administrative enforcement action in states with inadequate enforcement programs.
- March 2012 Advisory Bulletin issued to alert operators using Driscopipe® 8000 High Density Polyethylene Pipe (Drisco8000) of the potential for material degradation.
- March 2012 Advisory Bulletin issued to owners and operators of pipeline facilities notifying them of PHMSA's plan for implementing the national registry of pipeline and liquefied natural gas operators.
- March 2012 Advisory Bulletin issued to owners and operators of natural gas cast iron distribution pipelines and state pipeline safety representatives urging owners and operators to conduct a comprehensive review of their cast iron distribution pipelines and replacement programs and accelerate pipeline repair, rehabilitation, and replacement of high-risk pipelines.
- February 2012 Advisory Bulletin issued to remind operators of pipelines and Liquid Natural Gas (LNG) facilities of the need to conduct post-accident drug and alcohol testing of all potentially involved personnel regardless of the circumstances of the accident.

- January 2012 Advisory Bulletin issued to advise owners and operators of pipeline facilities of the implementation of the national registry of pipeline and liquefied natural gas operators.
- December 2011 DOT conducted an Emergency Responder Forum to initiate the development of an action plan for improving emergency responders' awareness of and capability to respond to pipeline emergencies.
- December 2011 PHMSA hosted a series of State Pipeline Legal Forums to provide information to its state enforcement partners on how PHMSA can assist them with enforcement matters pertaining to pipeline operators.  
 February 2012  
 May 2012
- November 2011 ANPRM published seeking public comment on issues relating to the expanded use of excess flow valves (EFVs) in gas distribution systems serving other than single family residences.
- November 2011 NPRM published proposing to make miscellaneous changes to the pipeline safety regulations. The proposed changes would correct errors, address inconsistencies, and respond to rulemaking petitions.
- September 2011 Advisory Bulletin issued to remind owners and operators of gas and hazardous liquid pipelines of the potential for damage to pipeline facilities caused by hurricanes.
- August 2011 ANPRM published seeking public comment on whether gas transmission integrity management (IM) requirements should be strengthened, including adding more prescriptive language in some areas, and whether other issues related to system integrity should be addressed by strengthening or expanding non-IM requirements. The comment period closed January 20, 2012 and PHMSA is preparing a NPRM.
- July 2011 Advisory Bulletin issued to all owners and operators of gas and hazardous liquid pipelines to communicate the potential for damage to pipeline facilities caused

by severe flooding.

- July 2011 Conducted a Risk Assessment and Records Retention Workshop relating to the San Bruno incident.
- June 2011 Final Rule published which expedited the program implementation deadlines in the Control Room Management/Human Factors regulations in order to realize the safety benefits sooner than established in the original rule.
- May 2011 Advisory Bulletin issued advising owners and operators of gas transmission and gathering systems and Liquefied Natural Gas (LNG) facilities that they have until August 15, 2011, to submit their Calendar Year 2010 Annual Reports. This document also provided guidance for Calendar Year 2010 National Pipeline Mapping System (NPMS) submissions.
- February 2011 Final Rule published revising the pipeline safety regulations to clarify the types of pipeline fittings involved in the compression coupling failure information collection; changes the term "compression coupling" to "mechanical fitting," aligns a threat category with the annual report; and clarifies the Excess Flow Valve (EFV) metric to be reported by operators of gas systems. This rule also announced the Office of Management and Budget (OMB) approval of the revised Distribution Annual Report and a new Mechanical Fitting Failure Report. Finally, this rulemaking clarified the key dates for the collection and submission of the new Mechanical Fitting Failure Report.
- February 2011 Advisory Bulletin issued advising owners and operators of petroleum gas and natural gas facilities of the need to take the appropriate steps to prevent damage to pipeline facilities from accumulated snow or ice.
- January 2011 Advisory Bulletin issued to remind pipeline operators to perform detailed risk analyses that integrate accurate pipeline data and information when calculating Maximum Allowable Operating Pressure (MAOP), and to utilize those risk analyses to identify integrity threats and preventive measures, as a result of the San Bruno incident.
- January 2011 Final Rule published to improve data collection from operators of pipelines and

liquefied natural gas facilities.

December 2010 Final Rule published to regulate the remaining population of unregulated rural hazardous liquid low stress pipelines, which was required by the PIPES Act of 2006.

November 2010 Final Rule published to require electronic filing of all reports and standardize reporting by operators.

November 2010 Advisory Bulletin issued to remind pipeline operators of the requirement to share their emergency response plans with emergency response officials.

September 2010 Advanced Notice of Proposed Rulemaking (ANPRM) published to consider eliminating regulatory exemptions in oversight of hazardous liquid pipelines. In addition, PHMSA sought comments on whether other areas along a pipeline should be identified for extra protection; whether to establish minimum leak detection requirements for all pipelines; whether to require emergency flow restricting devices in certain areas; whether revised valve spacing requirements are needed; whether repair timeframes should be specified for pipelines outside high consequence areas (HCAs); and whether to establish and/or adopt standards and procedures for improving the methods of preventing, detecting, and remediating stress corrosion cracking. The comment period closed February 18, 2010. PHMSA is preparing a Notice of Proposed Rulemaking (NPRM).

August 2010 Advisory Bulletin issued to pipeline operators that addresses the use of personal electronic devices by individuals while performing pipeline safety functions.

June 2010 Advisory Bulletin issued to operators of hazardous liquid pipeline facilities requiring them to prepare and submit an updated oil spill response plan in light of Deepwater Horizon incident's demands and concerns.

March 2010 Advisory Bulletin issued to notify owners and operators of recently constructed large diameter natural gas pipeline and hazardous liquid pipeline systems of the potential for girth weld failures due to welding quality issues.

- January 2010 Advisory Bulletin issued to require hazardous liquid pipeline operators to implement prompt and effective leak detection systems.
- December 2009 Final Rule published to address human factors and other aspects of control room management (CRM) for pipelines where controllers use computerized or automated supervisory control and data acquisition (SCADA) systems to encourage the safe operations of pipeline systems. This rule originally was to be fully implemented in 2013, but was expedited in May 2011.
- December 2009 Final Rule published to require operators of gas distribution pipelines to develop and implement integrity management programs similar to those required for gas transmission and hazardous liquid pipelines. This rule took effect in August 2011.

**EFFECTIVE ENFORCEMENT** – PHMSA has significantly increased its inspection and enforcement personnel with a 38% increase in staffing since 2008. As a result, PHMSA has been able to reduce its enforcement case backlog by closing 872 cases, issuing 323 Final Orders, and collecting over \$29.5 million in civil penalties. Recognizing that expediting our enforcement process is important to ensure operators promptly correct non-compliances and to facilitate timely analysis of enforcement data, PHMSA undertook a number of initiatives to speed up pipeline enforcement, including developing monthly case timing reports that compiled metrics of progress in processing cases for each enforcement step and establishing target times for key enforcement steps. As a result of these initiatives:

- The average number of days awaiting a decision on petition for reconsideration has also dropped off sharply by 73%, from 563 days in 2009 to 157 cases as of August 2012.
- The cases pending action in the region offices has reduced by 9%, from 167 cases in 2009 to 153 cases as of August 2012.
- The cases pending in PHMSA’s docket has reduced by 68%, from 127 at the beginning of 2009 to only 41 cases as of August 2012.
- PHMSA reversed a years-long trend of increasing times between initiating an enforcement case to issuing a Final Order for cases alleging a pipeline safety violation and that included a proposed civil penalty and/or a proposed Compliance Order. The yearly average has dropped by 55%, from 737 days in 2009 to 330 days so far in 2012.
- PHMSA has also reduced by 33% the average number of days between initiating an enforcement case and closing the case, going from 837 days in 2009 to 564 days so far in 2012.

- Since 2008, PHMSA has increased the number of Final Orders issued, going from 41 orders in 2008 to 103 orders in 2011.

PHMSA has taken aggressive action to deal with a number of pipeline accidents to ensure that operators take prompt and effective actions to correct hazardous conditions and to ensure that operators are held accountable for compliance with safety laws. Recent actions include:

July – August 2012	On July 5, 2012, PHMSA issued a Notice of Probable Violation to Enbridge Energy, alleging 22 pipeline safety violations and seeking a record \$3.7 million administrative civil penalty for a failure that occurred on the company’s Lakehead Pipeline near Marshall, Michigan, in July 2010. The failure resulted in one of the country’s largest inland crude oil spills and contaminated roughly 38 miles of the Kalamazoo River. Two years later, in July 2012, Enbridge suffered another serious oil spill on the Lakehead Pipeline in Wisconsin. PHMSA took swift action by issuing a Corrective Action Order to Enbridge and by securing an agreement by the company to develop a comprehensive plan to address various safety problems on the entire 1,900-mile Lakehead system.
July 2012	Reestablishing a process with federal agencies Department of Justice (DOJ) and Environmental Protection Agency (EPA) to discuss corresponding jurisdictions over pipeline safety.
June 2012	Issued Notices of Probable Violation (NOPV) to Kinder Morgan Energy Partners, Rockies Express Pipeline, LLC for deficiencies found on their REX pipeline and for failure to abide by the terms of a special permit granted by PHMSA. The Notices will lead to orders requiring Kinder Morgan to take corrective actions to improve their inspection of welds, nondestructive weld testing and removal of defects from their system. The Notice also proposes a total of over \$1 million in civil penalties.
May 2012	PHMSA reached a settlement with Marathon Pipe Line, LLC, in a case arising out of a 2009 accident at the company’s St. James Terminal near Garyville, Louisiana. During a repair project, a Marathon contractor ignited hazardous vapors in a crude oil sump, causing an explosion that resulted in one fatality and three injuries. In the consent agreement, Marathon agreed to pay a penalty of \$842,650, take certain compliance actions, and spend at least \$305,000 on a supplemental safety project aimed at reducing the risk of similar accidents in the

future.

- December 2011  
February 2012  
May 2012
- PHMSA hosted a series State Pipeline Legal Forums to provide information to its state enforcement partners on how PHMSA can assist them with enforcement matters pertaining to pipeline operators.
- May 2011
- Issued a Corrective Action Order to BP Exploration (Alaska), Inc., (BPXA) for a spill on the North Slope of Alaska on March 15, 2006. BPXA experienced another spill on the North Slope in August 2006. As a result of the spills and violations of the Corrective Action Order, PHMSA and the EPA referred the matter to the Department of Justice for judicial enforcement. In March 2009, the U.S. filed suit against BPXA alleging violations of the Clean Water Act, the Clean Air Act, and the federal Pipeline Safety Laws and seeking civil penalties and injunctive relief. In July 2011, the U.S. District Court for the District of Alaska approved a consent decree among the parties in which BPXA agreed to pay a combined \$25 million civil penalty for violations of the various statutes. The government allocated \$4.5 million of the penalty for violations of the Pipeline Safety Laws. This is in addition to the approximately \$200 million that BPXA had already spent replacing the lines that leaked on the North Slope. The penalty is the largest per-barrel penalty PHMSA has ever issued for an oil spill.
- July 2011
- Issued a Corrective Action Order to ExxonMobil after a failure on its pipeline crossing the Yellowstone River in Montana. The order required ExxonMobil to replace the pipeline under the river and review the other Silvertip Pipeline river crossings. PHMSA's accident investigation is still ongoing.
- February 2011
- Issued a Notice of Proposed Safety Order to Alaska after a leak on the Trans-Alaska Pipeline System on January 8, 2011. The Notice led to a Consent Order requiring them to take corrective measures, including replacing certain piping, evaluating the need for increased tank capacity at pump stations, revising its "Cold Restart Plan," and proving the plan's feasibility. The operator continues to work towards full compliance with this order.
- December 2010
- Issued a Corrective Action Order to address two separate incidents that occurred on the Chevron pipeline in Salt Lake City. The Order required Chevron to repair all of the facilities affected by its June 2010 hydrostatic pressure test performed after the first incident. The operator continues to work towards full compliance

with this order.

- November 2010 Issued a Notice of Proposed Safety Order to ONEOK NGL Pipeline, L.P. after a pipeline failure that had occurred on November 1, 2010 in Oklahoma. The Notice led to a Safety Order requiring ONEOK to review previous inline inspection data, identify areas where accelerated corrosion may be occurring, and remediate those areas. The operator is continuing to work towards full compliance with this order.
- September 2010 Issued a Final Amended Corrective Action Order to Enbridge after the discovery of a leak on the Lakehead System. The Order required Enbridge to conduct a comprehensive review of the operating history of the line and prescribed further inspections, testing, and repairs within and beyond the immediate failure area, and specifically ordered the replacement of pipeline under the St. Clair River in Michigan. The operator is continuing to work towards full compliance with this order.
- September 2010 Issued a Notice of Proposed Safety Order to Columbia Gas Transmission LLC (CGT) after a failure of a pipeline transporting natural gas that occurred on September 9, 2010 in Ohio. The notice led to a Safety Order requiring CGT to develop and implement a remedial plan on corrosion procedures and perform appropriate permanent repairs. The operator has since complied with all ordered actions and the case was closed on December 12, 2011.

**FOCUSED SAFETY EFFORTS** – PHMSA focused resources to address identified and emerging safety concerns. Examples include:

#### **Secretary LaHood's Call to Action to Address High Risk Pipeline Infrastructure**

- Throughout 2011 and 2012
- August 2012 – Released national cast iron inventory system on PHMSA website. Information shows annual national and state mileage of cast iron pipeline (high risk infrastructure) since 2004.
  - April 2011 – Pipeline Safety Awareness Forum – Formal announcement of the Secretary's Call to Action.
  - July 2012 - Held pipeline modernization press conference in Columbus, OH to highlight the replacement of aging pipelines.
  - June 2012 and July 2012 - Participated in the National Association of Regulatory Utility Commissioners (NARUC) Summer Committee meetings to urge state regulators to consider the safety implications of rate decisions



versus replacement programs for high risk pipeline infrastructure.

