Summary of Qualifications and Work Experience for Marc Lewis:

I began working in the utility industry as a laborer in 1998 as a fitter and operator. My experience included bare steel replacement in South Dakota as well as growth and PVC replacement in Las Vegas, Nevada. I then returned my focus to education and Graduated from South Dakota School of Mines and Technology ("SDSM&T") with a degree in Civil Engineering. While I was pursuing my bachelor's degree, I made the decision to join the South Dakota ARMY National Guard. My military service included a 16- month deployment in Iraq during 2003 and 2004. The deployment was in support of Operation Iraqi Freedom. Upon completion of the deployment I was honorably discharged.

Upon graduation, I began my employment with Montana-Dakota Utilities Co. ("MDU") in May of 2007. From May 2007 through January of 2010, I worked as a Region Engineer while obtaining a Master's Degree in Construction Management from SDSM&T.

In January 2010, I was promoted to the Operations Manager role in MDU's Williston District located in Williston, North Dakota, and became the District Manager in February 2011. As the District Manager, I oversaw both gas and electric operations in the area heavily impacted by the oil boom in Northwest North Dakota. While in this role, I obtained my Professional Engineering License.

In September of 2012, I was appointed Gas Engineering Superintendent in MDU's General Office. In that capacity, I oversaw the leak survey process, updated company procedures, oversaw the integrity programs and facilitated consistency in the work flow and worked to integrate MDU Resources four separate gas utilities. I also undertook managing the annual review of the DIMP plan and risk model and

participated in DOT inspections.

In October of 2015, I accepted a new opportunity to work for the City of Sioux Falls as a Landfill Operations Manager. In this role, I was responsible for all pipeline activities and operations associated with the city's landfill methane collection system and delivery to the end user. This required leading pipeline safety audits, DIMP audits, leak survey, annual reviews and planned maintenance projects.

In July of 2017, I began working for Black Hills Corporation ("BHC") in my current role as Director of Pipeline and System Integrity. I am responsible for managing the integration of TIMP and DIMP programs across all of BHC's natural gas utility subsidiaries, as well as managing the creation of SIMP for those subsidiaries offering storage.

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.

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. Quarterman at 202-366-4831.

Sincerely yours,

Ray LaHood

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

News

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.

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

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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United States Senate
WASHINGTON, DC 20510

October 4, 2018

Stephen H. Bryant
President and Chief Operating Officer
Columbia Gas of Massachusetts
4 Technology Drive
Westborough, MA 01581

Joseph Hamrock
President and Chief Executive Officer
NiSource
801 E. 86th Avenue
Merrillville, IN 46410

Dear Mr. Bryant and Mr. Hamrock,

After reviewing Columbia Gas' safety, operations, and response plans provided to our offices, it appears that Columbia Gas was woefully unprepared for a major, system-wide disaster like the one that occurred on September 13, 2018 in Lawrence, Andover, and North Andover, Massachusetts. Materials that Columbia Gas has provided to our offices — including its Distribution Integrity Management Plan (DIMP), Operations and Maintenance Manual, September 18 Operational Notice, and 2018 Emergency Response Plan — demonstrate that the company underestimated the possibility of an extremely serious incident, did not adequately build redundancies into its operations or put in place key safety measures to prevent it, and was utterly unprepared to respond to it. Taken together, these failures created conditions that made this disaster a near certainty, yet Columbia Gas does not appear even to have contemplated that an incident of this magnitude could occur. We therefore have many important questions that Columbia Gas must answer before the public can have confidence in the safety of its future operations.

1. Integrity Management Plan

The DIMP is intended to "enhance safety by identifying and reducing gas distribution pipeline integrity risks."[1] Companies must develop this plan under federal regulations, which require that "operators identify risks to their pipelines where an incident could cause serious consequences and focus priority attention in those areas" and "implement a program to provide greater assurance of the integrity of their pipeline."[2] This plan helps pipeline operators understand their systems — the materials that make up the service and main lines, as well as the potential threats

[1] *Distribution Integrity Management Plan*, Columbia Gas of Massachusetts (May 4, 2017), at 5.
[2] 49 CFR § 192, Subpart P.

that might damage distribution systems. It also helps operators understand where and why leaks are occurring within a distribution system.

Threats to Cast Iron Low-Pressure Systems

The integrity of the system is particularly critical in Massachusetts, as more than 500 miles of Columbia Gas' pipeline main are cast or wrought iron. This material is particularly vulnerable to damage from over-pressurization, which can cause cast iron to crack or cause connections to disintegrate. In the Lawrence service area alone, more than 20 percent of the gas mains are made of cast iron, with 4,093 cast iron segments. All low-pressure systems face the dual threats of over-pressurization or under-pressurization, and more than 70,000 customers of Columbia Gas of Massachusetts are served by low-pressure pipelines.

As the Merrimack Valley disaster showed, over-pressurization can cause a high number of leaks along multiple miles of main line and can cause fires, explosions, injuries, and death. If the risk posed by over-pressurization is not sufficiently weighed and assessed, Columbia Gas cannot appropriately prioritize operational changes that would limit that risk, both during upgrade work and routine operations. Avoiding over-pressurization dangers requires considering how every component of the distribution system could cause an over-pressurization event — from the valves to the regulators to the control lines — and calculating the potential consequences and the probability of failure. Columbia Gas' DIMP does not have a separate threat category for over-pressurization, instead including it within threat categories for either equipment failure or incorrect operations, depending on the cause of the over-pressurization event.

The DIMP also fails to specifically identify the separate needs of low-pressure systems and how they might face different and more serious threats. It does not note any differences among the threat categories for low-pressure and high-pressure systems, impeding the company's ability to understand how different threats might affect distribution lines and mains.

Devaluing the Threat of Rare Events or Events that Have Not Yet Occurred

As part of the risk evaluation calculation, the DIMP assigns a value of zero to events that have not yet taken place, almost ensuring that incredibly rare but catastrophic events are not seriously evaluated by operators. It states that, "[i]f no actual leakage has occurred [...] the probability of failure will be given a score of 0 for the purposes of the analysis," and "the consequence of failure will be given a score of 0 for the purpose of the analysis."[3] This minimizes the evaluation of risk from events like a system-wide over-pressurization, which is extremely unlikely to occur but very dangerous when it does.

[3] *Distribution Integrity Management Plan*, Columbia Gas of Massachusetts (May 4, 2017), at 43-44.

For instance, in calculating the probability and consequences of failure from incorrect operation of a cast iron pipe or a regulator station, the Columbia Gas plan gives these scenarios a score of zero, even though the plan also notes that that score does not indicate there is zero risk.[4] It is hard to imagine how this calculation would allow Columbia Gas to take effective steps to avoid operator error on cast iron pipes or at regulator stations, and calls into question the utility of this risk-ranking exercise.

Columbia Gas' DIMP evaluates risk only by looking at past events. By basing its risk calculation solely on events that have already occurred, Columbia Gas cannot properly evaluate potential future risks. Because a system-wide over-pressurization had never previously occurred in Columbia Gas operations, the DIMP was useless in projecting the risk that caused the Merrimack Valley disaster.

The structure of Columbia Gas' risk evaluation also undervalues events if they have not happened within the previous five years. The DIMP states that "[a]ctual risk is evaluated over a consecutive five year period."[5] This limitation means that Columbia Gas is likely to be underprepared for rare but significant failures.

Preventing Operator Error

Columbia's threat category of "incorrect operations" in the plan is inadequate, encompassing only two paragraphs and five one-sentence bullets. It fails to address in any detail the different needs of low-pressure systems or put in place real measures that could reduce operator error.

Additionally, 16 of Columbia Gas' 33 risk-management programs do not include steps to address operator error — either the consequences of incorrect operations or the likelihood that an error could occur.[6] Programs dedicated to key operational procedures such as damage prevention and the inspection of regulator stations do not include steps to reduce operator error. Every facet of company management should address the possibility of incorrect operations.

The DIMP provides little specificity on Columbia Gas' plans to limit the risk of operator error.

1. Does Columbia Gas take cost into account when developing or adopting operating requirements or other measures to reduce risk?
2. If a threat has been assigned a risk score of zero because it has not occurred in the past (or within the past five years), does Columbia Gas feel that that unacceptably reduces the assessment of rare but extremely serious events, such as the Merrimack Valley disaster?

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[4] Table C-1, "Probability of Failure."
[5] *Id.* at 43.
[6] *Id.*, Table D-1.

3. Why does Columbia Gas feel it is justifiable to not consider how threats might be different or greater for a low-pressure system?
4. If risks are only ranked relative to one another, how can Columbia Gas properly assess the likelihood of a catastrophic failure like that seen in the Merrimack Valley?
5. Why do 16 of Columbia Gas' 33 programs used to implement the DIMP not work to mitigate the risk of incorrect operations?

2. Operations and Maintenance Manual

Federal regulations require every operator to have an Operations and Maintenance (O&M) Manual, which must include "written procedures for conducting operations and maintenance activities and for emergency response."[7] This manual includes procedures for responding to over-pressure situations, shutting down pipeline operations, and replacing pipe sections in low-pressure systems — all of which are relevant to the Merrimack Valley disaster.

In light of the potentially serious system-wide consequences of an over-pressurization event, Columbia Gas' internal policies for responding to over-pressure alerts appear to be insufficient. The O&M manual lists specific actions that company representatives will need to take in response to calls from customers or alarms received at Columbia Gas control stations.[8] But the actions required of Columbia Gas personnel in such an event are both too vague and lacking redundancy to help eliminate error.

For example, in an over-pressurization event, there is no requirement that the company identify the station(s) delivering gas to the system or check on the system's functionality, including at the regulator. The O&M manual provides a disturbing lack of guidance when an alarm is triggered, stating, "[w]hen a pressure alarm is received at Gas Control from telemetry monitoring, Gas Control will take proper action to address the alarm. In the case of a high-high pressure alarm, Gas Control will notify Gas Systems Operation personnel."[9] The manual does not explain what merits a "high-high pressure alarm" or identify the actions that Columbia Gas personnel should take in response.

