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**BEFORE THE  
COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION  
UNITED STATES SENATE**

**PIPELINE SAFETY IN THE MERRIMACK VALLEY: INCIDENT  
PREVENTION AND RESPONSE  
LAWRENCE, MA**

**November 26, 2018**

**I. INTRODUCTION**

Senator Markey and Senator Warren, thank you for inviting me to testify today as part of the Senate Commerce, Science and Transportation Committee’s field hearing to discuss the September 13, 2018 natural gas accident involving Columbia Gas of Massachusetts and the oversight and effectiveness of state pipeline safety programs.

Safety is the number one priority for U.S. Secretary of Transportation Elaine L. Chao and PHMSA Administrator Howard “Skip” Elliott. The recent tragic events in your state can only intensify the Pipeline and Hazardous Materials Safety Administration’s (PHMSA) commitment to its goal of zero pipeline incidents.

The mission of the PHMSA is to protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives. The natural gas explosions and fires in Lawrence, Andover, and North Andover, Massachusetts, were tragic and all of us at PHMSA sympathize with the family of Leonel Rondon, the young man who lost his life, and all those who suffered injuries, or have property that was adversely impacted.

In response to the accident, PHMSA quickly dispatched multiple inspectors to Massachusetts to provide technical assistance to the National Transportation Safety Board (NTSB) and to the

Massachusetts Department of Public Utilities (MA DPU). To date, PHMSA staff have provided more than 600 work-hours of technical engineering expertise, emergency response, and support. PHMSA will continue to assist the NTSB and the MA DPU as long as needed.

In addition, PHMSA Administrator Elliott has made it a priority to make himself available for discussions with the Congressional Delegation and the Governor of Massachusetts. PHMSA will also continue to prioritize answering your questions relating to this incident and working with all Massachusetts officials.

## **II. ROLES**

Under PHMSA's oversight, pipelines have continued to remain one of the safest ways to transport hazardous energy products in the U.S., This safety record has been demonstrated with over 99.99 percent barrel equivalent of liquid hydrocarbons reaching their onshore destinations safely and through consistent declines in casualties and major injuries attributed to pipeline incidents. In fact, pipeline incidents resulting in death or major injury have declined 64 percent in the past 20 years, despite increases in risk exposure measures like population, pipeline mileage, aging infrastructure and volume of product delivered.

Pipeline safety is a shared responsibility for all public and private sector stakeholders. Of the nearly 2.8 million miles of pipeline infrastructure in the U.S., more than 80 percent of the lines belong to local distribution companies that transport natural gas to American homes and businesses. PHMSA's state certification program expands the federal government's capacity to oversee these lines.

### **A. Role of States**

Since 1971, when a national, uniform standard of pipeline safety regulations was implemented, states have had the authority, through PHMSA, to regulate the safety of intrastate pipelines. Sections 60105 and 60106 of title 49 U.S. Code, continue to allow states to assume safety authority through PHMSA for the inspection and enforcement of intrastate pipelines. While states may act as interstate agents for interstate gas transmission and hazardous liquid pipelines, the vast majority of their responsibility is to oversee local distribution gas systems, including the system we are here to discuss today.

PHMSA sets the minimum federal standards for pipeline safety, which the participating states then adopt into their state code and enforce. States are allowed, under Section 60104(c) of title 49 U.S. Code, to adopt more stringent safety standards than the minimum standards PHMSA sets. This allows states to codify and enforce regulations that deal with specific, regional (or local) risks that might not be feasible or cost-beneficial to regulate on the National level. Many states have established safety regulations that are more stringent than the federal regulations.

The MA DPU is PHMSA's certified state partner in the Commonwealth of Massachusetts. Under this certification, the MA DPU is responsible for the inspection and enforcement for all intrastate natural gas distribution and transmission pipelines.