- April 2012 - Held a press conference in Pittsburgh, PA to announce NiSource, Inc.'s \$4 billion pipeline modernization project spanning six states.
- March 2011 - Secretary LaHood met with FERC Chairman Jon Wellinghoff.
- March 29, 2011 and March 27, 2012 - Secretarial meetings with oil and gas pipeline industry executives.
- April 2011 and May 2012 - Sent letter to each State Governor requesting the status of their replacement programs for high risk infrastructure such as cast iron pipeline systems.
- March 2011 and May 2012 - Sent letters to the State Regulatory Commissioners and State Pipeline Safety Commissions.
- 2011/2012 - Participated in National Association of Pipeline Safety Representative regional and annual meetings.
- 2011 - Established pipeline safety awareness website focused on repair, rehabilitation, or replacement of high risk infrastructure.

#### **Exxon Mobil Crude Oil Spill into Yellowstone River:**

Throughout  
2011 and 2012

- Following the July 1, 2011 Exxon Mobil crude oil release into the Yellowstone River, PHMSA inspectors conducted specialized inspections and data collection activities to determine the status of other petroleum pipelines that cross major waterways in or enter into Montana.
- PHMSA teamed with the MT Governor's task force on pipeline river crossings.
- After completion of the field investigation, PHMSA proceeded with the inspection of the remedial activities of all crossings that were at risk.

#### **PG&E San Bruno, CA Incident & Enbridge Marshall, MI Accident Follow-up:**

Throughout  
2011 and 2012

- Following the San Bruno tragedy, PHMSA conducted Integrity Management Program inspections (or re-inspection) of all PHMSA regulated gas transmission lines in California.
- March 2012 - Pipeline Valve Type and Placement & Leak Detection Forum to follow-up on issues identified in San Bruno and Marshall, MI incidents.
- July 2011 - Risk Assessment and Records Retention Workshop focused on issues identified during investigation of the incidents by both PHMSA and NTSB.
- PHMSA is assisting the California Public Utilities Commission (CAPUC) with a various inspections of Pacific Gas & Electric pipeline facilities; and review of

its programs, including:

- Distribution Integrity Management Inspection - December 10-14, 2012
- Control Room Management - October 22-26, 2012
- Standard Inspection Kettleman District and Compressor Station - October 8-10, 2012
- Transmission Integrity Management - August 27-31, 2012 and September 10-14, 2012
- Operator Qualification - July 30 - August 3, 2012
- Operation, Maintenance, and Emergency Response Plans - February 13-17, 2012
- Public Awareness Effectiveness - November 1-3, 2011
- PHMSA has provided extensive training to current and new CAPUC inspector personnel. Federal and State personnel are trained together at PHMSA's Training and Qualification center in Oklahoma City, OK.

### **Emergency Responder Outreach Program**

Throughout  
2011 and 2012

- Working with the National Association of State Fire Marshalls and the U.S. Fire Administration/National Fire Academy to identify ways to get pipeline related information and training resources out to emergency responders.
- 2012 – Hosted Georgia emergency response working group which will serve as a state-wide pilot program in the effort to improve communication and training between emergency responders and pipeline operator. May serve as a model for use by other states.
- 2012 - Established a Pipeline Emergency Response Working Group comprised of a cross-section of stakeholders to institutionalize emergency responder training into existing processes and systems. The group is co-chaired by an emergency responder and industry leads. The group is also developing a resource guide for use by emergency responders and pipeline operators.
- Published two feature articles in emergency responder publications as part of pipeline education and outreach (Fire Rescue and Fire Chief magazines).
- Engaged the National Academy of Science/Transportation Research Board study to look identify how to improve communications and information sharing between emergency responders and pipeline operators
- December 2011 – DOT hosted an Emergency Responder Forum to initiate the development of an action plan for improving emergency responders' ability to prepare for and respond to pipeline emergencies.

## **Oil Spill Program**

Throughout  
2012

- Refocused agency attention on facility response plans (FRP's), identifying and addressing gaps.
- Allocated two additional full-time staff for review of FRP plans.
- Established interagency working group, including Coast Guard and EPA, to review and coordinate on oil spill response programs. The focus of the group included communications, coordination on the effectiveness of operator plans.
- Developed a mechanism to quickly transmit FRPs and other critical information to the Federal On Scene Coordinator rapidly and securely in response to a pipeline incident.
- Participated in a multi-agency review of Preparedness for Response Exercise Program (PREP) guidelines.
- Revised all FRP evaluation criteria to better reflect DOT/PHMSA regulatory requirements.
- Developed an IT system to automate and standardize the evaluation criteria for FRP review.
- Instituted multiple stage reviews of operators' FRP's to improve conformity with the practices of other agencies.
- Improved the use of FRP criteria for evaluation of oil spill exercises to ensure the inclusion of the elements of the incident command system.
- Trained regional and legal staff on FRP review criteria and the technology tool used to manage the FRP approval process.

## **Distribution Integrity Management Program**

Throughout  
2011 and 2012

- June 27, 2012 - Public workshop to review the first year implementation of Distribution Integrity Management Program regulations and share lessons learned between Federal/State regulators and industry.
- PHMSA trained State inspectors, helped develop state inspection forms, FAQs, and inspection guidance for implementing DIMP, and performed pilot inspections to validate and enhance inspection forms and guidance.

## **Enbridge Wisconsin Crude Oil Incident Follow-up**

July/August  
2012

- A meeting is planned between Enbridge senior leadership and PHMSA on September 5, to review and discuss specific actions required under the Lakehead Plan.
- August 2012 - Required Enbridge Energy to submit a comprehensive safety plan for entire Lakehead system as a condition of restart for Line 14 in WI.
- July 2012 - Prohibited Enbridge Energy from restarting pipeline in WI until safety plan submitted.

**ROBUST STATE PARTNERSHIP** – PHMSA increased its funding to state pipeline safety partners, and is covering 72 percent of state pipeline safety program costs, totaling approximately \$42.5 million for 2011. Since 2002, PHMSA has spent over \$8 million to train local first responders to safely respond to pipeline emergencies and develop a comprehensive web-based training library. In addition to training all State and Federal pipeline inspectors on protocols, PHMSA works with the National Association of State Pipeline Safety Representatives to develop and provide national, regional, and State training. When incidents occur, PHMSA works closely with responding state and federal officials to determine the impact to the public and to provide as much investigative, legal, and technical assistance as necessary. Recent examples include:

Alaska

PHMSA assisted in the aftermath of a release on the North Slope involving a pipeline regulated by the Alaska Department of Environmental Conservation.

California

PHMSA provided legal guidance, on-scene investigation support, and continuing technical support related to the San Bruno incident. PHMSA joined with California Public Utility Commission (CPUC) to inspect the failed operator's risk assessment plan and public awareness program it is currently working to schedule additional inspections of PG&E in conjunction with the CPUC.

Mississippi

To address significant safety issues on a municipal pipeline regulated by Mississippi, PHMSA informally consulted with the state pipeline safety office and the operator to draft the terms of a consent agreement to resolve certain safety issues, including replacing steel mains, valves, meters, regulators, and odor bottle installations.

North Carolina	PHMSA provided assistance to the North Carolina pipeline safety program for review of welding of a new pipeline under construction.
Pennsylvania	Assisted State pipeline safety inspectors with a DIMP inspection following a tragic pipeline incident in Allentown. PHMSA also provided technical assistance to the Commonwealth of Pennsylvania following cast iron pipeline failures which resulted in fatalities in Allentown and Philadelphia
Puerto Rico	PHMSA responded to an oil pipeline discharge outside San Juan, and helped clarify jurisdictional issues between the Coast Guard, PHMSA, and Puerto Rico. PHMSA also assisted in preparing violation notices and collecting evidence.

### **ADDITIONAL ACCOMPLISHMENTS**

- 2012 - PHMSA supported several damage prevention initiatives, including an “811 Call Before You Dig” public awareness campaign—which features the agency’s first ever public service announcement—and awarding 34 state damage prevention grants for about \$3 million. Expanded 811 and other outreach efforts in FY12 both on the Web, through social media and via public service awareness activities such as legal forums, workshops and training.
- March 2012 - Awarded contract to the National Academy of Sciences to conduct a study on the effect of diluted bitumen crude oil in pipelines.
- July 18-19, 2012 – Held a Research and Development Public Forum to identify gaps in needed pipeline safety technology and map a path forward to identify and remove unnecessary duplications and appropriately leveraged resources.
- August 2012 - Held pipeline safety press conference and demonstration with first responders and Washington Gas to promote the use of 811 and safe digging.
- PHMSA published fifty recommendations to help local governments, zoning officials, real estate developers, and community planners better plan projects in areas near transmission pipelines. These recommendations were detailed in the report prepared by the Pipeline and Informed Planning Alliance titled *Partnering to Further Enhance Pipeline Safety in Communities through Risk-Informed Land Use Planning*.

- October 2012 – Will conduct a Data and Performance Measures Public Workshop to identify gaps between available and needed data, the use of the data to evaluate safety performance and identify emergency safety trends. A significant portion of the workshop will focus on meaningful performance metrics and voluntary reporting.
- As part of President Obama’s Executive Order 13604 to *Improve Performance of Federal Permitting and Review of Infrastructure Projects*, DOT announced its support for a 1,000 mile gas pipeline modernization project by NiSource, Inc.
- The President’s Fiscal Year 2013 budget request to Congress includes a 60 percent increase in funding above Fiscal Year 2012 for pipeline safety in America. These dollars will help improve safety and increase accountability by hiring more inspectors, increasing coordination with states, and educating the public.

## Pipeline Safety Guide

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Each stakeholder group, including members of the general public, plays a critical role in ensuring pipeline safety. Learn the about specific steps that you can take to keep your community safe.

### Recognizing and Responding to Pipeline Leaks

Remember that pipelines carry both flammable gases and hazardous liquids. Gas leaks in most city and residential areas are recognizable by the characteristic smell of rotten eggs. Both gas and hazardous liquid leaks often kill nearby vegetation. If you notice either of these symptoms, call 911 or your local gas utility, and avoid any action that could ignite the gas or oil while you await response. **For more information, see the guidance below.**

### Dig Safely

Excavation damage is the leading cause of incidents that result in death and/ or serious injury. Regardless of where you are, there may be pipelines and other utilities buried underground. It is important to follow safe digging practices, whether you are a homeowner planting a tree or digging a fence post hole, or a professional excavator. Safe digging always starts with a prior call to your local one call center to mark underground utilities. Knowing what’s below enables diggers to avoid underground utilities, and can prevent injury, death, environmental damage and loss of critical services.

One-call Centers One-call centers provide a simple means for locating underground utilities in an area where you plan to excavate by enabling you to place just one call, **before digging**. You should plan to make this call at least three days before undertaking any excavation to allow time for marking to occur.

Dial 811 By simply dialing 811, you can reach the one-call center. There is no cost to you for this service. If, for some reason, you can’t connect to the one-call center by dialing 811, dial 1-888-258-0808 or visit [Call811.com](http://Call811.com) and select the [Local Info](#) tab for information to call the one-call center directly.

### Are Pipelines Located Near You?

To find out if an oil or gas transmission pipeline is located near you, visit the website for the [National Pipeline Mapping System](#) (NPMS). Click on the “NPMS Public Map Viewer” button, and search by your county or zip code. Get step-by-step user instructions by watching our video, [“How to Locate Pipelines with the Public Viewer App.”](#) **Never use NPMS information in place of calling a one-call center before digging.**

### Additional Public Awareness Information

PHMSA provides additional information on its [Stakeholder Communications website](#). There you can find information on the following, and more:

- [Pipeline operator public awareness program](#) requirements
- [State pipeline incident and mileage data](#) and who regulates pipelines in your State
- Contact a [PHMSA Community Assistance and Technical Services](#) agent near you

## PIPELINE SAFETY CHECKLIST

### Guidance for Recognizing and Responding to Pipeline Leaks In Your Home or Workplace:

If you notice the distinctive sulfur or “rotten egg” smell of odorized natural gas, follow these **DO's** and **DONT's**.

#### DO!

- ✓ Make sure gas appliances are turned all the way OFF;
- ✓ Leave the building and go outdoors area;
- ✓ Call 911 from a neighbor's house or other location well away from the gas leak;
- ✓ Explain the situation and listen to all instructions;
- ✓ Warn others—*if it is safe to do so*—against entering the leak area and/or creating ignition sparks.

#### DO NOT!

- ✗ Start an engine of any kind of machinery or power device;
- ✗ Strike matches or create a flame of any kind;
- ✗ Use a telephone or cell phone (these can ignite airborne gases);
- ✗ Use a “striking” tool that may generate a spark;
- ✗ Turn on or off any light switches, garage door openers or other electrical switches (these also can ignite airborne gases).

### Near a Pipeline Right-of-Way:

Along a right-of-way, you may see dead or discolored vegetation, pooled liquid, or a cloud of vapor or mist. You may smell an unusual odor, or the scent of petroleum or odorized natural gas. And you may hear an unusual hissing or roaring sound. If you suspect a pipeline leak has occurred:



## DO!

- ✓ Make sure gas appliances are turned all the way OFF;
- ✓ Leave the area;
- ✓ Telephone 911 from a neighbor's house or other location well away from the gas leak;
- ✓ Explain the situation;
- ✓ Warn others—*if it is safe to do so*—against entering the leak area and/or creating ignition sparks.

## DO NOT!

- ✗ Touch, breathe or make contact with leaking liquids;
- ✗ Start an engine or any kind of machinery or power device;
- ✗ Strike matches or create a flame of any kind;
- ✗ Use a telephone or cell phone (these can ignite airborne gases);
- ✗ Turn on or off any electrical switches (these also can ignite airborne gases);
- ✗ Drive into a leak or vapor cloud area.