This operating procedure also does not detail the manner in which an emergency shutdown may need to be implemented following a system-wide over-pressurization, stating only that "[i]f system integrity has been compromised (e.g, leakage) or if risk to life or property is imminent, emergency shutdown shall be considered."[10] The operating procedure is silent on who makes that decision, what factors must be considered regarding the over-pressurization, or how fast the decision needs to occur.

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[7] 49 CFR § 192.605.
[8] G.S.1150.080, "Response to Over Pressure."
[9] *Id.* at 2.
[10] *Id.* at 3.

6. Why does Columbia Gas not provide a timeline in its operations manual for considering an emergency shutdown if a system-wide over-pressurization is detected?
7. Why does Columbia Gas not delineate who has the responsibility for initiating an emergency shutdown in an over-pressurization situation?
8. What actions does Gas Control take to respond to high-pressure telemetry alarms and why are these actions not specified in the O&M manual?
9. In the company's operations manual, why does Columbia Gas not specify redundancies in the system that ensure over-pressurization situations are identified and addressed promptly, both in equipment and in operating personnel?

3. Updated Operational Policies

On September 18, 2018, Columbia Gas issued an Operational Notice entitled "Additional Requirements for Tie-Ins Involving Low Pressure Facilities." The notice updated the company's policies regarding work to replace and upgrade pipelines. This is precisely the work that may have been occurring prior to the Merrimack Valley disaster. This updated company policy raises several questions about the manner in which Columbia Gas had been conducting its upgrade and repair work.

The notice updating company policy was issued five days after the over-pressurization incident linked to the Merrimack Valley gas explosions and fires. The updated Operational Notice lays out several new steps for performing tie-in work on low-pressure mains, but many of these steps appear to be common-sense measures that Columbia Gas should have instituted long before the Merrimack Valley disaster.

The notice directs workers to identify the stations that deliver gas directly to the low-pressure system in the area where the work is being done, including the regulator stations that take gas systems from high or medium to low pressure. The updated policy emphasizes that the location of control lines must be identified through a field survey prior to any work and then updated in the regulator station records. In fact, the new policy twice reiterates the importance of understanding the location of control lines, with underlining for emphasis.[11]

The Operational Notice now requires that "[q]ualified company personnel will be on site and in charge" of this kind of upgrade work, "[a]ll stations identified in the tie-in plan will be monitored throughout the tie-in process until the tie-in gauges are removed to assure proper operation," and that the gauges will be "monitored following completion of the tie-in for a minimum of 30 minutes."[12]

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[11] ON 18-09 at 1.
[12] *Id.* at 2.

The omission of these sorts of safety measures from Columbia Gas' operating procedures prior to this disaster is alarming and unacceptable. It raises serious questions as to why these policies were not previously in place for Columbia Gas' systems and whether that failure was the result of negligence, cost considerations, or incompetence.

It is also imperative that, as Columbia Gas continues work upgrading its system throughout the state, its safety standards are evaluated. In a previous response, Mr. Bryant stated that low-pressure systems operated by Columbia Gas currently serve 86,679 customers in Massachusetts. There will be 20 projects in the Lawrence System restoration focused on upgrading the system from low pressure to a higher pressure rating. Residents must be assured that Columbia Gas will conduct this work safely.

10. The updated operating requirements now state that "[q]ualified company personnel will be on site and in charge" of the tie-in execution.
    a. Does this mean that, before this updated notice was issued, no qualified company personnel were required to be on site during work that ties in new pipes to existing low-pressure systems?
    b. Does this mean that qualified company personnel were not in charge or even present while this work was conducted in the area prior to the disaster?
    c. Over the past five years, how many other instances are there of this type of work being done without the supervision of Columbia Gas employees in Massachusetts?
11. Before Columbia Gas issued this updated operating policy, what oversight did its personnel in regulator stations engage in when work was being conducted on low pressure systems? If no personnel were required to be physically present in or at regulator stations, how did Columbia Gas justify that operating procedure?
12. Has Columbia Gas issued any other new Operating Notices since September 13? If so, please provide unredacted copies of each notice.

4. The Emergency Response Plan

The Emergency Response Plan lays out guidelines to help the company classify an incident and judge how to respond. The highest and most severe level of emergency contemplated by Columbia Gas, "Level 1," is reserved for an incident that results in "1,000 and greater customer outages" and is expected to last for "72 hours or longer."[13] Although several reporting requirements in the response plan direct the company to report to state and federal authorities on the number of fatalities or injuries, there are no guidelines for additional steps the company must take after members of the public are injured or killed, such as a heightened level of coordination with first responders. The Merrimack Valley disaster left almost 8,600 meters without gas

[13] D.P.U. 18-ERP-01 (Tab 2, Appendix B, Attachment 1).

service and some outages are expected to last until the entire restoration process is completed on November 19. Twenty-five people were injured and one person was killed. This is a disaster that appears to be several orders of magnitude greater than the most severe emergency for which Columbia Gas had prepared a response.

The Emergency Response Plan also has no timelines for communicating with the public as soon as practicable following a disaster. In an emergency of this magnitude, communicating early and often with the public is essential, yet Columbia Gas does not appear to have made any public statements about this disaster for four hours after the explosions began. Columbia Gas' response plan requires only that website and media updates begin "upon completion of a damage assessment or after the first 24 hours of the damage assessment, whichever comes first," which is woefully insufficient.[14] By failing to provide a plan for immediately informing customers and the public, Columbia Gas' response plan meant that the public was kept in the dark for what was a dangerously long time while the disaster was ongoing.

13. Why did Columbia Gas not appear to contemplate a response for a worst-case-scenario disaster that could affect many thousands of meters for a significant period of time, as well as result in injury and death, such as we saw with the Merrimack Valley gas explosions and fires?
14. Will Columbia Gas update its Emergency Response Plan so it is prepared for a region-wide or system-wide disaster as occurred in the Merrimack Valley? If not, why not? If yes, by when will this update be available?
15. Will Columbia Gas update its Emergency Response Plan to include a set of guidelines on appropriate responses to take when members of the public have been injured or killed? If not, why not? If yes, by when will this update be available?
16. Will Columbia Gas update its Emergency Response Plan to include procedures for immediately notifying the public in the event of an emergency such as this disaster? Will this update include a deadline for notifying customers and the public? If not, why not? If so, by when will this update be available?

5. Safety Management System

Columbia Gas has not finalized a Pipeline Safety Management System (PSMS), as recommended by the American Petroleum Institute (API). According to the API, "[a]dopting and implementing a PSMS will strengthen the safety culture of an organization" and "[n]ewly developing or improving a PSMS will enhance effectiveness of risk management and enable continual improvement of pipeline safety performance."[15] The recommendation was published in July 2015, and developed with input from the Pipeline and Hazardous Materials Safety Administration and the National Transportation Safety Board.

[14] D.P.U. 18-ERP-01 (Tab 2, Appendix B, Page 5 of 12).
[15] API Recommended Practice 1173.

17. Why has Columbia Gas not yet adopted a Pipeline Safety Management System as recommended by API in 2015?
18. By what date will Columbia Gas have a finalized Pipeline Safety Management System?

We are extremely concerned that it does not appear that Columbia Gas ever considered that a disaster of this scale could occur. Residents of the Merrimack Valley affected by this disaster, the 86,679 customers currently served by low-pressure systems operated by Columbia Gas in Massachusetts like the one where this disaster occurred, and people all across the Commonwealth deserve answers on this apparent failure of Columbia Gas' safety and response plans.

Should you have any questions in response to this letter, please contact Morgan Gray in the office of Sen. Markey at 202-224-2742.

Sincerely,

Edward J. Markey
United States Senator

Elizabeth Warren
United States Senator

AGA's Commitment to Enhancing Safety

AGA and its members are dedicated to the continued enhancement of pipeline safety. As such, we are committed to proactively collaborating with public officials, emergency responders, excavators, consumers, safety advocates and members of the public to continue to improve the industry's longstanding record of providing natural gas service safely and effectively to 177 million Americans. AGA and its members support the development of reasonable regulations to implement new federal legislation as well as the National Transportation Safety Board safety recommendations.

Below are voluntary actions that are being addressed by AGA or individual operators to help ensure the safe and reliable operation of the nation's 2.4 million miles of pipeline which span all 50 states representing diverse regions and operating conditions. In addressing these actions, AGA and its individual operators recognize the significant role that their state regulators or governing body will play in supporting and funding these actions.

It is the consensus of AGA members that the actions listed below enhance safety and gas utility operations when implemented as an integral part of each operator's system specific safety actions. However, both the need to implement and the timing of any implementation of these actions will vary with each operator. Each operator serves a unique and defined geographic area and their system infrastructures vary widely based on a multitude of factors, including facility condition, past engineering practices and materials. Each operator will need to evaluate the actions in light of system variables, the operator's independent integrity assessment, risk analysis and mitigation strategy and what has been deemed reasonable and prudent by their state regulators. It is recognized that not all of these recommendations will be applicable to all operators due to the unique set of circumstances that are attendant to their specific systems.

Building Pipelines for Safety

Construction

- Expand requirements of the Operator Qualification (OQ) rule to include new construction of distribution and transmission pipelines.
- Review established oversight procedures associated with pipeline construction to ensure adequacy and confirm that operator construction practices and procedures are followed.

Emergency Shutoff Valves

- Support the use of a risk based approach to the installation of automatic and/or remote control sectionalizing block valves where economically, technically and operationally feasible on transmission lines that are being newly constructed or entirely replaced. Develop guidelines for consideration of the use of automatic and/or remote control sectionalizing block valves on transmission lines that are already in service. Work collaboratively with appropriate regulatory agencies and policy makers to develop these criteria.
- Expand the use of excess flow valves to new and fully replaced branch services, small multi-family facilities, and small commercial facilities where economically, technically and operationally feasible.