Across our country, PHMSA partners with pipeline safety programs in 48 states (in addition to the District of Columbia and Puerto Rico), which employs approximately 380 full-time inspectors, through certification and agreements for the inspection of the Nation's intrastate gas and hazardous liquid pipelines. PHMSA also has interstate agent agreements with nine states to perform interstate pipeline inspections. State pipeline safety agencies are the first line of defense in protecting much of the American public from pipeline risks on lines that exist primarily where people live and work. State pipeline safety agencies have authority over approximately 80 percent of the total pipeline infrastructure under PHMSA's oversight and have always been a critical component of a sound pipeline oversight program.

In addition to working with individual states, PHMSA works closely with the National Association of Pipeline Safety Representatives (NAPSR), an organization representing state government pipeline safety programs, towards our joint safety mission. PHMSA supports annual and regional NAPSR meetings and members of NAPSR frequently serve on PHMSA's Advisory Committees.

PHMSA has worked with the MA DPU for over 35 years as they have overseen pipeline safety in Massachusetts. PHMSA will continue to provide technical support to the MA DPU through this investigation and with any other technical assistance they may need in the future.

## **B. Role of PHMSA**

There is an inherent risk associated with transporting energy. PHMSA's job is to lessen the risk of energy transportation by pipelines by setting and enforcing federal minimum safety standards for pipeline companies. The agency also promotes safety through education, research, and our partnerships with 48 states, who inspect and enforce regulations for pipelines and underground natural gas storage facilities.

PHMSA is committed to making sure these organizations have the resources and expertise they need to keep our nation's pipelines safe. Jointly with our partner states, PHMSA continuously strives to strengthen oversight, inspection, and enforcement of pipeline transportation through technical assistance programs, grants, training, and outreach.

### *1. Grants*

The financial support that we provide to our state partners through grants is a vital part of our partnerships.

Based on the appropriation level set by Congress, our State Base Grant program<sup>1</sup> reimburses a portion of each of our partner state's program expenses. The grants partially cover the cost of any personnel, equipment, and activities reasonably required for the conduct of the pipeline safety program. Most importantly, PHMSA's grants provide state programs a consistent source of funding to hire and maintain adequate pipeline safety inspectors. PHMSA reviews state performance and conducts grant monitoring to ensure that the funds are used efficiently and effectively.

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<sup>1</sup> The State Base Grant is a formula grant that authorizes awards to state pipeline safety programs under the authority of 49 U.S.C. § 60107 - State Pipeline Safety Grants.

The statute allows PHMSA to reimburse states at a level set by statute and Congressional appropriation—PHMSA can pay no more than 80 percent of a state’s total cost during a given calendar year and we prorate the total appropriation when necessary. For FY 2018, PHMSA awarded \$56 million to participating state programs,<sup>2</sup> including over \$1 million to Massachusetts, which will cover almost 60 percent of their estimated program costs this year.

As the number of miles of pipeline infrastructure continues to grow and as the older pipes age, this grant program is critical to our oversight of our nation’s pipeline systems.

## *2. Training*

PHMSA also supports state programs by providing essential technical training. Our state-of-the-art Training and Qualifications (T&Q) program has full accreditation from the International Association for Continuing Education and Training (IACET).

The T&Q trains an average of 890 state and federal inspectors annually, ensuring that all are current on updated regulations, technology, and best practices. PHMSA offers 58 online computer-based training and on-site courses, including classroom training and hands-on labs, that teach federal and state inspectors how to understand and apply federal regulations and incorporated industry standards. In addition, the Training Center offers technical assistance and nationwide seminars for companies to educate them on the consistent application of the regulations, inspection techniques, and compliance and enforcement procedures.

The core courses that inspectors must take cover topics including PHMSA regulations, overpressure protection, corrosion control, plastic pipe joining, and welding. Five of the seven inspectors in Massachusetts have completed their core training. The remaining two inspectors are new hires and will also take these core classes. In FY 2018, inspectors in Massachusetts completed 32 courses at the T&Q Center, and PHMSA looks forward to continuing to work with the state.

Training is critical to state inspectors. A significant increase in the total number of state and federal inspection personnel, along with the many new employees who replace retirees, have led to increased training needs. Our Training Center is working hard to increase capacity in order to handle these needs. PHMSA has begun to hold “boot camps” to train new inspectors with the basic skills that allow them to begin their work quickly.