## Image Library

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**Access data including photos, graphs and tables to better illustrate the Pipeline Safety Update.**

Figure 1 Hazardous Liquid and Gas Transmission Pipelines

Figure 2 Natural Gas Pipeline Systems: From the Wellhead to the Consumer

Figure 3 Petroleum Pipeline Systems: From the Wellhead to the End User

Figure 4 Key Stakeholders in Assuring Pipeline Safety

Figure 5 Examples of Key Stakeholder Roles

Figure 6 Pipeline Safety Context Measures (1988-2010)

Figure 7 Serious Pipeline Incidents (Causing Death or Major Injury)

Figure 8 Trends in the Number of Significant Pipeline Systems Incidents 1991 to 2010

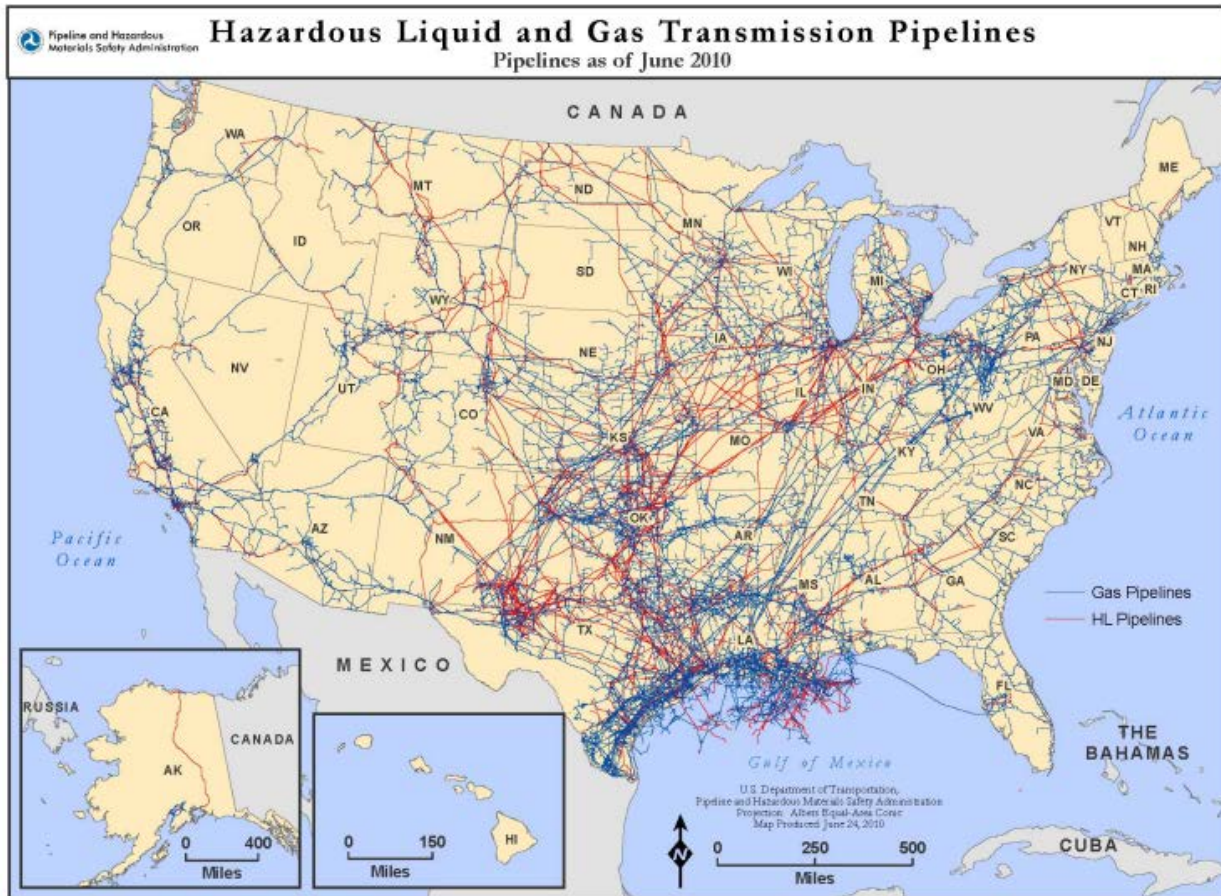
Figure 9 Significant Incidents for Gas Transmission Pipelines

Figure 10 Pipeline System Significant and Serious Incidents per year – 2005-2010

Figure 11 Pipeline Age Profile for Transmission and Distribution Pipelines

Figure 12 Challenges and Ongoing Initiatives

Figure 1 Hazardous Liquid and Gas Transmission Pipelines



There are nearly 299,000 miles of onshore natural gas transmission pipelines and over 171,000<sup>[1]</sup> miles of hazardous liquid pipelines moving energy products throughout the U.S. every day.

<sup>1</sup> PHMSA's Office of Pipeline Safety (PHMSA) pipeline mileage data from Annual Reports; mileage cited is from 2009 annual reports submitted as of May 2010.

<http://www.phmsa.dot.gov/portal/site/PHMSA/menuitem.ebdc7a8a7e39f2e55cf2031050248a0c/?vgnnextoid=036b52edc3c3e110VgnVCM1000001ecb7898RCRD&vgnnextchannel=3430fb649a2dc110VgnVCM1000009ed07898RCRD&vgnnextfmt=print>

**Figure 2 Natural Gas Pipeline Systems: From the Wellhead to the Consumer**

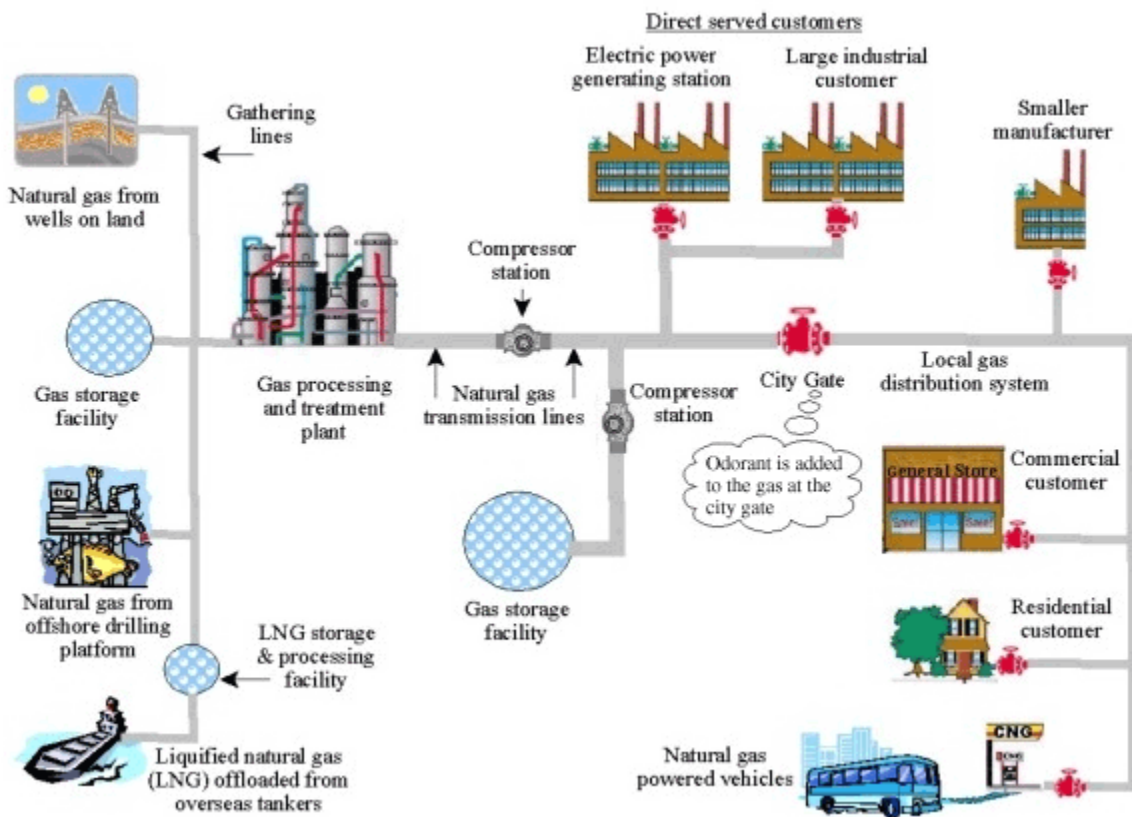


Figure 2 illustrates how natural gas is delivered from wells and storage facilities through a network of gas conditioning and pipeline facilities to the end user. Beginning at the left, gathering lines transport natural gas from wells to processing facilities. Processing facilities prepare gas for end use. Cross-country steel pipelines, usually large diameter (between 8 and 48 inches) pipes operating at higher pressures, transport the processed natural gas to industrial customers, power plants, and local gas distribution utilities. Gas distribution utilities move the gas locally to individual residences and other consumers.

**Figure 3 Petroleum Pipeline Systems: From the Wellhead to the End User**

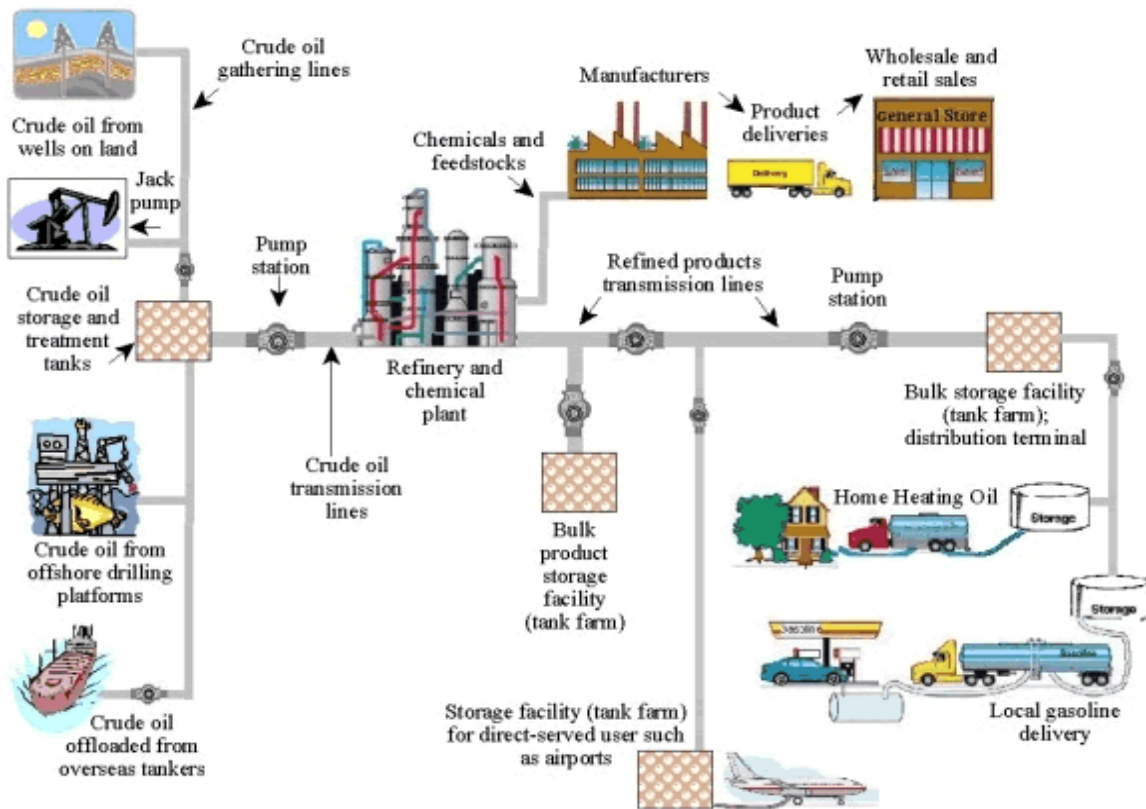
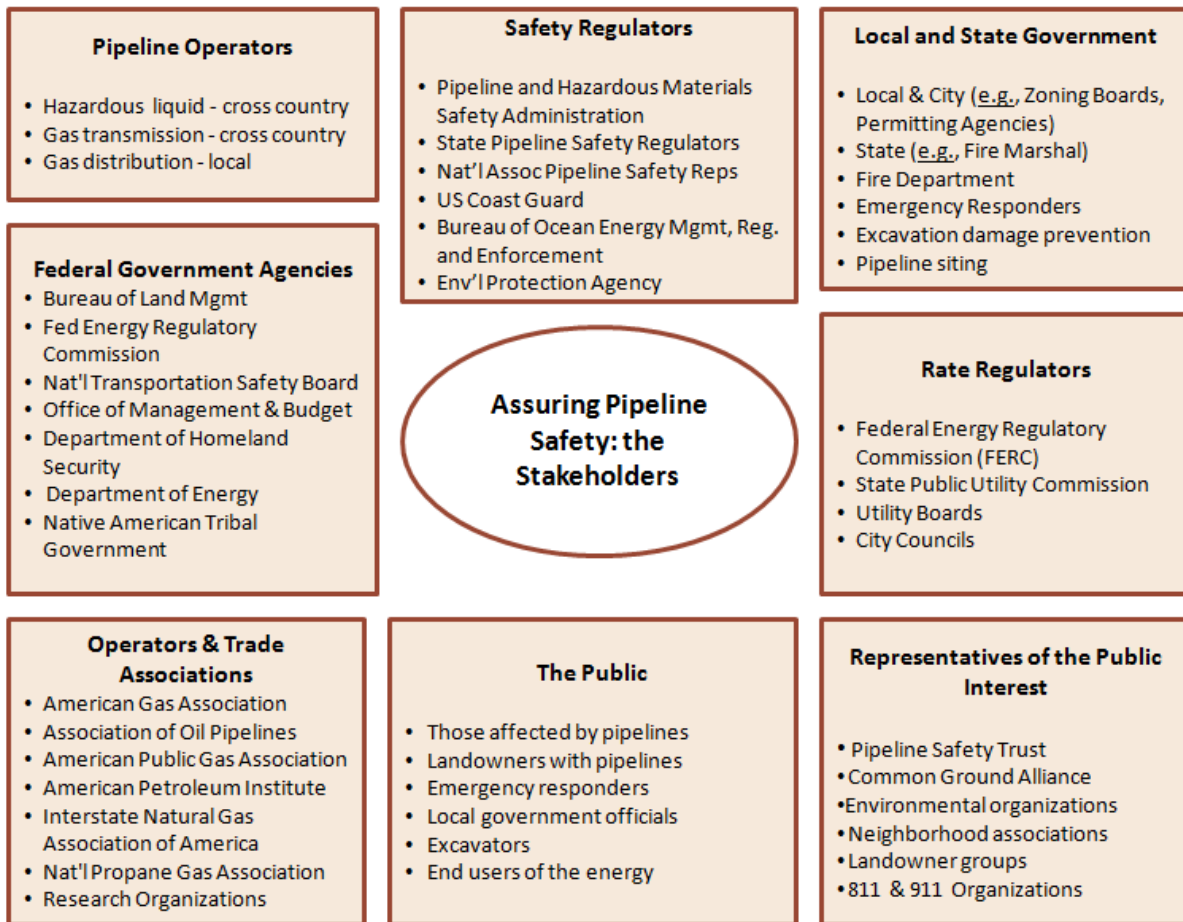


Figure 3 shows how gathering lines transport crude oil from wells to processing facilities. Liquid gathering lines supply crude oil to pump stations that feed pipeline systems that often stretch over multiple States. The Nation's oil pipelines transport crude oil from oilfields to refineries where the oil is converted into products such as gasoline, home heating oil, jet fuel, diesel, lubricants, and the raw materials for fertilizer, chemicals, and pharmaceuticals. Pipelines then transport refined products to bulk storage terminals from which tank trucks deliver the products relatively short distances to gasoline stations, heating oil suppliers, and other end users.