Operating Pipelines Safely

Integrity Management

- Continue to advance integrity management programs and principles to mitigate system specific risks. This includes operational activities as well as the repair, replacement or rehabilitation of pipelines and associated facilities where it will most improve safety and reliability.
- Collaborate with stakeholders to develop and promote effective cost-recovery mechanisms to support pipeline assessment, repair, rehabilitation, and replacement programs.
- Develop industry guidelines for data management to advance data quality and knowledge related to pipeline integrity.
- Support development of processes and guidelines that enable the tracking and traceability of new pipeline components.

Excavation Damage Prevention

- Support strong enforcement of the 811 – Call Before You Dig program through state damage prevention laws.
- Improve the level of engagement between the operator and excavators working in the immediate vicinity of the operator's pipelines.

Enhancing Pipeline Safety

Safety Knowledge Sharing

- Review programs currently utilized for the sharing of safety information. Identify and implement models that will enhance safety knowledge exchange among operators, contractors, government and the public.

Stakeholder Engagement and Emergency Response

- Evaluate methods to more effectively communicate with public officials, excavators, consumers, safety advocates and members of the public about the presence of pipelines. Implement tested and proven communication methods to enhance those communications.
- Partner with emergency responders to share appropriate information and improve emergency response coordination.

Pipeline Planning Engagement

- Work with a coalition of Pipelines and Informed Planning Alliance (PIPA) Guidance stakeholders to increase awareness of risk based land use options and adopt existing PIPA recommended best practices.

Advancing Technology Development

- Increase investment, continue participation, and support research, development and deployment of technologies to improve safety. Evaluate and appropriately implement new technological advances.

Gas Utility Industry Actions To Be Implemented	Target Dates *
Confirm the established MAOP of transmission pipelines ***Note:*** Confirmation of established MAOP utilizes the guidance document developed by AGA, "*Industry Guidance on Records Review for Re-affirming Transmission Pipeline MAOPs,"* October 2011.	On an aggregate basis of AGA member companies, complete > 50% of class 3 & 4 locations + class 1&2 HCAs: 7/3/12 Remaining class 3&4 + 1&2 HCAs, based on PHMSA guidance: 7/3/13 Remaining class 1&2 by 7/3/15
Review and revise as necessary established construction procedures to provide for appropriate (risk-based) oversight of contractor installed pipeline facilities.	Trans: 12/31/12 Dist: 12/31/13
Under DIMP, evaluate risk associated with trenchless pipeline techniques and implement initiatives to mitigate risks	12/31/12
Under DIMP, identify distribution assets where increased leak surveys may be appropriate	12/31/12
Integrate applicable provisions of AGA's emergency response white paper and checklist into emergency response procedures	12/31/12
Extend Operator Qualification program to include tasks related to new main & service line construction	6/30/13
Expand EFV installation beyond single family residential homes	6/30/13
Incorporate an Incident Command System (ICS) type of structure into emergency response protocols	6/30/13
Extend transmission integrity management principles outside of HCAs using a risk-based approach	70% of population within PIR by 2020; 1&2 by 2030
Implement applicable portions of AGA's technical guidance documents: 1) Oversight of new construction tasks to ensure quality; 2) Ways to improve engagement between operators & excavators	Within 1 yr of AGA guidance
Begin risk-based evaluation on the use of ASVs, RCVs or equivalent technology on transmission block valves in HCAs	Within 6 months of Comptroller General study
Implement appropriate meter set protection practices identified through the Best Practices Program	Within 6 months of program results

* Target dates are based on an operator's evaluation of these actions in light of system variables, the operator's independent integrity assessment, risk analysis, and mitigation strategy. Target dates also assume state regulatory approval that action is prudent and reasonable and therefore recoverable in rates.

Gas Utility Industry Actions That Exceed 49 CFR Part 192
Incorporate systems and/or processes to reduce human error to enhance pipeline safety
Advocate programs to accelerate the risk-based repair, rehabilitation and replacement of pipelines
Support development of processes and guidelines that enable tracking and traceability of pipeline components
Encourage participation in One-Call by all underground operators and excavators
Influence and/or support state legislation to strengthen damage prevention programs
Use industry training facilities and evaluate opportunities to expand outreach and education programs to internal and external stakeholders
Support and enhance damage prevention programs through outreach, education, intervention and enforcement
Use a risk-based approach to improve excavation monitoring
Develop, support, enhance and promote CGA initiatives targeted at damage prevention, including data submission and 811
Support public awareness programs targeted at damage prevention
Continue AGA Safety Committee initiatives, such as sharing lessons learned through the Safety Information Resource Center, safety alerts through the AGA Safety Alert System, safety communications with customers and supporting AGA's Safety Culture Statement
Explore ways to educate, engage and provide appropriate information to stakeholders to increase pipeline public awareness
Conduct organizational response drills to improve emergency preparedness
Participate in state, regional and national multi-agency emergency response training exercises
Reach out to emergency responder community in order to enhance emergency response capabilities
Verify participation in a mutual assistance program, if appropriate; integrate into emergency response plans
Collaborate with stakeholders near existing transmission lines to increase awareness/adoption of appropriate PIPA recommended best practices
Promote benefits of R&D funding. Support R&D investment, pilot testing and technology implementation
Support technology development and deployment in critical applications
Collaborate on R&D

AGA's Commitment to Enhancing Safety: AGA Actions

ACTIONS COMPLETED

- ✓ Implement discussion groups to address safety issues including discussion groups for employee technical training, material supply chain issues, DIMP implementation, public awareness, work management and GPS/GIS
- ✓ Participate in 2012 DOT Automatic Shut-off Valve and Remote Control Valve Workshop
- ✓ Develop, with INGAA and API, a public document to explain ratemaking mechanisms used for pipeline infrastructure
- ✓ Create a Safety Information Resources Center for the sharing of safety information
- ✓ Hold regional operations executives' roundtables to discuss safety initiatives
- ✓ Sponsor workshop with INGAA and National Association of State Fire Marshals (NASFM) on emergency response
- ✓ Develop a technical note on industry considerations for emergency response plans
- ✓ Develop Emergency Response Resource center with a streamlined mutual assistance program
- ✓ Develop a task group comprised of AGA staff and members that will work closely with Pipelines and Informed Planning Alliance (PIPA) to ensure AGA member concerns are addressed in joint PIPA initiatives
- ✓ Work with INGAA, research consortiums and other pipeline trade associations to provide the NTSB with a compilation of the progress that has been made in advancing in-line inspection technology
- ✓ Host a roundtable focused on operator experience and lessons learned: 2012 Operations Conference
- ✓ Work with INGAA, API, AOPL, Canadian Gas Association and Canadian Energy Pipeline Association on a comprehensive safety management study that explores initiatives currently utilized by other sectors and the pipeline industry.

ONGOING ACTIONS

- ➢ Promote the use of innovative rate mechanisms for faster repair, rehabilitation or replacement.
- ➢ Maintain a clearinghouse on effective cost-recovery mechanisms that states have used to fund infrastructure repair, replacement and rehabilitation projects.
- ➢ Support legislation that strengthens enforcement of damage prevention programs and 811
- ➢ Support the Common Ground Alliance, use of 811 and other programs that address excavation damage
- ➢ Continue the work of the AGA Best Practices Programs to identify superior performing companies and innovative work practices that can be shared with others to improve operations and safety.
- ➢ Continue the Plastic Pipe Database Committee's work to collect and analyze plastic material failures
- ➢ Promote the AGA Safety Culture Statement and a positive safety culture throughout the natural gas industry
- ➢ Conduct workshops, teleconferences and other events to share information including pipeline safety reauthorization, DIMP/TIMP, fitness for service, records, in-line inspection, emergency response, and other key safety initiatives
- ➢ Hold an annual executive leadership safety summit.
- ➢ Recognize statistical top safety performers, promote safety performance and encourage knowledge sharing through AGA Safety Awards
- ➢ Support PHMSA and NAPSR workshops and other events
- ➢ Search for new and innovative ways to inform, engage and provide appropriate information to stakeholders, including emergency responders, public officials, excavators, consumers and safety advocates, and members of the public living in the vicinity of pipelines
- ➢ Participate in the Pipeline Safety Trust's annual conference to provide information on distribution and intrastate transmission pipelines, AGA and industry initiatives, and receive input
- ➢ Work with PHMSA to establish time limits for telephonic or electronic notice of reportable incidents to the National Response Center after the time of confirmed discovery by operator that an incident meets PHMSA incident reporting requirements
- ➢ Build an active coalition of AGA member representatives to work with PHMSA and other stakeholders to implement PIPA recommended practices pertaining to encroachment around existing transmission pipelines
- ➢ Advocate to state commissioners the inclusion of research funding in rate cases in an effort to increase overall funding for R&D
- ➢ Work with PHMSA and other stakeholders on opportunities to increase R&D funding and deployment of technologies
- ➢ Advocate acceptance of technologies that can improve safety

AGA's Commitment to Enhancing Safety: AGA Actions Continued

ACTIONS WITH TARGET DATES

- Develop guidance to determine a distribution or transmission pipeline's fitness for service and MAOP, and the critical records needed for that determination. **(5/30/12)**
- Create a Safety Alert Notification System that will allow AGA or its members to quickly notify other AGA members of safety issues that require immediate attention. **(5/30/12)**
- Develop a more comprehensive technical paper that presents benefits and disadvantages of the installation of ASV/RCV block valves on new, fully replaced and existing transmission pipelines. **(9/30/12)**
- Create technical guidance for oversight of new construction tasks to ensure quality. **(12/31/12)** (Track progress of industry's implementation of guidelines and summarize results annually)
- Utilize DIMP to evaluate the risks associated with trenchless pipeline techniques and implement, where necessary, initiatives to prevent and mitigate those risks. **(12/31/12)**
- Based on the results of the safety management study, identify and begin to implement initiatives that will enhance the appropriate sharing of safety information. **(12/31/12)**
- Include meter protection in 2013 AGA Distribution Best Practices Program with results. **(9/30/13)**

ACTIONS – TARGET DATES NOT APPLICABLE

- Work with PHMSA and distribution operators on ways to address risk to meters from vehicular damage, natural and other outside forces.
- Engage PHMSA and NAPSR in discussions on whether TIMP should be expanded beyond HCAs and the benefits and challenges of applying integrity management principles to additional areas.
- Highlight in DOT workshops, NAPSR meetings and discussions with Government Accountability Office that: 1) Many AGA members are required to manage DIMP and TIMP programs that overlap. The effectiveness, inefficiencies and duplication of multiple integrity management programs must be explored. 2) Low-stress pipelines operating below 30% SMYS should be treated differently.
- Work with industry and regulators to evaluate how the grandfather clause can be modified to reduce and/or effectively eliminate its use for transmission pipelines.
- Work with other stakeholders to develop potential technological solutions that allow for tracking and traceability of new pipeline components (pipe, valves, fittings and other appurtenances attached to the pipe).
- Develop guidelines that provide for an improved level of engagement between operators and excavators.
- Work with other stakeholders to improve pipeline safety data collection and analysis, convert data into meaningful information, determine opportunities to improve safety based on data analysis, identify gaps in the data collected by PHMSA and others, and communicate consistent messages based on the data.
- Develop publications dedicated to improving safety and operations
- Pilot application of PIPA guidelines with select member utilities.