Looking ahead, PHMSA’s T&Q Center is committed to developing innovative ways to be more accessible and effective, including the exploration of long-distance proctored classes, curriculum improvements, and more efficient delivery to ensure relevancy.

## *3. Program Evaluations*

Each year, PHMSA evaluates every partner’s compliance with our safety program requirements. Our representatives work with the state officials to review their inspection procedures, records, inspection activities, and enforcement actions.<sup>3</sup> These reviews provide

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<sup>2</sup> All states except Alaska and Hawaii participate in PHMSA’s pipeline safety program.

<sup>3</sup> Sections 60105(e) and 60106(d) of title 49 U.S. Code provide for the monitoring of state pipeline safety programs by PHMSA.

an opportunity for dialogue between PHMSA and the states during which we emphasize the imperative to continually improve pipeline safety, public safety, and the protection of the environment.

This evaluation assesses whether the state is maintaining an effective pipeline safety program in line with federal regulations and provides the basis for determining the state's total point award for the PHMSA pipeline safety grant for the upcoming year.

The assessments consist of two parts. PHMSA first reviews each state's Progress Report to validate that their pipeline safety program is supported by the people, training and other resources necessary to ensure pipeline safety. The progress report also summarizes their annual inspection activities conducted on the regulated companies within each state for the previous year.

Second, PHMSA reviews the annual Progress Report documents submitted by the state for accuracy, reviews the pipeline program inspection procedures and records, and observes an on-site inspection of a pipeline company conducted by state staff.

As part of this annual program evaluation process, PHMSA discusses state metrics developed by PHMSA and the National Association of Pipeline Safety Representatives. These metrics track the state's damage prevention program, inspection activity, inspector qualification, leak management, enforcement, and incident investigation.

These evaluations and the review of metrics are an opportunity for discussion between PHMSA and state pipeline safety program managers about potential safety program improvements. PHMSA also publishes each state's progress on these metrics online<sup>4</sup> so that the state programs can proactively review their metrics and act to ensure positive performance trends.

The strength of state pipeline safety programs directly impacts the integrity of our nation's pipelines, especially the local distribution systems.

At the recent 2018 NAPS National Meeting, PHMSA senior leadership spoke to all state pipeline safety programs and challenged the states to strive for excellence. Specifically, PHMSA encouraged state leaders to be diligent in their oversight, especially in light of the Massachusetts accident. State pipeline safety authorities, just as we at PHMSA, must vigorously inspect and enforce against the pipeline safety regulations and take prompt action where needed.

### **C. Role of Gas Companies**

While PHMSA and our state partners are dedicated to a goal of zero incidents, a safe pipeline system requires the active participation of all stakeholders. Thus, the onus of maintaining a safe pipeline system is on the companies that own and operate the systems.

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<sup>4</sup> <http://primis.phmsa.dot.gov/comm/States.htm>

PHMSA expects companies to know their systems' risks and needs, including the risks of the systems' design, environment, and operations. Companies must address these risks promptly. Accidents like what occurred here in Massachusetts are unacceptable.

I want to recognize and thank the NTSB for their outstanding professionalism and dedication while leading the tragic Columbia Gas of Massachusetts accident investigation. In its preliminary report, the NTSB<sup>5</sup> noted that the overpressurization that caused the explosions and fires occurred during a pipeline replacement project. While we applaud the company's intent to replace aged and vulnerable cast iron lines, the project's work plan did not account for sensing lines of gas regulators in that part of the system.

This tragedy and its aftermath have demonstrated how critical it is for companies to thoroughly plan and safely execute all their work involving design, construction, operation and maintenance of any replacement activity. Pipeline operators must understand that they have a responsibility to demand excellence from the contractors and subcontractors they hire to work on their systems.

We will support the MA DPU and the citizens of Massachusetts as they work to recover from this tragedy. At this point, it also appears that this accident was not caused by a gap in either federal or state pipeline safety regulations—this was an issue of company quality control. While we might wish it otherwise, regulations alone will not prevent pipeline incidents and accidents. To prevent future accidents like this one, companies must focus on continuous improvement and nurturing a good safety culture. Such aggressiveness is essential if we – all of us, together – hope to create a pervasive culture of safety – one that looks upon even near-misses as unacceptable failures, like air traffic controllers have done for a very long time. And I choose that occupation because they are one of few endeavors with a smaller incident rate than pipeline operations.