**Figure 4 Key Stakeholders in Assuring Pipeline Safety**



Stakeholders play critical roles in ensuring the safety of hazardous liquid and natural gas pipelines. Figure 4 displays key stakeholder groups.

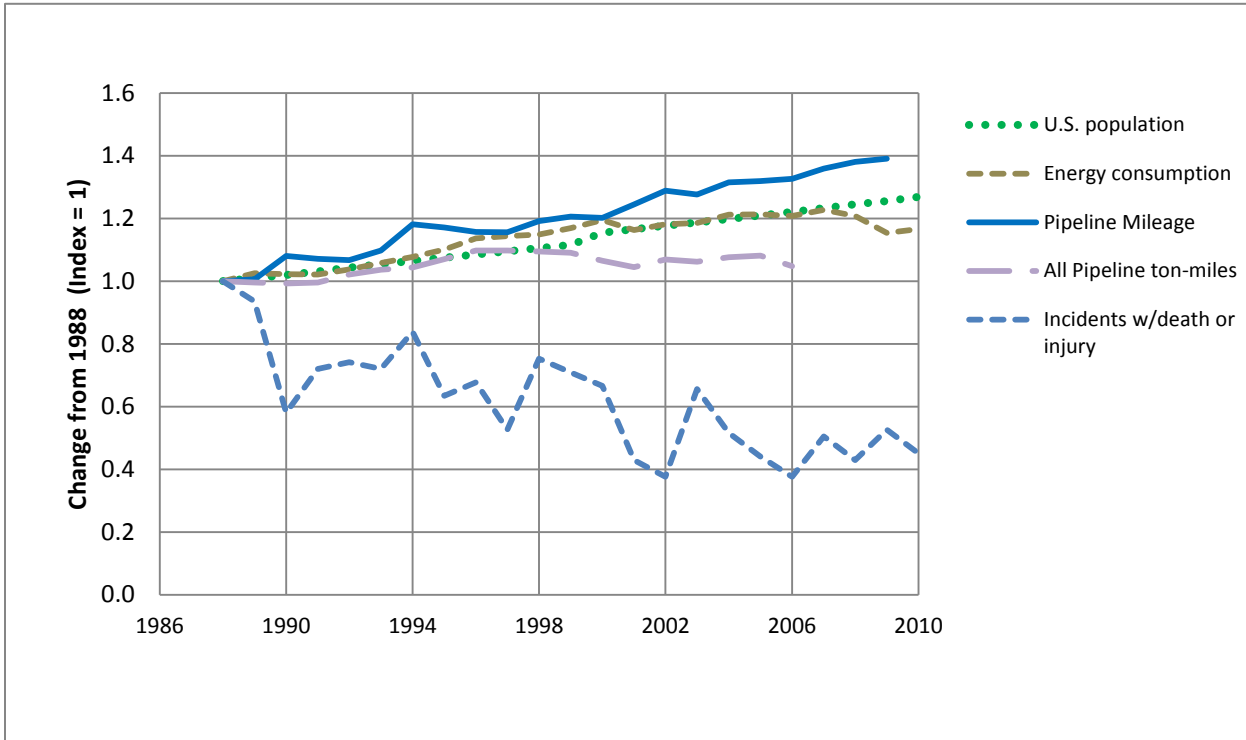


**Figure 5 Examples of Key Stakeholder Roles**



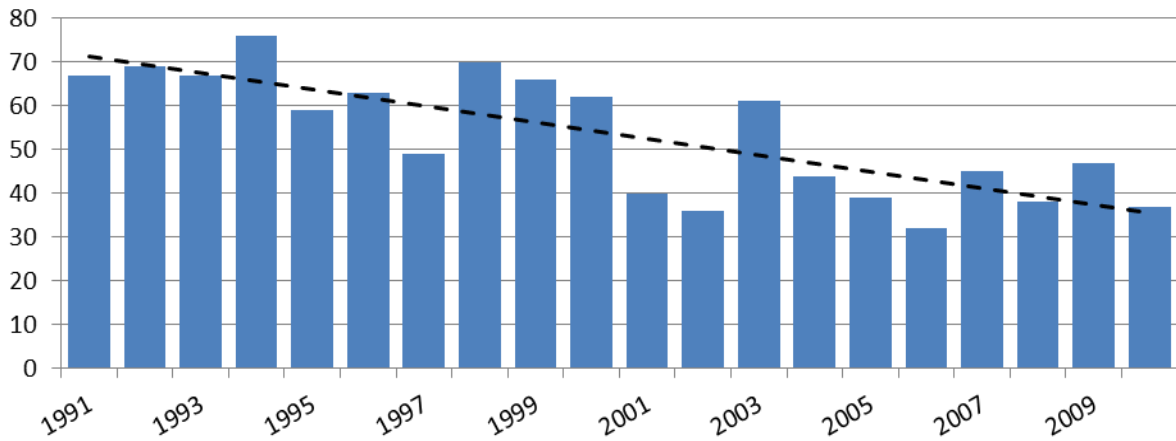
**Each stakeholder group plays an important role in ensuring pipeline safety.**

**Figure 6 Pipeline Safety Context Measures (1988-2010)**



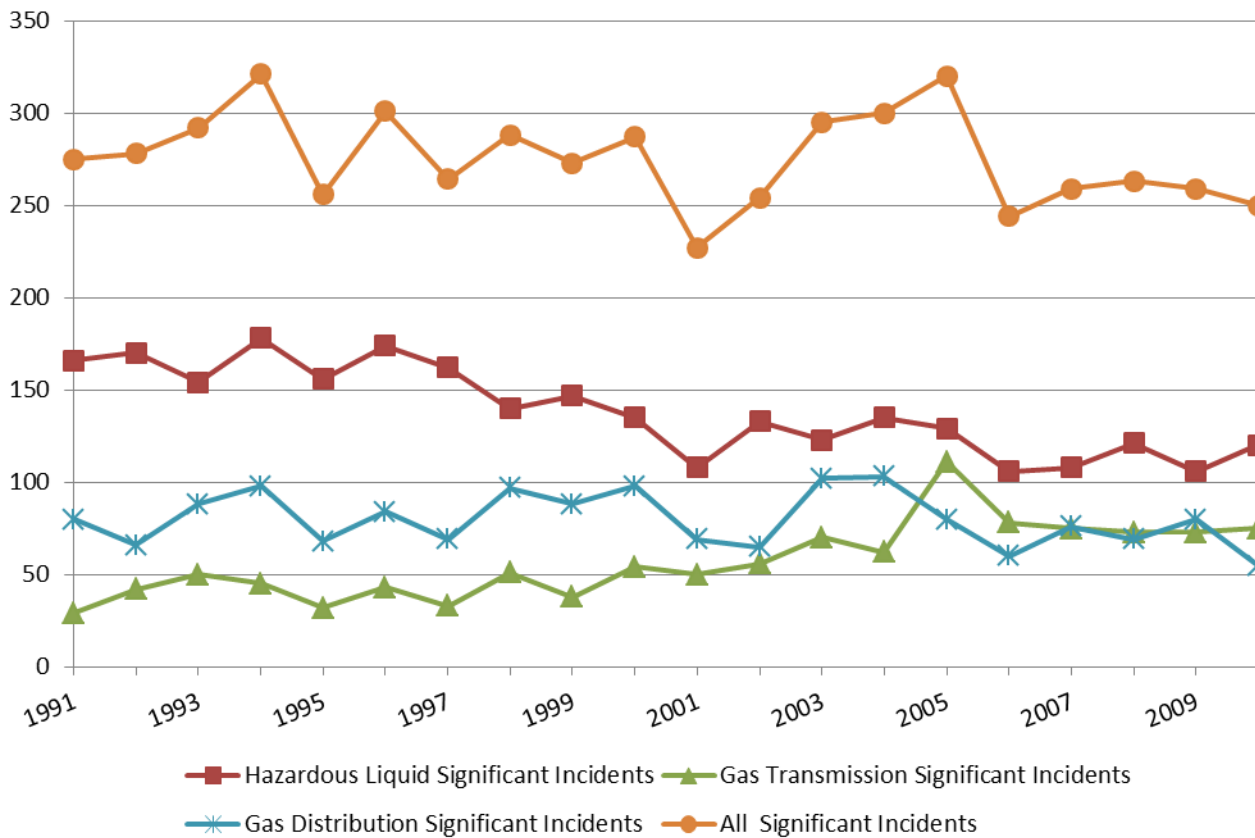
NOTE: DATA SOURCES: CENSUS BUREAU, ENERGY INFORMATION ADMINISTRATION, PHMSA ANNUAL REPORT DATA, BTS TON-MILE ESTIMATES, PHMSA INCIDENT DATA - AS OF MAY 2, 2011

**Figure 7 Serious Pipeline Incidents (causing death or major injury)**





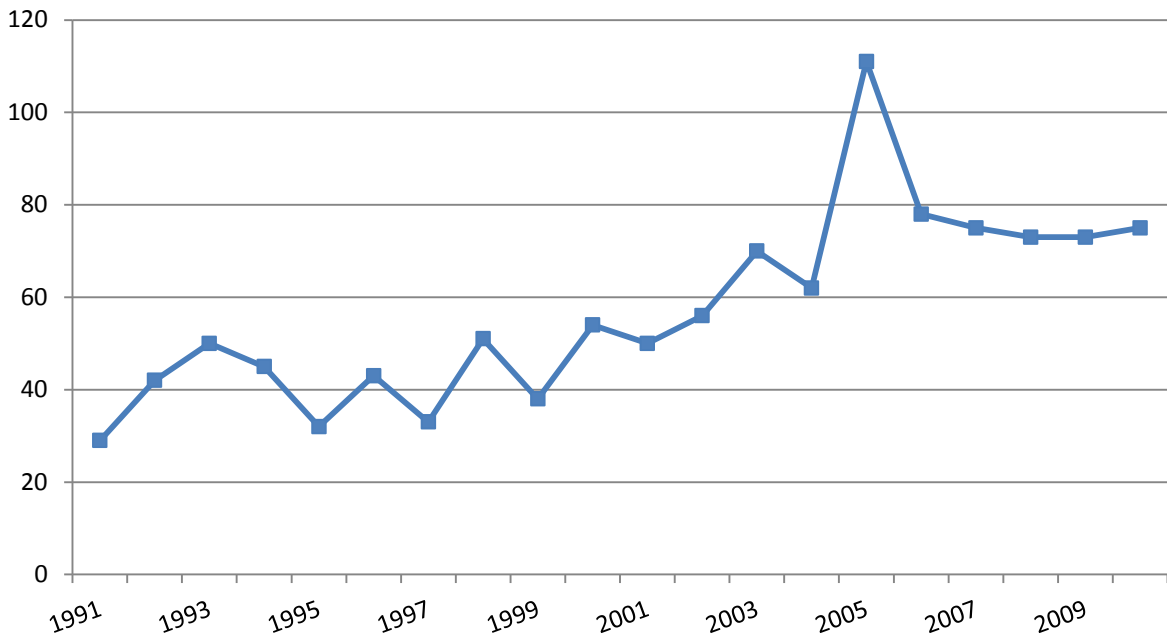
**Figure 8 Trends in the Number of Significant Pipeline Systems Incidents 1991 to 2010**



NOTES FOR FIGURE 8

- a) Significant Hazardous Liquid and Gas Transmission offshore incidents are combined with their onshore counterparts in this figure.
- b) Gas Distribution incidents where fire/explosion was the primary cause of failure, such as a house fire that subsequently resulted in - but was not caused by - a distribution line failure, are excluded from 2004 onward. This exclusion was not applied in years prior to 2004 due to difficulty in identifying these types of events with the older report formats. This data treatment does not significantly affect the overall trend in the number of gas distribution incidents over this period.