AGA's Commitment to Enhancing Safety: February 2014 Update

AGA and its members are dedicated to the continued enhancement of pipeline safety. As such, we are committed to proactively collaborating with public officials, emergency responders, excavators, consumers, safety advocates and members of the public to continue to improve the industry's longstanding record of providing natural gas service safely and effectively to 177 million Americans. AGA and its members support the development of reasonable regulations to implement new federal legislation as well as the National Transportation Safety Board safety recommendations.

Below are voluntary actions that are being addressed by AGA or individual operators to help ensure the safe and reliable operation of the nation's 2.4 million miles of pipeline which span all 50 states representing diverse regions and operating conditions. In addressing these actions, AGA and its individual operators recognize the significant role that their state regulators or governing body will play in supporting and funding these actions.

It is the consensus of AGA members that the actions listed below enhance safety and gas utility operations when implemented as an integral part of each operator's system specific safety actions. However, both the need to implement and the timing of any implementation of these actions will vary with each operator. Each operator serves a unique and defined geographic area and their system infrastructures vary widely based on a multitude of factors, including facility condition, past engineering practices and materials. Each operator will need to evaluate the actions in light of system variables, the operator's independent integrity assessment, risk analysis and mitigation strategy and what has been deemed reasonable and prudent by their state regulators. It is recognized that not all of these recommendations will be applicable to all operators due to the unique set of circumstances that are attendant to their specific systems.

Building Pipelines for Safety

Construction

- Expand requirements of the Operator Qualification (OQ) rule to include new construction of distribution and transmission pipelines.
- Review established oversight procedures associated with pipeline construction to ensure adequacy and confirm that operator construction practices and procedures are followed.

Emergency Shutoff Valves

- Support the use of a risk based approach to the installation of automatic and/or remote control sectionalizing block valves where economically, technically and operationally feasible on transmission lines that are being newly constructed or entirely replaced. Develop guidelines for consideration of the use of automatic and/or remote control sectionalizing block valves on transmission lines that are already in service. Work collaboratively with appropriate regulatory agencies and policy makers to develop these criteria.
- Expand the use of excess flow valves to new and fully replaced branch services, small multi-family facilities, and small commercial facilities where economically, technically and operationally feasible.

Operating Pipelines Safely

Integrity Management

- Continue to advance integrity management programs and principles to mitigate system specific risks. This includes operational activities as well as the repair, replacement or rehabilitation of pipelines and associated facilities where it will most improve safety and reliability.
- Collaborate with stakeholders to develop and promote effective cost-recovery mechanisms to support pipeline assessment, repair, rehabilitation, and replacement programs.
- Develop industry guidelines for data management to advance data quality and knowledge related to pipeline integrity.
- Support development of processes and guidelines that enable the tracking and traceability of new pipeline components.

Excavation Damage Prevention

- Support strong enforcement of the 811 – Call Before You Dig program through state damage prevention laws.
- Improve the level of engagement between the operator and excavators working in the immediate vicinity of the operator's pipelines.

Enhancing Pipeline Safety

Safety Knowledge Sharing

- Review programs currently utilized for the sharing of safety information. Identify and implement models that will enhance safety knowledge exchange among operators, contractors, government and the public.

Stakeholder Engagement and Emergency Response

- Evaluate methods to more effectively communicate with public officials, excavators, consumers, safety advocates and members of the public about the presence of pipelines. Implement tested and proven communication methods to enhance those communications.
- Partner with emergency responders to share appropriate information and improve emergency response coordination.

Pipeline Planning Engagement

- Work with a coalition of Pipelines and Informed Planning Alliance (PIPA) Guidance stakeholders to increase awareness of risk based land use options and adopt existing PIPA recommended best practices.

Advancing Technology Development

- Increase investment, continue participation, and support research, development and deployment of technologies to improve safety. Evaluate and appropriately implement new technological advances.

Gas Utility Industry Actions To Be Implemented	Target Dates *
1. Confirm the established MAOP of transmission pipelines ***Note:*** Confirmation of established MAOP utilizes the guidance document developed by AGA, "*Industry Guidance on Records Review for Re-affirming Transmission Pipeline MAOPs,"* October 2011.	On an aggregate basis of AGA member companies, complete > 50% of class 3 & 4 locations + class 1&2 HCAs: 7/3/12 Remaining class 3&4 + 1&2 HCAs, based on PHMSA guidance: 7/3/13 ***– Per DOT, MAOP confirmed for all but 5,401 miles*** Remaining class 1&2 by 7/3/15
2. Review and revise as necessary established construction procedures to provide for appropriate (risk-based) oversight of contractor installed pipeline facilities. ***Construction oversight document released 4/13.***	Trans: 12/31/12 Dist: 12/31/13
3. Implement applicable portions of AGA's technical guidance documents: 1) Oversight of new construction tasks to ensure quality; 2) Ways to improve engagement between operators & excavators	Within 1 yr of AGA guidance
4a. Under DIMP, evaluate risk associated with trenchless pipeline techniques and implement initiatives to mitigate risks	12/31/12
4b. Under DIMP, identify distribution assets where increased leak surveys may be appropriate	12/31/12
5. Integrate applicable provisions of AGA's emergency response white paper and checklist into emergency response procedures ***Emergency response white paper & checklist complete***	12/31/12
6. Extend Operator Qualification program to include tasks related to new main & service line construction	6/30/13
7. Expand EFV installation beyond single family residential homes to small commercial and multi-family residential services	6/30/13
8. Implement appropriate meter set protection practices identified through AGA Gas Utility Best Practices Program. Roundtable is being held October 31, 2013.	5/1/14
9. Incorporate an Incident Command System (ICS) type of structure into emergency response protocols	6/30/13
10. Extend transmission integrity management principles to transmission pipelines outside of HCAs using a risk-based approach *Note: Document on integrity management principles is on hold due to PHMSA's Integrity Verification Process initiative*	70% of population within PIR by 2020; 100% of population by 2030
11. Begin risk-based evaluation on the use of ASVs, RCVs or equivalent technology on transmission block valves in HCAs – Controller General Study completed January 2013	July 2013

* Target dates are based on an operator's evaluation of these actions in light of system variables, the operator's independent integrity assessment, risk analysis, and mitigation strategy. Target dates also assume state regulatory approval that action is prudent and reasonable and therefore recoverable in rates. **Per AGA surveys, all target goals have been met by most AGA members**

Gas Utility Industry Actions That Exceed 49 CFR Part 192
Incorporate systems and/or processes to reduce human error to enhance pipeline safety
Advocate programs to accelerate the risk-based repair, rehabilitation and replacement of pipelines
Support development of processes and guidelines that enable tracking and traceability of pipeline components
Encourage participation in One-Call by all underground operators and excavators
Influence and/or support state legislation to strengthen damage prevention programs
Use industry training facilities and evaluate opportunities to expand outreach/education programs to internal and external stakeholders
Support and enhance damage prevention programs through outreach, education, intervention and enforcement
Use a risk-based approach to improve excavation monitoring
Develop, support, enhance and promote CGA initiatives targeted at damage prevention, including data submission and 811
Support public awareness programs targeted at damage prevention
Continue AGA Safety Committee initiatives, such as sharing lessons learned through the Safety Information Resource Center, safety alerts through the AGA Safety Alert System, safety communications with customers and supporting AGA's Safety Culture Statement
Explore ways to educate, engage and provide appropriate information to stakeholders to increase pipeline public awareness
Conduct organizational response drills to improve emergency preparedness
Participate in state, regional and national multi-agency emergency response training exercises
Reach out to emergency responder community in order to enhance emergency response capabilities
Verify participation in a mutual assistance program, if appropriate; integrate into emergency response plans
Collaborate with stakeholders near existing transmission lines to increase awareness/adoption of appropriate PIPA recommended best practices
Promote benefits of R&D funding. Support R&D investment, pilot testing and technology implementation
Support technology development and deployment in critical applications
Collaborate on R&D

AGA's Commitment to Enhancing Safety: AGA Actions

AGA ACTIONS COMPLETED

- ✓ Implement discussion groups to address safety issues including discussion groups for employee technical training and knowledge transfer, material supply chain issues, DIMP implementation, public awareness, work management, GPS/GIS and work management systems, contractor/quality management, odorization, public awareness, and damage prevention.
- ✓ Participate in DOT events on Automatic Shut-off Valve and Remote Control Valves, Pipeline Data, Distribution Integrity Management, Incident Reporting, Public Awareness, Leak Detection System Effectiveness and Understanding the Application of Automatic/Remote Control Shutoff Valves, Integrity Verification Process
- ✓ Develop, with INGAA and API, a public document to explain ratemaking mechanisms used for pipeline infrastructure
- ✓ Create a Safety Information Resources Center for the sharing of safety information
- ✓ Hold regional operations executives' roundtables to discuss safety initiatives: Annually
- ✓ Sponsor workshop with INGAA and National Association of State Fire Marshals (NASFM) on emergency response
- ✓ Develop a technical note on industry considerations for emergency response plans
- ✓ Develop Emergency Response Resource center with a streamlined mutual assistance program
- ✓ Develop a task group comprised of AGA staff and members to work closely with Pipelines and Informed Planning Alliance (PIPA) to ensure AGA member concerns are addressed in joint PIPA initiatives
- ✓ Work with INGAA, research consortiums and other pipeline trade associations to provide the NTSB with a compilation of the progress that has been made in advancing in-line inspection technology
- ✓ Host a roundtable focused on operator experience and lessons learned: Annually at the AGA Operations Conference
- ✓ Work with INGAA, API, AOPL, Canadian Gas Association and Canadian Energy Pipeline Association on a comprehensive safety management study that explores initiatives currently utilized by other sectors and the pipeline industry.
- ✓ With PHMSA, create a Data Quality & Analysis Team to analyze data PHMSA collects, determine what the data is telling us, issue reports, identify missing information and how best to collect that data, and key metrics that indicate safety concerns.