**Figure 9 Significant Incidents for Gas Transmission Pipelines**



**For emphasis, Figure 9 repeats the trend in significant incidents for gas transmission pipelines shown earlier in Figure 8. This trend is disturbingly upward over the past 20 years.**

**Figure 10 Pipeline System Significant and Serious Incidents per year – 2005-2010**

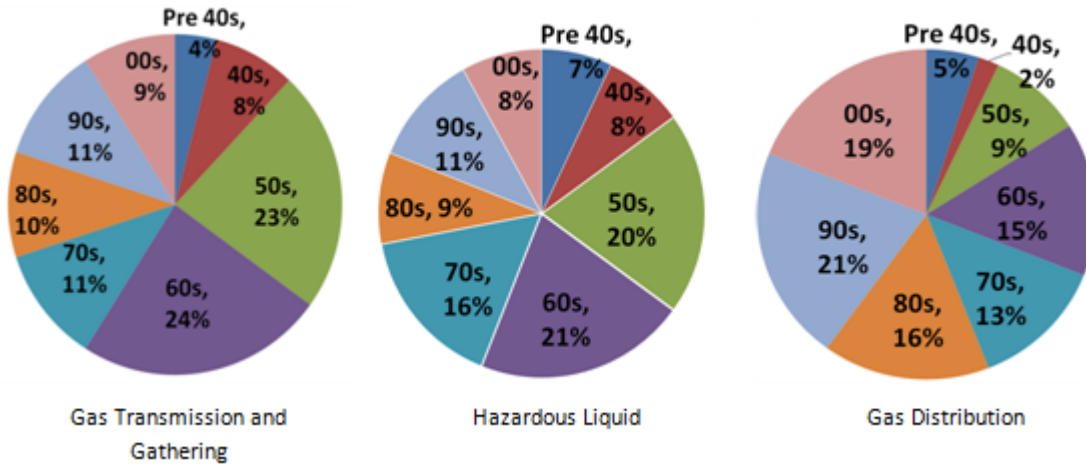
Pipeline Type	Average Miles (2005-2010)	Average Number of Significant Incidents per year (2005-2010)	Average Number of Significant Incidents per 1,000 Miles per Year	Average Number of Serious Incidents per year (2005-2010)	Average Number of Serious Incidents per 1,000 Miles per Year
Hazardous Liquid	170,000	115	0.67	3.2	0.019
Gas Transmission	302,000	81	0.27	6.0	0.020
Gas Distribution	2,009,000	70	0.036	30.2	0.035

Notes for Figure 10:

- a) Gas Distribution mileage includes mains and estimate of service line mileage
- b) There are different reporting criteria for significant incidents for gas pipeline incidents and hazardous liquid pipeline accidents
- c) Mileage data for 2010 were assumed to be the same as for 2009.

**Figure 10 presents both significant and serious incidents per thousand miles of pipe. When the mileage effects are taken out, the serious incident per thousand miles appear more similar for the liquid and gas transmissions segments. Distribution pipelines show somewhat greater risk for serious incidents per 1,000 miles of pipe due to the close proximity of these systems to people. Serious incidents involve fatalities and/ or serious injury; significant incidents involve a set of additional conditions but not necessarily death or serious injury. Read specifics [here](#).**

Figure 11 Pipeline Age Profile for Transmission and Distribution Pipelines



Improving pipeline safety requires that the pipeline industry focus energy and resources on understanding and managing a set of known risks. One of the issues receiving significant attention is the effect of aging on the integrity of a pipeline. To minimize pipeline safety risk, pipeline operators and regulators must understand and address factors that contribute to and exacerbate incidents. Many recognized key safety issues are already being addressed through established programs; however, continual programmatic improvements and accelerated pipe replacement may be required to improve pipeline safety meaningfully.

## Figure 12 Challenges and Ongoing Initiatives

### Figure 12 Challenges and Ongoing Initiatives

#### Controlling threats by managing pipeline integrity

##### What are the challenges & ongoing initiatives in managing pipeline integrity?

- ✓ Understanding an aging infrastructure
- ✓ Managing pipeline integrity
- ✓ Improving human reliability
- ✓ Eliminating excavation damage
- ✓ Managing grandfathered assets

#### Managing safety through compliance with regulations

- ✓ Recognizing and dealing with technological regulations
- ✓ Recognizing and managing the challenges of new construction
- ✓ Improving public awareness
- ✓ Minimizing incident consequences

#### Managing safety beyond compliance with the regulation

- ✓ Focus on overall performance improvement
- ✓ Learning from experience and identifying areas for improvement
- ✓ Developing and sharing best practices
- ✓ Improving and maintaining a positive safety culture

#### Managing the business while ensuring safety

- ✓ Focusing on adequacy of resources
- ✓ Applying limited resources effectively
- ✓ Retaining expertise while losing experienced people – aging industry and regulatory workforce
- ✓ Increasing pipeline safety research and development

#### Managing the regulatory process

- ✓ Choosing the best regulatory approach and regulations
- ✓ Maintaining adequate number of qualified inspectors
- ✓ Ensuring adequacy of enforcement
- ✓ Continual improvements
- ✓ Furthering Research & Development

## Acronyms & Glossary

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Pipeline Safety Update uses some pipeline industry-specific terms and acronyms. Find meanings for words used in the Update [here](#).

### Acronyms

<b>AGA</b>	American Gas Association
<b>ANPRM</b>	Advanced Notice for Proposed Rulemaking
<b>ANSI</b>	American National Standards Institute
<b>AOPL</b>	Association of Oil Pipe Lines
<b>APGA</b>	American Public Gas Association
<b>API</b>	American Petroleum Institute
<b>ASCE</b>	American Society of Civil Engineers
<b>ASME</b>	American Society of Mechanical Engineers
<b>ASTM</b>	American Society for Testing and Materials
<b>BLM</b>	Bureau of Land Management in the U.S. Department of the Interior
<b>BOERME</b>	Bureau of Ocean Energy Management, Regulation, and Enforcement in the Department of the Interior
<b>CATS</b>	Community Assistance & Technical Services Teams within the Office of Pipeline Safety
<b>CGA</b>	Common Ground Alliance
<b>CRM</b>	Control Room Management
<b>CSB</b>	Chemical Safety Board
<b>DHS</b>	Department of Homeland Security

<b>DIMP</b>	Distribution Integrity Management Program
<b>DOE</b>	Department of Energy
<b>DOI</b>	Department of the Interior
<b>DOT</b>	Department of Transportation
<b>EIS</b>	Environmental Impact Study
<b>EPA</b>	Environmental Protection Agency
<b>ERP</b>	Emergency Response Plan
<b>ESI</b>	Environment and Safety Initiative
<b>FERC</b>	Federal Energy Regulatory Commission
<b>GIS</b>	Geographic Information System
<b>HCA</b>	High Consequence Area
<b>IAFC</b>	International Association of Fire Chiefs
<b>IAFF</b>	International Association of Fire Fighters
<b>IMP</b>	Integrity Management Program
<b>INGAA</b>	Interstate Natural Gas Association of America
<b>LDC</b>	Local Distribution Company
<b>LNG</b>	Liquefied Natural Gas
<b>LPG</b>	Liquefied Petroleum Gas
<b>MAOP</b>	Maximum Allowable Operating Pressure
<b>MOP</b>	Maximum Operating Pressure

<b>NACE</b>	National Association of Corrosion Engineers
<b>NAPSR</b>	National Association of Pipeline Safety Representatives
<b>NARUC</b>	National Association of Regulatory Utility Commissioners
<b>NASFM</b>	National Association of State Fire Marshals
<b>NEB</b>	National Energy Board of Canada
<b>NEPA</b>	National Environmental Policy Act
<b>NFPA</b>	National Fire Protection Association
<b>NPGA</b>	National Propane Gas Association
<b>NPMS</b>	National Pipeline Mapping System
<b>NPRM</b>	Notice of Proposed Rulemaking
<b>NRDC</b>	Natural Resources Defense Council
<b>NTDPC</b>	North American Telecommunications Damage Prevention Council
<b>NTSB</b>	National Transportation Safety Board
<b>NVFC</b>	National Volunteer Fire Council
<b>OIRA</b>	Office of Information and Regulatory Affairs in the Office of Management and Budget
<b>OMB</b>	Office of Management and Budget
<b>OPS</b>	Office of Pipeline Safety
<b>OQ</b>	Operator Qualification (a regulation)
<b>PET</b>	Performance Excellence Team of AOPL
<b>PHMSA</b>	Pipeline and Hazardous Materials Safety Administration



<b>PIPA</b>	Pipelines and Informed Planning Alliance
<b>PIPES</b>	Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006
<b>PIX</b>	Pipeline Information exchange
<b>PPDC</b>	Plastic Pipe Database Committee
<b>PRCI</b>	Pipeline Research Council International
<b>PSC</b>	Public Service Commission
<b>PST</b>	Pipeline Safety Trust
<b>PUC</b>	Public Utility Commission
<b>QMS</b>	Quality Management Systems
<b>R&amp;D</b>	Research and Development
<b>RD&amp;D</b>	Research Development and Demonstration
<b>SCADA</b>	Supervisory Control and Data Acquisition
<b>SGA</b>	Southern Gas Association
<b>USCG</b>	U.S. Coast Guard

## **Glossary**

### **811**

All States have laws that require residents to call before doing any digging. “811” is the national, three-digit, toll-free number to call before beginning any excavation or digging project. Every digging job requires a call— even small projects like planting trees and shrubs. When you call 811, a locator will come out and mark underground lines to avoid excavation damage.

### **Accident**

When talking about pipeline safety, an accident is defined as a failure that occurs in a liquid pipeline. When an accident occurs, the pipeline operator must make a report to the Office of Pipeline Safety. For natural gas pipelines, a failure is called an incident. (See Incident)

### **Advanced Notice for Proposed Rulemaking (ANPRM)**

A generalized Statement of what an agency proposes in making a change to a regulation. See Notice of Proposed Rulemaking (NPRM).

### **Advisory bulletin**

A notice issued by the Pipeline and Hazardous Materials Safety Administration (PHMSA) to educate owners and operators of pipeline facilities about certain requirements or issues affecting pipeline safety.

### **Barrel**

Standard measure of a volume of oil. A barrel is equal to 42 U.S. gallons.

### **Biofuels**

Types of fuel which are derived from biomass (plants, recently living organisms or from metabolic byproducts, e.g., cow manure.) The types of fuel extracted from biomass include ethanol, methanol, and biodiesel.

### **Call Before You Dig**

Call before you dig, or CBYD, is the phrase coined to remind excavators to call the one-call center to have underground utilities located and marked before beginning to dig. Anyone planning to dig can dial 811 to request that underground facilities be located prior to digging. Most States have damage prevention laws that mandate that excavators call before digging.

### **Carbon Dioxide (CO<sub>2</sub>)**

A naturally occurring gas that is transported by pipeline as a compressed fluid consisting of more than 90 percent carbon dioxide molecules. If released into the atmosphere from a pipeline leak, carbon dioxide can displace breathing air and, as such, is considered a hazardous material.

### **Carbon Sequestration**

The long-term storage of carbon dioxide or other forms of carbon to either mitigate or defer global warming. It has been proposed as a way to slow the atmospheric and marine accumulation of greenhouse gases, which are released by burning fossil fuels.

### **Cast Iron**

A ferrous material that is cast (heated to melting and poured into molds). Many older, low-pressure gas systems were constructed with cast iron pipe. Cast iron is brittle and susceptible to stress cracking so is not suitable for high-pressure applications. Generally large diameter cast iron pipes have performed well while small diameter pipes are more susceptible to fracture.

### **CATS - Community Assistance and Technical Services**

A PHMSA program initiative designed to improve public safety, environmental protection, and pipeline reliability by facilitating clear communications among all pipeline stakeholders, including the public, the operators, and government officials. An important aim of the CATS program is to reach out to all pipeline safety stakeholders. CATS managers are located within each PHMSA region.

### **Coating (also Protective Coating)**

A coating that is applied to prevent external corrosion of a pipeline. A coating substance or material is applied to the exterior of the pipe to prevent direct contact of the pipe wall with the surrounding environment. Various types of protective coatings may be used, including coal tar, tape wraps, and fusion bonded epoxy compounds.

### **Code of Federal Regulations (CFR)**

Federal regulations are officially codified in the Code of Federal Regulations (CFR). The CFR is divided into 50 titles that represent broad topical areas. Title 49 covers Transportation. Each title is divided into volumes, sections, parts, or chapters that may be further subdivided and grouped. The current pipeline safety regulations are codified under Title 49, Chapter 1, Subchapter D, Parts 186 through 199.

### **Commercially Navigable Waterway**

A waterway where there is a substantial likelihood of commercial navigation. These waterways are identified in the National Waterways Network, a geographic database created by the National Waterways GIS Design Committee and available from the U. S. Department of Transportation, Bureau of Transportation Statistics.

## **Common Carrier**

A term used to describe the fact that most pipeline operators offer transportation services to the general public under license or authority provided by a regulatory body.

## **Common Ground Study**

A study conducted under facilitation by PHMSA in which over 160 stakeholders interested in protecting underground infrastructure, such as pipelines, worked to prepare a set of best practices to prevent damage to this infrastructure. The study was completed and presented to the Secretary of Transportation in June 1999. The Common Ground Study of One-call Systems and Damage Prevention Best Practices became the genesis of today's Common Ground Alliance.

## **Consequence**

In the context of a pipeline accident or incident, consequences are the effects of incidents and accidents, and are usually measured in health and safety effects, environmental impacts, loss of property and/or business costs.

## **Control Room Management**

On Dec. 3, 2009, PHMSA published its final regulations for control room management (CRM). These regulations were developed to address human factors and other aspects of control room management for pipelines where controllers use supervisory control and data acquisition (SCADA) systems. Under the final rule, affected pipeline operators must define the roles and responsibilities of controllers and provide controllers with the necessary information, training, and processes to fulfill these responsibilities. Operators must also implement methods to prevent controller fatigue. The final rule further requires operators to manage SCADA alarms, assure control room considerations are taken into account when changing pipeline equipment or configurations, and review reportable incidents or accidents to determine whether control room actions contributed to the event.

## **Corrosion**

The deterioration of a material, usually a metal, which results from an electro-chemical reaction with its environment. Steel pipelines are subject to corrosion damage. Common rust is an example of corrosion of iron.

## **Cost/Benefit Ratio**

The cost of performing an activity compared to the perceived value of the benefits of performing it. For example, the cost/benefit ratio of replacing a section of pipe could be determined by dividing the cost of the replacement by the value of the expected benefits.

## **Crude Oil**

The raw liquid petroleum that is extracted from oil wells. Crude oil must be refined to produce usable products such as gasoline.

## **Damage Prevention**

This term refers to the protection of underground facilities, especially pipelines, from damage resulting from excavation activities. Generally, each operator of a buried pipeline must carry out a written damage prevention program.

## **Damage Prevention Program Elements**

The nine elements of effective damage prevention programs were cited by Congress in the Pipeline Inspection, Protection, Enforcement, and Safety (PIPES) Act of 2006. They address (abbreviated): (1) effective communications between stakeholders; (2) comprehensive stakeholder support; (3) operator internal performance measurement; (4) effective employee training; (5) public education; (6) dispute resolution; (7) enforcement; (8) technology; and (9) damage prevention program review.

## **Data Integration**

As used in pipeline integrity management regulations, data integration is the process of bringing together all available risk and integrity-related pipeline data and information. Data integration is necessary and useful in evaluating the combined impact of diverse factors on pipeline risk.

## **Defect**

An imperfection that can cause an inadequacy or failure. In pipelines, a defect is an imperfection of sufficient magnitude that it should be analyzed using a recognized and approved engineering procedure to determine if it is severe enough to require removal or repair.

## **Direct Assessment**

A method of evaluating the integrity of a pipeline in which various indirect measurement tools are used to determine locations on the pipeline that may require direct examination to verify

pipeline integrity. These locations are then excavated and examined to assess the condition of the pipe and, if necessary, make necessary repairs and expand the number of locations to be examined.

### **Distribution Line**

A pipeline used to supply natural gas to the consumer. A distribution line is a component of a pipeline network and is located downstream of a natural gas transmission line.

### **Easement**

A privilege or right acquired by a person or company to make limited use of another person's or company's property. Oil and natural gas pipeline companies acquire easements from property owners for construction and operation of their pipelines. A series of consecutive, connected easements can establish a right-of-way for the pipeline.

### **Emergency Response Personnel**

Persons engaged in the immediate response to accidents and emergencies. This may include firefighters, law enforcement, medical personnel, civil defense, community emergency response teams (CERT) and emergency management personnel. Emergency response personnel are sometimes referred to as "emergency responders" and "first responders."

### **Encroachment**

The use of a pipeline right-of-way, often but not always in violation of the terms by which the right-of-way was established (e.g., easement agreements).

### **Environmental Impact Statement (EIS)**

Under United States environmental law, an Environmental Impact Statement is a document required by the National Environmental Policy Act (NEPA) for certain actions "significantly affecting the quality of the human environment." An EIS is a tool to support decision making. It describes the positive and negative environmental effects of a proposed action, and it usually also lists one or more alternative actions that may be chosen instead of the action described in the EIS.

### **Ethanol**

A renewable biofuel also known as ethyl alcohol and grain alcohol. It is a clear, colorless liquid and is made from corn grain, sugar cane or from cellulosic feedstock. Ethanol is a high-octane fuel that works well in internal combustion engines.

## **Excavation Damage**

Damage to pipelines and other underground utilities that can result from nearby excavation (digging) activities.

## **Excavation**

Any operation involving the movement of earth, rock or other material below existing grade. Examples include auguring, backfilling, blasting, boring, digging, ditching, dredging, drilling, driving-in, grading, plowing-in, pulling-in, ripping, scraping, trenching, tunneling, the removal of aboveground structures by either explosive or mechanical means, and other earthmoving operations.

## **Facility Response Plan (FRP)**

Under the Clean Water Act, facilities that store and use oil are required to have a plan for responding to a worst case oil discharge. As part of the Oil Pollution Prevention regulation, the FRP rule identifies who must prepare and submit an FRP, what must be included in an FRP, and the potential to cause "substantial harm" in the event of a discharge.

## **First Responder (see Emergency Response Personnel) Fitness for Service**

The determination that a piece of equipment (such as a pipeline, tank, valve, pump, or any individual component) is safe and fit for continued service until the end of some desired period of operation (for example, until the next inspection, or until the end of its useful life). Fitness for service is typically determined through an assessment involving engineering analysis the equipment.

## **Gas**

In pipeline safety regulations, gas is considered to be natural gas, flammable gas, or gas which is toxic or corrosive.

## **Gasoline**

A toxic translucent, yellow-tinted liquid mixture derived from the fractional distillation of petroleum oil and is primarily used as a fuel in internal combustion engines.

## **Gathering Line**

For gas pipelines, a gathering line is a pipeline that transports gas from a production facility to a transmission line or a distribution main. For hazardous liquid pipelines, a gathering line is a pipeline that is no more than 8 5/8 inches in diameter and transports petroleum from a production facility.

### **Geographic Information System (GIS)**

A combination of computer hardware, software, and data that is used to capture, maintain, analyze, and display information related to the geographic location of features and facilities. Geographic information systems are often used by pipeline operators to display information related to the location of their pipelines and the geographic features of the land surrounding their lines.

### **Graphitization**

A form of corrosion that can deteriorate the wall of cast iron pipe.

### **Hazard**

A condition or substance that has the potential to produce harmful effects.

### **Hazardous Liquid**

A liquid that is dangerous to human health or safety or the environment if used incorrectly or if not properly stored or contained. Pipeline safety regulations identify petroleum, petroleum products, or anhydrous ammonia as hazardous liquids.

### **High Consequence Area (HCA)**

A location that is specifically defined in pipeline safety regulations as an area where pipeline releases could have greater consequences to health and safety or the environment. Regulations require a pipeline operator to take additional steps to ensure the integrity of a pipeline for which a release could affect an HCA.

### **High Population Area**

An urbanized area, as defined and delineated by the U.S. Census Bureau, which contains 50,000 or more people and has a population density of at least 1,000 people per square mile. High population areas are considered high consequence areas.

### **High Risk Pipeline Infrastructure**



A pipeline system that may pose high risks and may no longer be fit for service because of inferior materials, poor construction practices, lack of maintenance, or inadequate risk assessments performed by operators. The lack of basic information or incomplete records about these systems is also a contributing factor.

### **Hydrostatic Test (Hydrostatic Pressure Testing)**

Hydrostatic pressure testing (or hydro testing) is a method of testing pipeline integrity in which the line is filled with a liquid, usually water, and then the pressure inside the line is raised to a specified pressure that is maintained for a specified period of time. Any ruptures or leaks revealed during the test must be repaired and the test repeated until no problems are noted.

### **Incident (also see Accident)**

As used in pipeline safety regulations, an incident is an event occurring on a natural gas pipeline for which the operator must make a report to the Office of Pipeline Safety. Events of similar magnitude affecting hazardous liquid pipelines are considered accidents. In this report, incident is used to characterize both hazardous liquid pipeline accidents and gas pipeline incidents.

### **Inline Inspection (ILI)**

A method of inspecting a pipeline internally to identify defects, using an instrumented tool or “smart pig”. Different ILI techniques and tools are designed to detect defects in the pipe wall and on the internal and external surfaces of the pipe. Defects can include areas of corrosion, dents, metal loss, and the presence of cracks.

### **Inline Inspection (ILI) Tool (see also Pig)**

A device used to perform an inline inspection of a pipeline.

### **Integrity**

A term used to describe the condition of a pipeline. Pipeline integrity assures that the pipeline can safely carry out its function under the conditions for which it was designed.

### **Integrity Assessment**

An integrity assessment constitutes all of the actions that must be performed to determine the integrity of the pipe. Acceptable assessment methods for pipelines include the use of internal

inspection tools, hydrostatic pressure testing, or other technology that the operator demonstrates can provide an equivalent understanding of the pipe condition.

### **Integrity Management Program (IMP)**

A documented set of policies, processes, and procedures that an operator implements to ensure the integrity of a pipeline. Federal pipeline safety regulations specify what an operator's integrity management program must include.

### **Interstate Pipeline**

A pipeline used in transportation of hazardous liquids or natural gas across State or national boundaries.

### **Intrastate Pipeline**

A pipeline that is entirely contained within the borders of a single State.

### **Leak**

A small opening, crack, or hole in a pipeline that allows release of the product being transported.

### **Leak detection**

Various methods, techniques, technology, practices, and regulations designed to identify and locate a leak.

### **Leak Survey**

A systematic inspection for the purpose of finding leaks on a pipeline. The frequency and methods of performing leak surveys are regulated and may vary depending on several factors.

### **Liquefied Natural Gas (LNG)**

Natural or synthetic gas which has been changed to a liquid and maintained as a liquid by cooling it to approximately  $-162\text{ }^{\circ}\text{C}$  ( $-260\text{ }^{\circ}\text{F}$ ).

### **Liquefied Natural Gas (LNG) Facility**

A facility that is used for liquefying natural gas or synthetic gas or transferring, storing, or vaporizing liquefied natural gas.

### **Liquefied Petroleum Gas (LPG)**

A gas containing certain specific hydrocarbons that are gaseous under normal atmospheric conditions but that can be liquefied under moderate pressure at normal temperatures. Propane and butane are principal examples.

### **Local Distribution Company (LDC)**

A regulated utility involved in the purchase, resale, and delivery of natural gas to consumers within a specific geographic area.

### **Main**

A natural gas distribution line that serves as a common source of supply for more than one service line.

### **Master Meter Operator**

A person or company that operates a natural gas pipeline system for distributing natural gas for resale within a distinct area, such as a mobile home community, housing project, or apartment complex. The master meter operator purchases natural gas from an outside source and then resells the gas through a gas distribution pipeline system to the ultimate consumers.

### **Maximum Allowable Operating Pressure (MAOP)**

Maximum internal pressure at which a natural gas pipeline or pipeline segment may be operated.

### **Maximum Operating Pressure (MOP)**

Maximum internal pressure at which a hazardous liquid pipeline may be operated.

### **Memorandum of Understanding (MOU)**

A document describing an agreement between parties, often used in situations in which the involved parties do not wish to create a legally enforceable agreement. Many companies and government agencies use MOUs to define a relationship between departments, agencies, or closely held companies.

### **National Consensus Standards**

A set of requirements affecting the design, construction, operation, maintenance or decommissioning of a facility. Such standards are developed under a clear set of requirements for inclusivity and transparency to increase the assurance that they represent the best practical solution to the problem being treated. National consensus standards are often incorporated by reference in regulations.

### **National Pipeline Mapping System (NPMS)**

A geographic information system (GIS) created by the PHMSA in cooperation with other Federal and State government agencies and the pipeline industry. The NPMS consists of data pertaining to the interstate and intrastate hazardous liquid trunk lines and hazardous liquid low-stress lines as well as gas transmission pipelines, liquefied natural gas (LNG) plants, and hazardous liquid breakout tanks jurisdictional to PHMSA.

### **Natural Gas**

A gas consisting primarily of methane. It is an important fuel source and a major feedstock for fertilizers. Before natural gas can be used as a fuel, it must undergo processing to remove almost all materials other than methane. Natural gas is often informally referred to as simply gas, especially when compared to other energy sources such as oil or coal.

### **Natural Gas Liquid (NGL)**

Natural gas liquids are associated hydrocarbons found in raw natural gas, including ethane, propane, butane, iso-butane, and natural gasoline. Before natural gas can be transported it must be processed and purified. NGLs are valuable by-products of natural gas processing. They are extracted or isolated, processed and sold separately. NGLs have a variety of different uses, including enhancing oil recovery in oil wells, providing raw materials for oil refineries or petrochemical plants, and as sources of energy.

### **Natural Gas Transmission Pipeline**

A pipeline used to transport natural gas from a gathering, processing or storage facility to a processing or storage facility, large volume customer, or distribution system.

### **Notice of Proposed Rulemaking (NPRM)**

A formal notice by a Federal agency of its intent to adopt specific proposed requirements into regulations. The NPRM is published in the Federal Register and then invites comments from the public on the proposed requirements, and specifies how comments are to be submitted.

### **Oil Sands (also called Tar Sands)**

Bituminous sands, also known as oil sands or tar sands are a type of unconventional petroleum deposit. The sands contain naturally occurring mixtures of sand, clay, water, and a dense and extremely thick form of petroleum technically referred to as bitumen or "tar" due to its similar appearance, odor, and color. Oil sands are found in large amounts in many countries throughout the world, including Canada and Venezuela.

### **One-Call Center**

An entity that administers a one-call system through which a person can notify pipeline operators of proposed excavations. Excavators can call 811 from anywhere in the U.S. to contact the appropriate one-call center.

### **One-Call System**

A one-call system is a system that enables an excavator to communicate through a one-call center to pipeline operators to provide notification of intent to excavate. All 50 States within the U.S. are covered by one-call systems and most States have damage prevention laws that require excavators to call at least 48 hours before beginning an excavation. The one-call center will gather information about the intended excavation and issue notification tickets to affected pipeline operators. The operators can then clear the tickets or locate and mark the location of their pipelines before the excavation begins. Excavators can then take care when excavating to avoid damaging the pipelines.

### **Operating Pressure**

The pressure of gas or liquid in a pipeline under operating conditions.

### **Operating Stress**

Stress imposed on a pipe or structural member under operating conditions. This term normally refers to stress resulting from the internal forces due to the pressure of the gas or liquid in the pipeline; however, other forces such as thermal growth, expansion, or contraction may impose stress as well.

### **Operator**

An individual or corporation that engages in the transportation of gas or hazardous liquids.

### **Operator Qualification**

Requirements that assure an individual performing certain safety-related tasks has been evaluated and can perform assigned covered tasks and recognize and react to abnormal operating conditions.

### **Outer Continental Shelf**

The Outer Continental Shelf (OCS) is a peculiarity of the political geography of the United States and is the part of the internationally recognized continental shelf of the United States, which does not fall under the jurisdictions of the individual U.S. States.

### **Outside Force Damage**

Damage to a pipeline, resulting from some external force acting on the pipeline. Outside force damage can include the effects of earth movement, lightning, heavy rains and flood, temperature, high winds, excavation by the operator, excavation by a third party, fire or explosion external to the pipeline, being struck by vehicles not related to excavation, rupture of previously damaged pipe, and vandalism.

### **Performance Data/Performance Measures**

Parameters or information that can be collected and evaluated to determine if a set of actions is accomplishing its intended purpose. Federal pipeline safety regulations require that pipeline operators establish performance measures as part of their integrity management programs.