AGA ONGOING ACTIONS

- ➢ Promote the use of innovative rate mechanisms for faster repair, rehabilitation or replacement.
- ➢ Maintain a clearinghouse on effective cost-recovery mechanisms that states have used to fund infrastructure repair, replacement and rehabilitation projects.
- ➢ Support legislation that strengthens enforcement of damage prevention programs and 811
- ➢ Support the Common Ground Alliance, use of 811 and other programs that address excavation damage
- ➢ Continue the work of the AGA Best Practices Programs to identify superior performing companies and innovative work practices that can be shared with others to improve operations and safety.
- ➢ Continue the Plastic Pipe Database Committee's work to collect and analyze plastic material failures
- ➢ Promote the AGA Safety Culture Statement and a positive safety culture throughout the natural gas industry
- ➢ Conduct workshops, teleconferences and other events to share information including pipeline safety reauthorization, DIMP/TIMP, fitness for service, records, in-line inspection, emergency response, and other key safety initiatives
- ➢ Hold an annual executive leadership safety summit.
- ➢ Recognize statistical top safety performers, promote safety performance and encourage knowledge sharing through AGA Safety Awards
- ➢ Support PHMSA and NAPSR workshops and other events
- ➢ Search for new and innovative ways to inform, engage and provide appropriate information to stakeholders, including emergency responders, public officials, excavators, consumers, safety advocates, and the public living near pipelines
- ➢ Participate in the Pipeline Safety Trust's annual conference to provide information on distribution and intrastate transmission pipelines, AGA and industry initiatives, and receive input
- ➢ Build an active coalition of AGA member representatives to work with PHMSA and other stakeholders to implement PIPA recommended practices pertaining to encroachment around existing transmission pipelines
- ➢ Advocate to state commissioners the inclusion of research funding in rate cases in an effort to increase funding for R&D
- ➢ Work with PHMSA and other stakeholders on opportunities to increase R&D funding and deployment of technologies
- ➢ Advocate acceptance of technologies that can improve safety
- ➢ Develop publications dedicated to improving safety and operations

AGA's Commitment to Enhancing Safety: AGA Actions Continued

AGA ACTIONS WITH TARGET DATES

- Develop guidance to determine a distribution or transmission pipeline's fitness for service and MAOP, and the critical records needed for that determination. **(5/30/12) - *Completed***
- Create a Safety Alert Notification System that will allow AGA or its members to quickly notify other AGA members of safety issues that require immediate attention. **(5/30/12) - *Completed***
- Develop a more comprehensive technical paper that presents benefits and disadvantages of the installation of ASV/RCV block valves on new, fully replaced and existing transmission pipelines. **(9/30/12) – *Completed***
- Create technical guidance for oversight of new construction tasks to ensure quality. **(12/31/12)** – ***Completed*** (Track progress of industry's implementation of guidelines and summarize results annually)
- Utilize DIMP to evaluate the risks associated with trenchless pipeline techniques and implement, where necessary, initiatives to prevent and mitigate those risks. **(12/31/12) – *Completed. Guidance created for new installations. Multiple events to highlight how different companies are addressing the potential risk associated with historic trenchless pipe installations*.**
- Based on the results of the safety management study, identify and begin to implement initiatives that will enhance the appropriate sharing of safety information. **(12/31/12) – *Safety management study complete. New key initiative: Pilot test of Peer-to-Peer reviews. Reviews began mid-2013 and remaining reviews to be completed by April 2014***
- Include meter protection in 2013 AGA Distribution Best Practices Program. **(9/30/13) – *Completed. Topic included in the 2013 Best Practices Program.***

AGA ACTIONS – TARGET DATES NOT APPLICABLE

- Work with PHMSA and distribution operators on ways to address risk to meters from vehicular damage, natural and other outside forces.
- Engage PHMSA and NAPSR in discussions on whether TIMP should be expanded beyond HCAs and the benefits and challenges of applying integrity management principles to additional areas.
- Highlight in DOT workshops, NAPSR meetings and discussions with Government Accountability Office that: 1) Many AGA members are required to manage DIMP and TIMP programs that overlap. The effectiveness, inefficiencies and duplication of multiple integrity management programs must be explored. 2) Low-stress pipelines operating below 30% SMYS should be treated differently.
- Work with industry and regulators to evaluate how the grandfather clause can be modified to reduce and/or effectively eliminate its use for transmission pipelines.
- Work with industry and regulators on meaningful metrics, including leading indicators, that indicate pipeline safety issues
- Work with other stakeholders to develop potential technological solutions that allow for tracking and traceability of new pipeline components (pipe, valves, fittings and other appurtenances attached to the pipe).
- Develop guidelines that provide for an improved level of engagement between operators and excavators.
- Work with PHMSA to establish time limits for telephonic or electronic notice of reportable incidents to the National Response Center after the time of confirmed discovery by operator that an incident meets PHMSA incident reporting requirements
- Work with other stakeholders to improve pipeline safety data collection and analysis, convert data into meaningful information, determine opportunities to improve safety based on data analysis, identify gaps in the data collected by PHMSA and others, and communicate consistent messages based on the data.
- Pilot application of PIPA guidelines with select member utilities.

AGA's Commitment to Enhancing Safety: Revised February 2016

AGA and its members are dedicated to the continued enhancement of pipeline safety. As such, we are committed to proactively collaborating with federal and state regulators, public officials, emergency responders, excavators, consumers, safety advocates and the public to continue improving the industry's longstanding record of providing natural gas service safely, reliably and efficiently to 177 million Americans. AGA and its members support the development of reasonable regulations to meet federal objectives and National Transportation Safety Board recommendations.

Below are voluntary actions that are being taken by AGA or individual operators to help ensure safe and reliable operation of the nation's 2.5 million miles of natural gas pipeline which span all 50 states with diverse geographic and operating conditions. AGA and its individual operators recognize the significant role that their state regulators or governing bodies play in supporting and funding these actions.

It is the consensus of AGA members that the actions listed below enhance safety, gas utility operations, and reduce greenhouse gas emissions when implemented as an integral part of each operator's specific safety programs. However, both the need to implement and the timing of implementation of these actions will vary with each operator. Each operator will need to evaluate the actions in light of system and geographic variables, the operator's independent integrity assessment, risk analysis and mitigation strategy and what has been deemed reasonable and prudent by their state regulators. Therefore, not all of these recommendations will be applicable to all operators.

Building Pipelines for Safety

Construction

- Expand requirements of the Operator Qualification rule to include new pipeline construction.
- Review established pipeline construction oversight procedures to ensure adequacy and compliance with those procedures.
- Implement industry leading practices when installing new pipelines to help prevent damage to other facilities.

Emergency Shutoff Valves

- Support a risk based approach to the installation of automatic and/or remote control isolation valves where technically and operationally feasible on newly constructed or entirely replaced transmission lines.
- Work with regulatory agencies and policy makers to develop guidelines for consideration of automatic and/or remote control isolation valves on transmission lines that are in service.
- Expand the use of excess flow valves (EFVs) to new and fully replaced branch services, small multi-family facilities, and small commercial facilities where technically and operationally feasible.

Operating Pipelines Safely

Integrity Management

- Advance integrity management programs and principles to mitigate system specific risks. This includes operational activities, repair, replacement or rehabilitation of pipelines and associated facilities where it will most improve safety and reliability.
- Collaborate with stakeholders to develop and promote effective cost-recovery mechanisms to support pipeline assessment, repair, rehabilitation, and replacement programs.
- Develop industry guidelines for data management to advance data quality and knowledge related to pipeline integrity.
- Support development of processes and guidelines that enable the tracking and traceability of new pipeline components.

Excavation Damage Prevention

- Support strong enforcement of the 811 – Call Before You Dig program, and advocate for the reduction of excavator exemptions within state damage prevention laws.
- Improve engagement between the operator and excavators on the need to call before digging to reduce excavation damage.

Physical and Cybersecurity/System Controls

- Take actions that help strengthen the physical and cybersecurity of the gas utility industry.
- Enhance system monitoring and control of gas systems.

Enhancing Pipeline Safety

Safety Knowledge Sharing

- Expand the voluntary national Peer Review Program to allow companies to observe their peers, identify what is working well, identify opportunities to improve, and share leading practices.
- Evaluate the work of other industries to improve safety. Identify and implement models that will assist in enhancing safety and encourage knowledge exchange among operators, contractors, government and the public.

Workforce Development

- Collaborate with industry, government, educational institutions and labor groups to develop solutions to address the need for a qualified, diverse workforce.

Public Awareness and Emergency Response

- Evaluate methods to effectively communicate with public officials, excavators, consumers, safety advocates and the public about the presence of pipelines. Implement tested and proven communication methods to enhance those communications.
- Partner with emergency responders to share information and improve emergency response coordination.

Pipeline Planning Engagement

- Work with a coalition of Pipelines and Informed Planning Alliance (PIPA) Guidance stakeholders to increase awareness of risk based land use options and adopt existing PIPA recommended best practices.

Advancing Technology Development

- Increase investment, continue participation, and support research, development and deployment of technologies to improve safety.

AGA's Commitment to Enhancing Safety: Industry Actions That Exceed 49 CFR Part 192

Building Pipelines for Safety

Construction

- Maintain a clearinghouse on effective cost-recovery mechanisms that states have used to fund infrastructure repair, replacement and rehabilitation projects.

Emergency Shutoff Valves

- Install EFVs on new and fully replaced branch services, small multi-family facilities, and small commercial facilities where technically and operationally feasible.

Operating Pipelines Safely

Integrity Management

- Advocate programs to accelerate the risk-based repair, rehabilitation and replacement of pipelines.
- Support development of processes and guidelines that enable tracking and traceability of pipeline components.
- Continue the Plastic Pipe Database Committee's work to collect and analyze plastic material failures.
- Incorporate systems and/or processes to reduce human error.
- Promote the use of API RP 1171, *Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs*, and API RP 1170, *Design and Operation of Solution-mined Salt Caverns Used for Natural Gas Storage. This includes teleconferences, workshops and roundtables to share lessons learned from companies voluntarily adopting the recommended practices,*

Excavation Damage Prevention

- Use a risk-based approach to improve excavation monitoring.
- Support the Common Ground Alliance, the use of 811 and other damage prevention initiatives through outreach, education, intervention and enforcement.
- Influence and/or support state legislation to strengthen damage prevention programs.
- Encourage participation in One-Call by all underground operators and excavators.

Physical and Cybersecurity/System Controls

- Participate in a Downstream Natural Gas Information Sharing & Analysis Center (DNG ISAC).
- Conduct cybersecurity vulnerability assessments.
- Collaborate with government to develop and implement guidance, such as *DOE ONG-C2M2, DOE Energy Sector & TSA Transportation Sector Framework Implementation Guidance* and NIST *Energy Sector Cybersecurity Framework Implementation Guidance*
- Create industry guidance and hold events to strengthen the physical and cybersecurity of the natural gas infrastructure, including the *Natural Gas Utility Threat Analysis Elements & Mitigations Guidance, Cybersecurity Procurement Language Guidance*, an AGA Energy Delivery Cybersecurity Executive Summit, cyber threat analysis workshops, insider threat workshops, workshops on the Oil and Natural Gas Cybersecurity Capability Maturity Model (ONG C2M2), and an annual AGA/EEI Security Conference.

Enhancing Pipeline Safety

Pipeline Safety Management Systems

- Promote the use of API RP 1173, Pipeline Safety Management System (PSMS) Recommended Practice, including piloting of the PSMS, teleconferences and workshops to share lessons learned, and tools that can help the industry implement the PSMS.
- Promote the AGA Safety Culture Statement and a positive safety culture throughout the natural gas industry.

Safety Knowledge Sharing

- Continue AGA Board Safety Committee initiatives, such as sharing lessons learned through the Safety Information Resource Center, safety alerts through the AGA Safety Alert System, safety communications with customers, supporting AGA's Safety Culture Statement, and holding an annual Executive Leadership Safety Summit.
- Recognize statistical top safety performers, promote safety performance and encourage knowledge sharing through AGA Safety Awards.
- Continue the work of the AGA Best Practices Programs to identify superior performing companies and innovative work practices that can be shared with others to improve operations and safety.
- Conduct workshops, teleconferences, discussion groups, and other events to share information including pipeline safety reauthorization, DIMP/TIMP, fitness for service, records, in-line inspection, emergency response, and other key safety initiatives

Workforce Development

- Support of the efforts of the Center for Energy Workforce Development, Energetic Women, natural gas boot camps, regional gas associations, and educational institutes on solutions to address the need for a qualified, diverse workforce.

Public Awareness and Emergency Response

- Explore ways to educate, engage and provide appropriate information to stakeholders to increase pipeline public awareness and the need to call if you smell gas.
- Support public awareness programs targeted at damage prevention and pipeline safety awareness
- Use industry training facilities and evaluate opportunities to expand outreach/education programs to external stakeholders.
- Reach out to emergency responder community in order to enhance emergency response capabilities.
- Collaborate with stakeholders near existing transmission lines to increase awareness/adoption of appropriate PIPA recommended best practices.
- Conduct organizational response drills to improve emergency preparedness.
- Participate in state, regional and national multi-agency emergency response training exercises.
- Support industry participation in a mutual assistance program.
- Search for new and innovative ways to inform, engage and provide appropriate information to stakeholders, including emergency responders, public officials, excavators, consumers, safety advocates, and the public living near pipelines.
- Educate the Pipeline Safety Trust and other public stakeholders on distribution and intrastate transmission pipelines, AGA and industry initiatives to improve pipeline safety, and receive input.
- Develop publications dedicated to improving safety and operations.

Pipeline Planning Engagement

- Build an active coalition of AGA member representatives to work with PHMSA and other stakeholders to implement PIPA recommended practices pertaining to encroachment around existing transmission pipelines.

Advancing Technology Development

- Support R&D investment, pilot testing and technology implementation.
- Work with PHMSA and other stakeholders on opportunities to increase R&D funding and deployment of technologies.
- Advocate to state commissions the inclusion of research funding in rate cases.

AGA's Commitment to Enhancing Safety: Actions Completed

Building Pipelines for Safety

Construction

- ✓ Review and revise established construction procedures to provide for appropriate (risk-based) oversight of contractor installed pipeline facilities.
- ✓ Extend Operator Qualification to include tasks related to new main & service construction.
- ✓ Implement applicable portions of AGA's technical guidance document, "Oversight of new construction tasks to ensure quality."

Emergency Shutoff Valves

- ✓ Expand EFV installation beyond single family residential homes to small commercial and multi-family residential services.
- ✓ Begin risk-based evaluation on the use of automatic shutoff valves, remotely controlled valves or equivalent technology in HCAs.

Operating Pipelines Safely

Integrity Management

- ✓ Confirm the established Maximum Allowable Operating Pressure (MAOP) of transmission pipelines.
- ✓ Under DIMP, evaluate risk associated with trenchless pipeline techniques and implement initiatives to mitigate risks.
- ✓ Under DIMP, identify distribution assets where increased leak surveys may be appropriate.
- ✓ With PHMSA, create a Data Quality & Analysis Team to analyze data PHMSA collects, determine what the data is telling us, issue reports, identify missing information and how best to collect that data, and key metrics that indicate safety concerns.
- ✓ Implement appropriate meter set protection practices identified through AGA Gas Utility Best Practices Program.

Excavation Damage Prevention

- ✓ Implement applicable portions of AGA's technical guidance, "Ways to improve engagement between operators & excavators."

Physical and Cybersecurity/System Controls

- ✓ Create a DNG ISAC.
- ✓ Create a Cybersecurity Task Force to develop products and programs that strengthen cybersecurity.
- ✓ Conduct an all hazard threat analysis and physical security benchmarking survey.
- ✓ Work with TSA to develop and implement Pipeline Security Guidelines.
- ✓ Create a Cybersecurity Assessment Program, including workshops that will allow industry to address their cybersecurity risks.
- ✓ Hold workshops and events: Workplace Violence Prevention & Insider Threats, SCADA, Control Room Management.

Enhancing Pipeline Safety

Safety Knowledge Sharing

- ✓ Create a voluntary AGA Peer Review Program that allows subject matter experts from gas utilities to review peer companies, identify areas that are working well and areas for potential improvement.
- ✓ Work with INGAA, API, AOPL, Canadian Gas Association and Canadian Energy Pipeline Association on a comprehensive safety management study that explores initiatives currently utilized by other sectors and the pipeline industry.
- ✓ Create a Safety Information Resources Center for the sharing of safety information.
- ✓ Hold regional operations executives' roundtables annually to discuss safety initiatives.
- ✓ Annually host roundtables focused on operator experience and lessons learned during the AGA Operations Conference.
- ✓ Develop guidance: To determine a distribution or transmission pipeline's fitness for service and MAOP, and the critical records needed for that determination; For oversight of new construction tasks to ensure quality; For trenchless pipeline installations; That presents benefits and disadvantages of the installation of ASV/RCV block valves on new, fully replaced and existing transmission pipelines; On intergenerational transfer of knowledge for Field Supervisors; Emergency response; Natural gas infrastructure physical security.

Workforce Development

- ✓ Annual AGA Executive Leadership Development Program.
- ✓ Annual Center for Energy Workforce Development (CEWD) Summits.
- ✓ Create an AGA Diversity & Inclusion Task Force.
- ✓ Participate in government/industry initiatives to foster workforce development, such as the Utility Workforce Advisory Council composed of the Departments of Energy, Defense, Labor, Veterans Affairs; AGA, Edison Electric Institute, Nuclear Energy Institute, National Rural Electric Cooperative Association, American Public Power Association, International Brotherhood of Electrical Workers, Utility Workers Union of America, and CEWD.

Public Awareness and Emergency Response

- ✓ Incorporate an Incident Command System (ICS) type of structure into emergency response protocols.
- ✓ Integrate applicable provisions of AGA's emergency response white paper and checklist into emergency response procedures.
- ✓ Create a Safety Alert Notification System that will allow AGA or its members to quickly notify other AGA members of safety issues that require immediate attention.
- ✓ Develop an Emergency Planning Resource Center and a Mutual Assistance Database.
- ✓ Implement AGA discussion groups to address safety issues including technical training and knowledge transfer, material supply chain issues, DIMP implementation, TIMP risk models, Pipeline Safety Management Systems, pipeline safety/compliance/oversight, GPS/GIS and work management systems, contractor/quality management, management of company standards, odorization, compressor operations, public awareness, and damage prevention.

Pipeline Planning Engagement

- ✓ Develop a task group comprised of AGA staff and members to work closely with Pipelines and Informed Planning Alliance (PIPA) to ensure AGA member concerns are addressed in joint PIPA initiatives.

Advancing Technology Development

- ✓ Work with INGAA, research consortiums and other pipeline trade associations to provide the NTSB with a compilation of the progress that has been made in advancing in-line inspection technology.