### **Petroleum**

Petroleum is an oily, flammable bituminous liquid that may vary from almost colorless to black and occurs in many places in the upper strata of the earth. It is a complex mixture of hydrocarbons with small amounts of other substances, and is prepared for use as gasoline, naphtha, or other products by various refining processes. Petroleum includes crude oil, condensate, natural gasoline, natural gas liquids, and liquefied petroleum gas.

### **Pig**

A generic term signifying a self-contained device, tool, or vehicle that is inserted into and moves through the interior of a pipeline for inspecting, dimensioning, or cleaning. These tools are commonly referred to as 'pigs' because of the occasional squealing noises that can be heard as they travel through the pipe. To pig means to inspect or clean a pipeline using an internal inline inspection device or cleaning tool.

### **Pipeline**

Used broadly, pipeline includes all parts of those physical facilities through which gas, hazardous liquid, or carbon dioxide is transported. A pipeline may include line pipe, valves, and other appurtenances attached to the pipe, pumping/compressor units and associated fabricated units, metering, regulating, and delivery stations, and holders and fabricated assemblies located therein, and breakout tanks.

### **Pipelines and Informed Planning Alliance (PIPA)**

A cooperative stakeholder coalition organized to combat a trend of increasing risks due to encroachment on transmission pipeline rights-of-way. PIPA's goal is to help communities understand transmission pipeline risks and make more informed decisions about land use planning and development in the vicinity of transmission pipelines.

### **Pre-1970 Electric Resistance Welded (ERW) Pipe**

Pipe that was manufactured prior to 1970 with a low-resistance electric-weld longitudinal-seam that can be susceptible to certain types of seam failures.

### **Prescriptive Regulations**

Prescriptive regulations provide specific rules an operator must follow.

### **Pressure**

Force exerted on a given area usually expressed in pounds per square inch (PSI). Oil and natural gas transported within a pipeline exert pressure on the pipe wall.

### **Preventive and Mitigative Measures**

Activities designed to prevent or reduce the likelihood of a pipeline failure (preventive) and/or mitigate the consequences of a pipeline failure (mitigative). Examples of preventive measures include enhanced damage prevention practices, conducting periodic close interval surveys, or inspecting pressure relief devices more frequently. Examples of mitigative measures include the installation of emergency flow restricting devices, improving leak detection system capability, or conducting drills with local emergency responders.

### **Probability**

A measure of the likelihood that an event will occur within some unit of time.

### **Propane**

A by-product of natural gas processing and petroleum refining that is commonly used as an energy fuel. Propane is normally a gas but is compressed to a liquid for pipeline transport and portability of use in a variety of applications.

### **Protective Coating (see Coating)**

#### **Pump Station**

A facility that includes pumps and equipment for pumping fluids from one place to another. A pump station for natural gas pipelines is normally referred to as a compressor station.

#### **Remote Actuation**

The ability to cause a piece of equipment, such as a pipeline shutoff valve, to perform its function from a location other than where the device is located.

#### **Repair**

The act of returning a damaged or defective item to its original condition. Pipeline repairs address defects or anomalies that can reduce the strength of a pipe or the integrity of the pipeline, and can include replacing pipeline components or sections of pipe.

#### **Right-of-Way (ROW)**

A defined strip of land on which an operator has the rights to construct, operate, and/or maintain a pipeline. A ROW is usually composed of a string of contiguous properties, some of which may be owned outright by the operator or, more often, may be acquired through easements for specific use of the ROW.

#### **Risk**

A measure of the likelihood that an adverse event could occur and the magnitude of the expected consequences should it occur.

#### **Risk Assessment**

The process of identifying, defining, and analyzing pipeline risks. A risk analysis can be either quantitative or qualitative.

#### **Risk Management**

The process by which an organization understands, makes decisions, and takes action to reduce the risk of a facility it operates.



## **Root Cause**

The basic, underlying causal factor in an accident or incident, which if removed would have prevented the accident or event from occurring.

## **Rupture**

The process or instance of breaking open or bursting, as in the rupture of a pipe. A pipe rupture is the propagation or growth of a defect to such an extent that the pipe becomes completely unserviceable.

## **Safety Culture**

A term used to describe the way in which safety is managed in the workplace. The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies and patterns of behavior that determine the commitment to, and the style and proficiency of, an organization's health and safety management.

## **Serious Pipeline Incident**

PHMSA defines a serious pipeline safety incident is an event involving a fatality or injury requiring in-patient hospitalization.

## **Service Line**

A natural gas distribution line that transports gas from a common source of supply (e.g., a main) to (1) a customer meter or the connection to a customer's piping, whichever is farther downstream, or (2) the connection to a customer's piping if there is no customer meter. (A customer meter is the meter that measures the transfer of natural gas from the distribution system operator to the consumer.)

## **Shale Gas**

Natural gas produced from shale. Shale gas has become an increasingly important source of natural gas in the United States over the past decade.

## **Shutoff Valve**

Shutoff valves are used to close a line and stop the flow of material. Some shutoff valves are manually operated while others are automated to act when a preset condition (such as a failure in the system) occurs.

## **Significant Pipeline Incident**

PHMSA defines Significant Incidents as those incidents reported by pipeline operators when any of the following specifically defined consequences occur: (1) fatality or injury requiring in-patient hospitalization; (2) \$50,000 or more in total costs, measured in 1984 dollars; (3) highly volatile liquid releases of 5 barrels or more or other liquid releases of 50 barrels or more; or (4) liquid releases resulting in an unintentional fire or explosion.

## **Specified Minimum Yield Strength (SMYS)**

The minimum yield strength, expressed in pounds per square inch (psi), prescribed by the specification under which pipe material is purchased from the manufacturer.

## **Stress**

Resultant internal forces within the wall of a pipe that resist the internal pressure exerted by the transported products.

## **Stress Corrosion Cracking (SCC)**

An anomaly that can occur in steel pipe. SCC is environmentally-assisted cracking that can result when the combined action of stress, an electrochemical cracking environment, and temperature causes cracks to initiate and grow in susceptible steel.

## **Supervisory Control and Data Acquisition System (SCADA)**

A pipeline control system, usually computerized, designed to gather information such as pipeline pressures and flow rates from remote locations and regularly transmit this information to a central control facility where the data can be monitored and analyzed. Through this same system, the central control facility can often issue commands to the remote sites for actions such as opening and closing valves and starting and stopping pumps.

## **Third-Party Damage Prevention**

Third-party damage prevention includes all efforts and programs designed to prevent outside force damage to underground facilities, especially pipelines, which can occur during excavation activities by someone other than the pipeline operator or its contractors.

## **Threat**

Something that is a source of potential danger or harm. For example, excavation damage presents a threat to pipelines. Pipeline accidents present a threat to communities.

### **Time-Dependent Threats**

Threats that change with time. For example, active corrosion represents a time-dependent threat to steel pipe.

### **Ton-Miles**

A measure of the quantity of petroleum transported (in tons) over the distance it is transported (in miles).

### **Trade Association**

An organization founded and funded by businesses that operate in a specific industry. An industry trade association participates in public relations activities, such as advertising, education, political donations, lobbying and publishing, but its main focus is collaboration between companies or standardization. Associations may offer other services, such as producing conferences, networking or charitable events or offering classes or educational materials. Many associations are non-profit organizations governed by bylaws and directed by officers who are also members.

### **Transmission Line**

A natural gas transmission pipeline is a pipeline, other than a gathering line, used to transport natural gas from a gathering, processing or storage facility to a processing or storage facility, large volume customer, or distribution system. A large volume customer may receive similar volumes of gas as a distribution center, and includes factories, power plants, and institutional users of gas. Often used to describe hazardous liquid pipelines, a transmission line is a pipeline used to transport crude oil from a gathering line to a refinery, and refined products from a refinery to a distribution center.

### **Underground Utilities**

Pipelines and other utilities, such as electrical and telephone lines, that are buried underground.

### **Yield Strength**

The stress level at which a material begins to deform permanently.

## Additional Resources

### Footnoted References

1. [PHMSA Annual Reports Mileage Data](#) PHMSA provides natural gas transmission, gas distribution, and hazardous liquid pipeline annual [mileage data](#) as determined from annual reports submitted by pipeline operators.
2. [AOPL Report on Shifts in Petroleum Transportation. January 4, 1011](#) Pipelines continue to increase their share of total crude oil and petroleum products transported. The Association of Oil Pipe Lines (AOPL) released its annual report on January 4, 2011, showing shifts in petroleum transportation from 1990 through 2008. Volumes increased 5.3 percent from 2007 to 2008.
3. [Annual Energy Review, U.S. Energy Information Administration](#) The U. S. Energy Information Administration (EIA) produces a report of historical annual energy statistics. Included are data on total energy production, consumption, and trade; overviews of petroleum, natural gas, coal, electricity, nuclear energy, renewable energy, international energy, as well as financial and environmental indicators; and data unit conversion tables.
4. Annual Energy Review, U.S. Energy Information Administration
5. [PHMSA Stakeholder Communication Website](#)  
PHMSA's Stakeholder Communications website provides public access to a wealth of information regarding pipeline transportation. From pipeline incident and mileage statistics to damage prevention information, users will find useful information that to help understand pipeline safety in their communities. See the data on [Serious Pipeline Incidents](#) on the website.
6. [Analysis of U.S. Oil Spillage. API Publication 356, August 2009](#)  
Total petroleum industry spillage has decreased consistently over the last 40 years. Seventy-seven percent less oil is being spilled since the 1970s and 46 percent less since the 1960s. The analyses in this report examine oil spillage into U.S. waters.
7. AOPL Report on Shifts in Petroleum Transportation. January 4, 1011
8. [API 579-1/ASME FFS-1, June 5, 2007 \(API 579 Second Edition\)](#)  
API Recommended Practice 579 provides a general procedure for assessing fitness for service (FFS) for pipes and other process equipment such as pressure vessels and tanks. This standardized assessment procedure provides "technically sound consensus approaches that ensures the safety of plant personnel and the public while aging equipment continues to operate, and can be used to optimize maintenance and operation practices, maintain availability and enhance the long-term economic performance of plant equipment." API 579 can be purchased from API. The methodology requires a detailed understanding of the physical condition of the asset being evaluated.

9. [Pipeline Inspection, Protection, Enforcement, and Safety \(PIPES\) Act of 2006; Public Law 109-468. Dec. 29, 2006](#)

The 109th Congress passed the PIPES Act of 2006 to amend title 49, United States Code, to provide for enhanced safety and environmental protection in pipeline transportation, to provide for enhanced reliability in the transportation of the Nation's energy products by pipeline, and for other purposes.

## **Referenced and Identified Organizations**

### [American Gas Association \(AGA\)](#)

The American Gas Association, founded in 1918, represents 199 local energy companies that deliver clean natural gas throughout the United States. There are more than 70 million residential, commercial, and industrial natural gas customers in the U.S., of which 91 percent — more than 65 million customers — receive their gas from AGA member utilities.

### [Association of Oil Pipe Lines \(AOPL\)](#)

Established in 1947, AOPL is a nonprofit organization whose membership is comprised of owners and operators of liquid pipelines. AOPL members carry nearly 85 percent of the crude oil and refined petroleum products moved by pipelines in the United States. As a trade association, AOPL: represents common carrier crude and petroleum product pipelines, as well as carbon dioxide pipelines, before Congress, regulatory agencies, and the courts; provides coordination and leadership on key industry issues, including pipeline rates and services, pipeline safety initiatives, pipeline security, and the industry's Environmental and Safety Initiative; and, acts as an information clearinghouse for the public, media, and pipeline industry regarding liquid pipeline issues.

### [American Public Gas Association \(APGA\)](#)

APGA is the not-for-profit nationwide association for publicly- and community-owned gas utilities. It represents over 700 members in 36 States. APGA advocates on issues that impact its members and the communities they serve. The Association also works to educate its members on best safety practices, legislative issues, effective business and operational strategies, and hosts conferences promoting the benefits of natural gas as a responsible and efficient energy source.

### [American Petroleum Institute \(API\)](#)

API is the only national trade association that represents all aspects of America's oil and natural gas industry. API's more than 400 corporate members come from all segments of the industry. From the largest major oil company to the smallest of independents, they are producers, refiners, suppliers, pipeline operators and marine transporters, as well as service and supply companies that support all segments of the industry.

### [American Society of Mechanical Engineers \(ASME\)](#)

ASME is a not-for-profit membership organization that enables collaboration, knowledge sharing, career enrichment, and skills development across all engineering disciplines. Founded in 1880 by a small group of leading industrialists, ASME has grown through the decades to include more than 120,000 members in over 150 countries worldwide.

### [Bureau of Land Management in the Department of the Interior \(BLM\)](#)

BLM is an organization within the U. S. Department of the Interior. BLM has a multiple-use mission, set forth in the Federal Land Policy and Management Act of 1976. Relative to pipelines, BLM manages Federal onshore oil, gas, and coal operations that make significant contributions to the domestic energy supply.

### [Bureau of Ocean Energy Management, Regulation and Enforcement \(BOEMRE\)](#)

The U. S. Department of the Interior's (DOI), Bureau of Ocean Energy Management, Regulation and Enforcement (BOEMRE), is the Federal agency responsible for overseeing the safe and environmentally responsible development of energy and mineral resources on the Outer Continental Shelf.

[Common Ground Alliance \(CGA\)](#) The CGA is a nonprofit organization dedicated to shared responsibility in damage prevention and promotion of the damage prevention Best Practices identified in the Common Ground Study Report. The purpose of the CGA is to ensure public safety, environmental protection, and the integrity of services by promoting effective damage prevention practices.

### [Community Assistance and Technical Services \(CATS\)](#)

CATS is a PHMSA program initiative designed to advance public safety, environmental protection and pipeline reliability by facilitating clear communications among all pipeline stakeholders, including the public, the operators and government officials. An important aim of the CATS program is to reach out to all pipeline safety stakeholders. CATS managers are located within each PHMSA region.