U.S. Department
of Transportation

Pipeline and Hazardous Materials Safety Administration

Administrator

1200 New Jersey Avenue SE
Washington, DC 20590

DEC 19

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

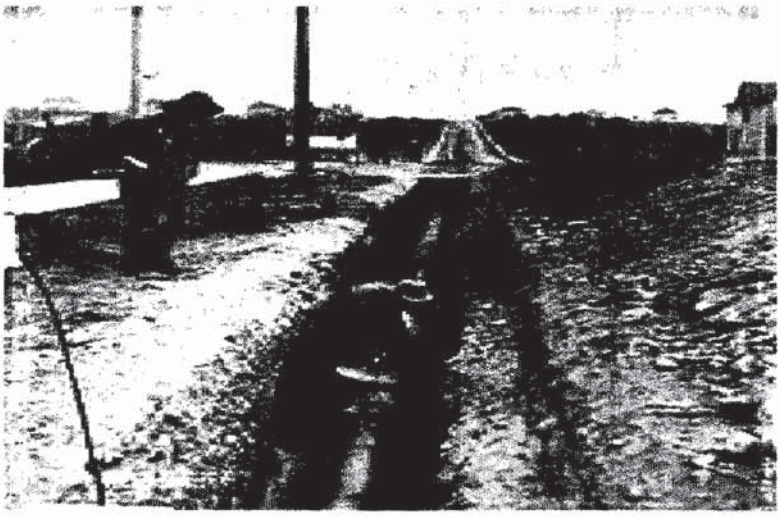
UNITED STATES DEPARTMENT OF TRANSPORTATION
PIPELINE AND HAZARDOUS MATERIALS SAFETY ADMINISTRATION

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.[1]

State Ratemaking

[1] 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.[2]

- 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

[2] 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.[3]

- 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.[4]

- 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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[3] 72 FR 51301.

[4] 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.[5] 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."[6] The Division of Energy is responsible for regulating the State's four natural gas

[5] http://opsweb.phmsa.dot.gov/pipelineforum/

[6] http://www.nj.gov/bpu/about/index.html.

service providers: Elizabethtown Gas, New Jersey Natural Gas (NJNG), PSE&G, and South Jersey Gas.[7]

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.[8] 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.[9]

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.[10]

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.[11]

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[7] http://www.state.nj.us/bpu/index.shtml

[8] 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.

[9] *See* http://www.elizabethtowngas.com/Universal/RatesandTariff/RegulatoryInformation.aspx

[10] *See* http://www.njng.com/regulatory/filings.asp

[11] 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."[12]

Indiana

Established in the early 20th 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.[13]

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 isamortized 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.[14]

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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[12] *Kentucky Public Service Commission v. Commonwealth of Kentucky*, 324 S.W.3d 373 (KY 2010).

[13] http://www.in.gov/iurc/

[14] *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.[15] 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.[16]

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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[15] http://psc.mo.gov/

[16] 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.[17]

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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[17] 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.[18] 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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[18] 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.[19]

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.[20] 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.[21] 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.[22]

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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[19] http://www.rrc.state.tx.us/

[20] Tex. Util.Code Ann. § 104.301.

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

[22] 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.[23]

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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[23] 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.[24] 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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[24] 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

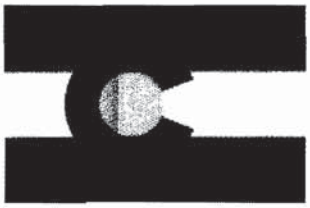
PARTICIPANT: San Diego Gas and Electric

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

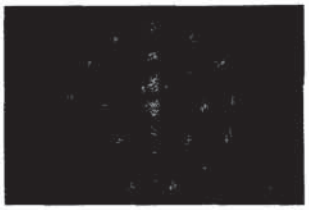
Illinois

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

PARTICIPATNT: 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

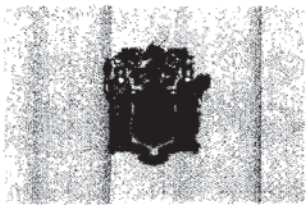
New Hampshire

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

Resolution Encouraging Natural Gas Line Investment and the Expedited Replacement of High-Risk Distribution Mains and Service Lines

WHEREAS, NARUC and its members have long focused on pipeline safety, led by the Committee on Gas, established in 1964, the Staff Subcommittee on Pipeline Safety, the Task Force on Pipeline Safety, and the newly created Subcommittee on Pipeline Safety; *and*

WHEREAS, NARUC enjoys a close working relationship with the National Association of Pipeline Safety Representatives (NAPSR), a national organization representing the State pipeline inspection workforce throughout the country; *and*

WHEREAS, NAPSR in November 2011 released an exhaustive compendium of State pipeline safety programs which exceed the minimum federal standards States must meet in order to receive funding from the U.S. Pipeline and Hazardous Materials Safety Administration (PHMSA); *and*

WHEREAS, NARUC and the Committee on Gas maintain a strong cooperative partnership with PHMSA, which is essential to ensure State and federal safety regulators work closely on pipeline safety; *and*

WHEREAS, More than two million miles of natural gas distribution pipelines crisscross the United States, connecting homes and businesses with one of America's most important energy resources. These pipelines are the safest, most reliable and cost-effective way to transport this essential fuel across the country; *and*

WHEREAS, The safe and reliable delivery of natural gas to homes and businesses and its use in providing new products and services is vital to the U.S. and of paramount importance to members of NARUC; *and*

WHEREAS, By law, the utilities are charged with knowing the location, material, age and condition of their systems. Developing essential data to evaluate the integrity of the systems is the foundation for any determination over what regulators need to fund in rates, as well as what rate recovery methodology best suits a particular case; *and*

WHEREAS, Many States and distribution utilities are undergoing significant pipeline replacement programs to replace aging pipe; *and*

WHEREAS, Many distribution companies are being proactive about replacing their aging pipelines through a risk-based approach focusing on prioritizing safety, asset replacement, and rate impact; *and*

WHEREAS, Alternative rate-recovery mechanisms may help expedite the replacement and expansion of the pipeline systems by promoting more timely rate recovery for investments in infrastructure, safety and reliability; *and*

WHEREAS, Alternative rate recovery mechanisms may help eliminate near-term financial barriers of traditional ratemaking policies such as "regulatory lag" and promote access to lower-cost capital; *and*

WHEREAS, The adoption of alternative rate policies may be very effective for advancing critical safety and reliability infrastructure upgrades, *and*

WHEREAS, Notwithstanding the positive advances in innovative ratemaking and proactive remediation by many distribution companies, utility management bears ultimate responsibility for their respective systems and should seek to work, in ways permissible under their respective State rules and law, collaboratively with Commissioners and/or Commission staff to prioritize asset replacement based upon asset risk, available technology, public safety risk, rate impact, *and*

WHEREAS, Ensuring pipeline safety is about more than just replacement and cost recovery. It is also about effective communication, enforcement, risk sharing, and establishing a long range strategic plan that ensures a safe and reliable gas pipeline system; *and*

WHEREAS, As evidenced in the NAPSR 2011 Compendium, State commissions and inspectors are best suited to determine how best to finance system improvements because each State is different and the needs and financial circumstances of each utility system are unique; *now, therefore be it*

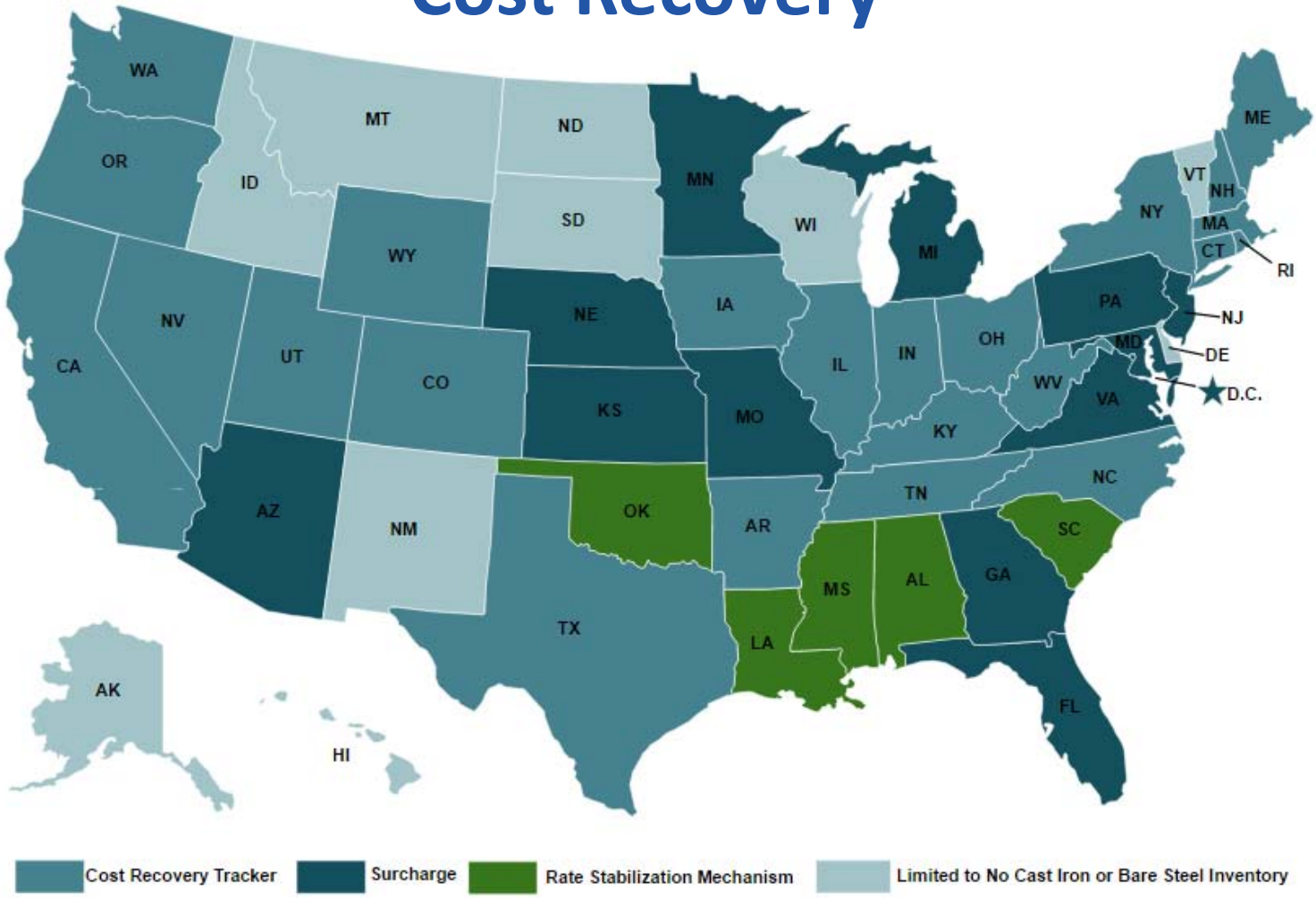
RESOLVED, That the Board of Directors of the National Association of Regulatory Utility Commissioners, convened at the 2013 Summer Committee Meetings, in Denver, Colorado, encourages regulators and industry to consider sensible programs aimed at replacing the most vulnerable pipelines as quickly as possible along with the adoption of rate recovery mechanisms that reflect the financial realities of the particular utility in question; *and be it further*

RESOLVED, That State commissions should explore, examine, and consider adopting alternative rate recovery mechanisms as necessary to accelerate the modernization, replacement and expansion of the nation's natural gas pipeline systems, *and be it further*

RESOLVED, That NARUC encourages its members to reach out to PHMSA, NAPSR, industry, State and local officials, and the general public about pipeline safety and replacement programs.

Sponsored by the Committee on Gas and the Committee on Critical Infrastructure
Adopted by the NARUC Board of Directors July24, 2013

States with Accelerated Infrastructure Cost Recovery



Utilities with Full Infrastructure Cost Recovery Mechanisms

1. AL – Alabama Gas Company
2. AL – Mobile Gas Service
3. AR – Arkansas Oklahoma Gas
4. AR -- SourceGas
5. AR – CenterPoint Energy
6. CA – San Diego Gas and Electric
7. CA – Southern California Gas
8. CA – Southwest Gas
9. CO – Public Service Co. of Colorado
10. CO – Atmos Energy
11. CO -- SourceGas
12. CT – Connecticut Natural Gas
13. DC – Washington Gas
14. FL – Chesapeake Utilities
15. FL – Florida Public Utilities Company
16. FL – Florida City Gas
17. FL – TECO Peoples Gas
18. GA – Atlanta Gas Light
19. GA – Liberty Utilities
20. IL – Ameren Illinois
21. IL – NICOR Gas
22. IL – Peoples Gas
23. IN – Vectren North Indiana Gas
24. IN – Vectren South SIGECO
25. IN – NIPSCO
26. KS – Atmos Energy
27. KS – Black Hills
28. KS – Kansas Gas Service
29. KY – Atmos Energy
30. KY – Columbia Gas of Kentucky
31. KY – Delta Natural Gas
32. KY – Duke Energy Kentucky
33. LA – CenterPoint Energy
34. LA – Entergy Gulf States
35. MA—Berkshire Gas
36. MA – Columbia Gas of Massachusetts
37. MA – National Grid Massachusetts
38. MA – Eversource Energy
39. MA – Liberty Utilities
40. MA—Unitil
41. MD – Baltimore Gas and Electric
42. MD – Columbia Gas of Maryland
43. MD – Washington Gas
44. MI – Consumers Energy
45. MI – DTE
46. MI – SEMCO Energy
47. MN – Xcel Energy
48. MO – Ameren Missouri
49. MO – Liberty Utilities
50. MO – Laclede Gas
51. MO – Missouri Gas Energy
52. MS – Atmos Energy
53. MS – CenterPoint Energy
54. NC – Piedmont Natural Gas
55. NC – Public Service of North Carolina
56. NH – Liberty Utilities
57. NJ – New Jersey Natural
58. NJ – Elizabethtown Gas
59. NJ – Public Service Electric and Gas
60. NJ – South Jersey Gas
61. NV – Southwest Gas
62. OH – Columbia Gas of Ohio
63. OH – Dominion East Ohio
64. OH – Duke Energy
65. OH – Vectren Ohio
66. OK – CenterPoint Energy
67. OR – Avista Corp.
68. OR – NW Natural
69. PA – Columbia Gas of Pennsylvania
70. PA – Equitable Gas
71. PA – Peoples Gas Company
72. PA – Peoples TWP
73. PA – UGI Central Penn Gas
74. PA – UGI Penn Natural Gas
75. PA – PECO
76. PA – Philadelphia Gas Works
77. RI – National Grid Narragansett Gas
78. SC – Piedmont Natural Gas
79. SC – South Carolina Electric and Gas
80. TN – Atmos Energy
81. TN – Piedmont Natural Gas
82. TX – Atmos Energy
83. TX – CenterPoint Energy
84. TX – Texas Gas Service
85. UT – Questar Gas
86. VA – Atmos Energy
87. VA – Columbia Gas of Virginia
88. VA – Virginia Natural Gas
89. VA – Washington Gas
90. WA – Avista Corporation
91. WA – Puget Sound Energy, Inc.
92. WA – Cascade Natural Gas Company
93. WA – Northwest Natural Gas Company
94. WV – Mountaineer Gas Company
95. WV- Dominion Hope
96. WY– Black Hills

Limited and Pending Infrastructure Mechanisms

LIMITED – 3 States

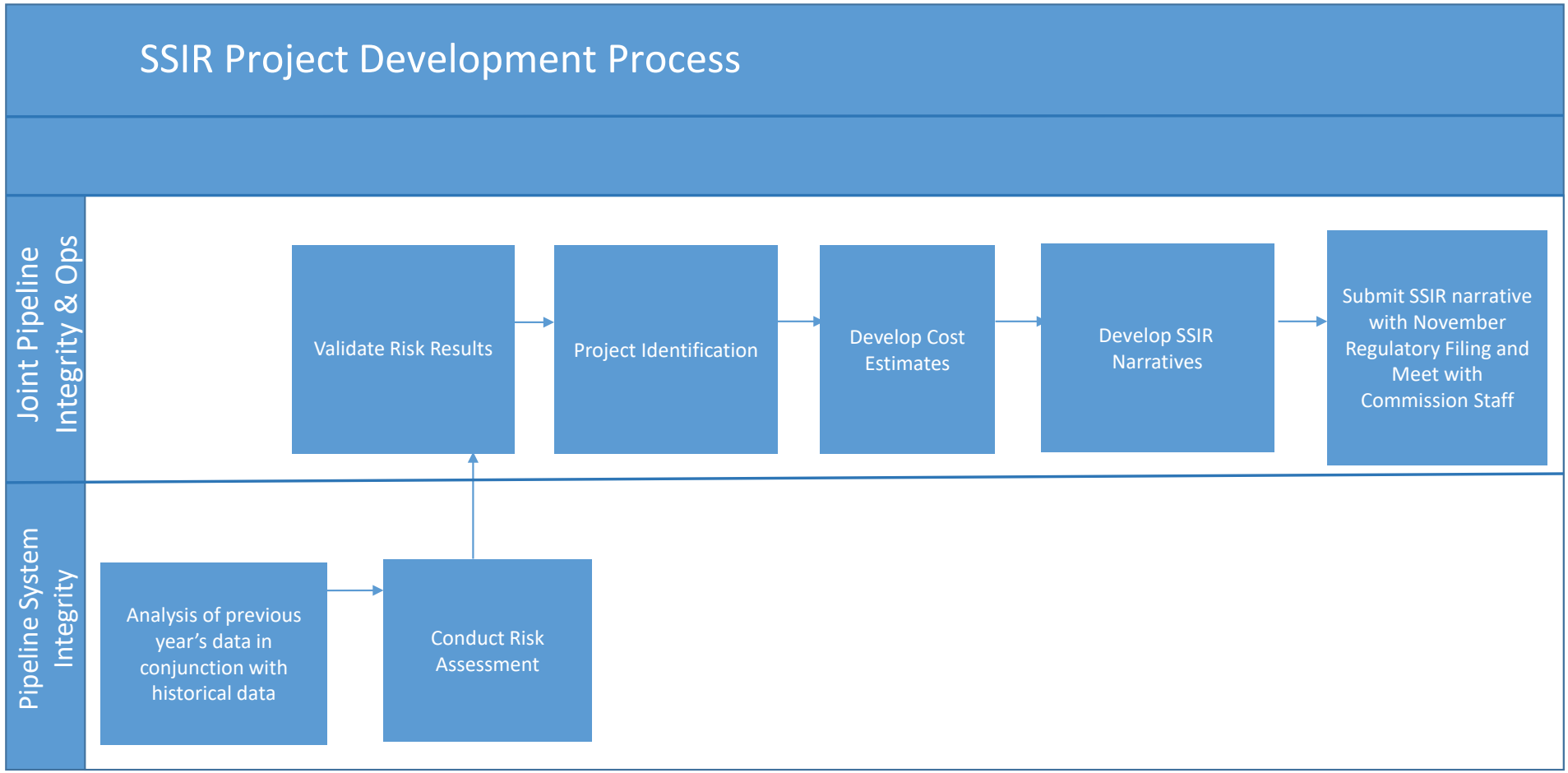
1. AZ – Southwest Gas
2. ME – Northern Utilities
3. NY – Consolidated Edison
4. NY – Corning Natural Gas
5. NY – National Grid NYC
6. NY – National Grid Long Island
7. NY – National Grid Niagara Mohawk
8. NY – Orange and Rockland

PENDING – 3 States

1. KS – All utilities
2. NJ – Elizabethtown Gas
3. NY – Consolidated Edison
4. NY – All utilities

GENERIC RULINGS OR LEGISLATION – 3 States

1. Iowa – All utilities may apply
2. Nebraska – All utilities may apply
3. West Virginia – All utilities may apply


SSIR Project Development Process
Joint Pipeline Integrity & Ops
Validate Risk Results
Project Identification
Develop Cost Estimates
Develop SSIR Narratives
Submit SSIR narrative with November Regulatory Filing and Meet with Commission Staff
Pipeline System Integrity
Analysis of previous year's data in conjunction with historical data
Conduct Risk Assessment