### [Department of the Interior's \(DOI\)](#)

The U.S. Department of the Interior protects America's natural resources and heritage, honors our cultures and tribal communities, and supplies the energy to power our future. DOI manages one-fifth of the Nation's landmass and 1.7 billion acres off its shores.

### [Department of Homeland Security \(DHS\)](#)

DHS is responsible for the protection of "critical infrastructure", which is defined by Federal law as "systems and assets, whether physical or virtual, so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters." Transportation pipelines are a part of our country's critical infrastructure.

### [Department of Energy \(DOE\)](#)

DOE's mission is to ensure America's security and prosperity by addressing its energy, environmental, and nuclear challenges through transformative science and technology solutions. As a part of that mission, DOE works to ensure the reliability of our energy supplies.

### [Department of Transportation \(USDOT\)](#)

The U.S. Department of Transportation's mission is to serve the United States by ensuring a fast, safe, efficient, accessible and convenient transportation system that meets our vital national interests and enhances the quality of life of the American people, today and into the future. DOT was established by an act of Congress on October 15, 1966.

### [Environmental Protection Agency \(EPA\)](#)

The mission of U. S. Environmental Protection Agency is to protect human health and the environment. EPA's purpose is to ensure that national efforts to reduce environmental risk are based on the best available scientific information and that Federal laws protecting human health and the environment are enforced fairly and effectively.

### [Federal Energy Regulatory Commission \(FERC\)](#)

FERC is an independent agency that regulates the interstate transmission of electricity, natural gas, and oil. FERC also reviews proposals to build liquefied natural gas (LNG) terminals and interstate natural gas pipelines. FERC's responsibilities include but are not limited to: regulating the transmission and sale of natural gas for resale in interstate commerce; regulating the transportation of oil by pipeline in interstate commerce; approving the siting and abandonment of interstate natural gas pipelines and storage facilities; and, ensuring the safe operation and reliability of proposed and operating LNG terminals.

### [International Association of Fire Chiefs \(IAFC\)](#)

The mission of the IAFC is to provide leadership to current and future career, volunteer, fire-rescue and EMS chiefs, chief fire officers, company officers, and managers of emergency service organizations throughout the international community through vision, information, education, services, and representation to enhance their professionalism and capabilities.

### [International Association of Fire Fighters \(IAFF\)](#)

The IAFF represents more than 298,000 full-time professional fire fighters and paramedics who protect 85 percent of the Nation's population. More than 3,200 affiliates and their members protect communities in every State in the United States and in Canada. In addition to city and county fire fighters and emergency medical personnel, the IAFF represents State employees, Federal workers, and fire and emergency medical workers employed at certain industrial facilities.

### [Interstate Natural Gas Association of America \(INGAA\)](#)

INGAA is the North American association representing interstate and interprovincial natural gas

pipeline companies, and speaks for the companies that own and operate those lines. INGAA's website includes information on INGAA activities as well as the natural gas pipeline industry.

#### [National Association of Pipeline Safety Representatives \(NAPSR\)](#)

NAPSR is a non-profit organization of State gas pipeline safety directors, managers, inspectors and technical personnel who serve to enhance pipeline safety. NAPSR was founded on December 2, 1982.

#### [National Association of Regulatory Utility Commissioners \(NARUC\)](#)

NARUC is a non-profit organization founded in 1889. Its members include the governmental agencies that are engaged in the regulation of utilities and carriers in the 50 States, the District of Columbia, Puerto Rico, and the Virgin Islands. NARUC's member agencies regulate the activities of telecommunications, energy, and water utilities. NARUC members are obligated to ensure the establishment and maintenance of such energy utility services as may be required by public convenience and necessity, and to ensure that such services are provided at rates and conditions that are just, reasonable and nondiscriminatory for all consumers.

#### [National Association of State Fire Marshals \(NASFM\)](#)

NASFM represents the most senior fire official of each of the 50 United States and District of Columbia. State fire marshals' responsibilities vary from State to State, but marshals tend to be responsible for fire safety code adoption and enforcement, fire and arson investigation, fire incident data reporting and analysis, public education and advising governors and State legislatures on fire protection. Some State Fire Marshals are responsible for fire fighter training, hazardous materials incident responses, wild land fires and the regulation of natural gas and other pipelines.

#### [National Energy Board of Canada \(NEB\)](#)

The National Energy Board (NEB) is an independent Federal agency established in 1959 by the Parliament of Canada to regulate international and interprovincial aspects of the oil, gas, and electric utility industries. The purpose of the NEB is to regulate pipelines, energy development, and trade in the Canadian public interest. These principles guide NEB staff to carry out and interpret the organization's regulatory responsibilities. The NEB is accountable to Parliament through the Minister of Natural Resources Canada.

#### [National Propane Gas Association \(NPGA\)](#)

NPGA is the national trade association representing the propane industry. Its membership includes small businesses and large corporations engaged in the retail marketing of propane gas and appliances, producers and wholesalers of propane equipment, manufacturers and distributors of propane gas appliances and equipment, fabricators of propane gas cylinders and tanks, and propane transporters.



### [Natural Resources Defense Council \(NRDC\)](#)

NRDC is an environmental action group with 1.3 million members. It is a not-for-profit, tax-exempt, membership organization. Its stated mission is “To safeguard the Earth: its people, its plants and animals and the natural systems on which all life depends.”

### [National Transportation Safety Board \(NTSB\)](#)

NTSB is an independent Federal agency charged by Congress with investigating significant accidents in all modes of transportation -- pipeline, aviation, railroad, highway, and marine. NTSB issues safety recommendations are aimed at preventing future accidents.

### [Office of Information and Regulatory Affairs \(OIRA\)](#)

The Office of Information and Regulatory Affairs (OIRA) is located within the U. S. Office of Management and Budget and was created by Congress with the enactment of the Paperwork Reduction Act of 1980 (PRA). OIRA carries out several important functions, including reviewing Federal regulations, reducing paperwork burdens, and overseeing policies relating to privacy, information quality, and statistical programs.

### [Office of Management and Budget \(OMB\)](#)

The OMB is within the Executive Branch of the U. S. Government. The management side of OMB oversees and coordinates the Federal procurement policy, performance and personnel management, information technology (e-Government) and financial management. In this capacity, OMB oversees agency management of programs and resources to achieve legislative goals and Administration policy.

### [Office of Pipeline Safety \(OPS\)](#)

OPS is the PHMSA office that is responsible for regulating the safety of design, construction, testing, operation, maintenance, and emergency response of U.S. oil and natural gas pipeline facilities.

### [Pipeline and Hazardous Materials Safety Administration \(PHMSA\)](#)

PHMSA is one of 10 agencies within the U.S. Department of Transportation. Through PHMSA, DOT develops and enforces regulations for the safe, reliable, and environmentally sound operation of the Nation's pipeline transportation system and the shipments of hazardous materials by all transportation modes, including the Nation's pipelines. PHMSA's Administrator is appointed by the President and is the agency's chief executive, providing direction to PHMSA employees within the agency's Washington, DC Headquarters and five regional offices.

### [Pipelines and Informed Planning Alliance \(PIPA\)](#)

PIPA is a cooperative stakeholder coalition led by PHMSA to combat a trend of increasing risks due to encroachment on transmission pipeline rights-of-way. PIPA's goal is to help communities understand transmission pipeline risks and make more informed decisions about land use planning and development in the vicinity of transmission pipelines. PIPA issued a

report in December 2010 that recommends practices for specific stakeholder groups to reduce the risks that result from the growth of communities and changes in land use near pipelines. The PIPA Report and recommended practices can be found online.

#### [Pipeline Performance Tracking System \(PPTS\), American Petroleum Institute](#)

The PPTS is a component of the oil pipeline industry's Environmental and Safety Initiative, a multi-discipline approach to understanding and improving industry performance. The availability of more detailed data is crucial to that objective. There are currently more than 50 operators participating, representing about three-quarters of the oil pipeline mileage in the U.S. Participants report on all operated facilities, whether under the regulatory oversight of the U.S. Department of Transportation's Office of Pipeline Safety or not.

#### [Plastic Pipe Database Committee \(PPDC\)](#)

The PPDC is a joint government/industry committee to develop a database of plastic pipe and fitting failures that occurred in the gas industry. The PPDC experts review data on plastic pipe failures submitted by participating distribution systems to look for trends that may indicate whether any type of plastic or fitting is failing prematurely. The PPDC's efforts have resulted in several advisory bulletins from PHMSA notifying utilities to be alert for problems with certain plastic piping components

#### [Pipeline Research Council International \(PRCI\)](#)

PRCI is a community of the pipeline companies, and the vendors, service providers, equipment manufacturers, and other organizations supporting the pipeline industry. Formed in 1952, PRCI is dedicated to assuring the maximum efficiency of research development and deployment through a highly-leveraged funding model of member and external funding, information sharing, cooperative project development, and the broad dissemination and application of its research results.

#### [Pipeline Safety Trust \(PST\)](#)

The Pipeline Safety Trust promotes fuel transportation safety through education and advocacy, by increasing access to information, and by building partnerships with residents, safety advocates, government, and industry, that result in safer communities and a healthier environment.

#### [U.S. Coast Guard \(USCG\)](#)

The U.S. Coast Guard is one of the five armed forces of the United States and the only military organization within the Department of Homeland Security. A part of the Coast Guard's mission is realized through its Marine Environmental Protection program, which develops and enforces regulations to avert the introduction of invasive species into the maritime environment, stop unauthorized ocean dumping, and prevent oil and chemical spills. This program is complemented by the Marine Safety program's pollution prevention activities.

## Other Selected References and Links

### [AGA Response to PHMSA Request for Information. Dave McCurdy, American Gas Association, April 10, 2011](#)

In his letter regarding “AGA Response to PHMSA Request for Information”, Dave McCurdy, AGA President & CEO, notes that the “information seeks to place pipeline safety data in a context that explains how operators apply integrity management principles in existing regulations and standards to operate what is the safest energy transportation system in America.” He urges PHMSA to establish a data analysis group comprising all pipeline safety stakeholders “because no single entity possesses the perspective needed to objectively analyze the performance of the diverse pipeline safety infrastructure.”

### [API Recommended Practice 1162, “Public Awareness Programs for Pipeline Operators”](#)

API RP 1162 was developed through the collaborative efforts of pipeline industry representatives, Federal and State pipeline safety regulators, and the public. This industry consensus standard provides guidance and recommendations to pipeline operators for the development and implementation of enhanced public awareness programs. It addresses various elements of such programs, including the intended audiences, the kinds of information to be communicated, frequencies and methodologies for communicating the information, and evaluation of the programs for effectiveness. A nonprintable electronic copy of API RP 1162 may be viewed and downloaded.

### [Distribution Integrity Management Program \(DIMP\)](#)

The PHMSA published the final rule establishing integrity management requirements for gas distribution pipeline systems on December 4, 2009 (74 FR 63906). The effective date of the rule is February 12, 2010. Operators had until August 2, 2011 to write and implement their program.

### [INGAA Foundation Report: Securing Our Future: Developing the Next Workforce](#)

The natural gas transmission industry faces a difficult challenge in maintaining an adequate technical workforce today and throughout the next decade. This study assesses the risks to the industry’s workforce and knowledge assets resulting from the present level of internal company activities along with external factors. The analysis is based on data gathered from executives, managers, operations, and human resource professionals within the natural gas transmission industry and secondary data sources. Recommended strategies are given for the INGAA Foundation and member companies to follow along with short-, medium- and long-term actions necessary to meet the workforce challenges.

### [INGAA Foundation Report: Critical Skills Forecast For the Natural Gas Transmission Industry](#)

This report takes an in-depth look into the positions and functions required in the industry. By identifying positions, skills, and knowledge that may be in short supply and critical functions in the design, construction, operation and maintenance of pipelines, this study locates the largest

risk "intersections" of workforce and tasks -- and gives the industry a place to focus efforts to enhance skill development methods and materials for these vital positions.

#### [PHMSA Stakeholder Communication Website](#)

PHMSA's Stakeholder Communications website provides public access to a wealth of information regarding pipeline transportation. From pipeline incident and mileage statistics to damage prevention information, users will find useful information that to help ensure pipeline safety in their communities.

#### [National Pipeline Mapping System \(NPMS\)](#)

The National Pipeline Mapping System is a geographic information system (GIS) that consists of geospatial data, attribute data, public contact information, and metadata pertaining to the interstate and intrastate hazardous liquid trunk lines and hazardous liquid low-stress lines as well as gas transmission pipelines, liquefied natural gas (LNG) plants, and hazardous liquid breakout tanks jurisdictional to PHMSA.

#### [NTSB Investigations](#)

The National Transportation Safety Board (NTSB) is charged by Congress with determining the probable cause of transportation accidents, promoting transportation safety, and assisting victims of transportation accidents and their families. NTSB investigates only major pipeline accidents. As a result of its investigations the NTSB identifies probable causes and issues recommendations to any operator or regulator involved in the incident. Current investigations can be found on the website.

#### [Oil Oozes through Your Life.](#) New York Times, Stephanie Clifford, June 25, 2011

This article discusses the uses and transportation of petroleum products.

#### [State Damage Prevention Program Characterization \(SDPPC\)](#)

The SDPPC is an effort initiated by PHMSA to assess the extent to which each State is taking steps to incorporate the nine elements of effective damage prevention programs into the State's damage prevention program. The nine elements were cited by Congress in the Pipeline Inspection, Protection, Enforcement, and Safety (PIPES) Act of 2006. Working with State pipeline safety program managers and one-call centers, PHMSA sought to gain a better understanding of the successes and challenges existing in State damage prevention programs, where States need improvement, and where PHMSA should focus its aid.

#### [Title 49 of the Code of Federal Regulations \(CFR\)](#)

Federal regulations are officially codified in the Code of Federal Regulations (CFR). Title 49 covers Transportation. The current pipeline safety regulations are codified under Title 49, Chapter 1, Subchapter D, and Parts 186 through 199.