### **III. CONTINUOUS IMPROVEMENT/SAFETY MANAGEMENT AND CULTURE**

Pipeline operators must continue to use risk-informed approaches, such as integrity management, to ensure they are adequately identifying and addressing the greatest risks to their systems. This includes efforts to conduct integrity assessments and apply lessons learned across an entire system. But regulations are not the only resource PHMSA can use to improve pipeline safety.

The common thread that runs throughout every aspect of PHMSA's safety mission is a Safety Management Systems (or SMS) approach. SMS looks to find gaps, address them promptly, and prevent pipeline accidents and incidents from ever occurring as opposed to reacting. To be effective, SMS requires PHMSA to move beyond the role of being just a regulator – to encourage operators to identify and target their system risks, address those risks, and encourage a company-wide culture that makes safety the number one priority, always.

Pipeline operators are only as good as their worst contractor. For SMS to permeate through all levels and areas of the pipeline industry, we need ways to share and analyze data, allowing all of us to see emerging trends and addressing problems before they result in accidents. We all share the same goal of zero pipeline incidents, and I believe that the more we collaborate, the safer our nation's pipelines will be.

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<sup>5</sup> <https://ntsb.gov/investigations/AccidentReports/Reports/PLD18MR003-preliminary-report.pdf>

PHMSA's expectation of companies, and the industries that support them, is for them to know their systems' risks and needs. Periodic inspections by PHMSA or its state partners will not yield the kind of intimate knowledge required to anticipate all of a system's vulnerabilities.

PHMSA challenges companies by encouraging them to not wait for inspections, or for new regulations, to make safety improvements. It is folly to think that further improvement will occur if companies are either passive or complacent. Companies work with these systems every day and they must be more aggressive than to wait for PHMSA or states to identify potential problems.

Under a well-designed SMS, companies can address an issue or gap before it becomes a problem, because some problems become accidents, and some accidents become tragedies.

An aggressive approach is essential if we collectively advance to create a pervasive culture of safety – one that looks upon even the smallest issue or near-miss as unacceptable.

Our commitment to SMS goes beyond asking companies to make cultural changes; we are implementing SMS throughout PHMSA as well. PHMSA is incorporating a focus on safety into our everyday operations, refocusing on our communications across the agency, and reexamining how we can do business even better.

An element of the PHMSA SMS is our work with our state partners to improve our training support. As I said before, PHMSA's T&Q Center is working to provide an effective and efficient distance delivery system that does not sacrifice the high quality of our training curricula. PHMSA's goal is to make it easier for state inspectors to access the courses they need quickly and at a lower cost.

PHMSA has an active mentoring program for state inspectors, and we continue to encourage states to participate in the program to improve inspector skillsets and benefit from feedback from experienced inspectors. In addition, last year PHMSA employees spent well over 7,600 hours working directly with state pipeline safety programs supporting pipeline safety.

#### **IV. PHMSA SUPPORTS MODERNIZATION**

Our Nation is growing rapidly. Increases in domestic energy production are placing more demand on all of the nation's transportation modes and poising America to become the world's largest energy producer. Technology advancements quickly change how the industry uses the transportation system. In addition, it is projected that another 70 million more people will live in America in 2050, placing even more demand on the transportation network. All of these changes present new safety challenges, as well as new opportunities to improve the safety and efficiency of our Nation's hazmat transportation system for today and the future.

PHMSA believes that many of the next steps in safety will come from encouraging new technologies and prioritizing innovative solutions to safety challenges. We support

modernization in multiple ways, including funding research and looking at new ways to conduct business.

If done correctly, upgrading our Nation's pipeline infrastructure is one of the surest ways to foster even higher levels of pipeline safety. That is why DOT and PHMSA issued a Call to Action in 2011 to accelerate the repair, rehabilitation, and replacement of the aged and outmoded pipeline that pose the highest risk across the country.

Thanks to increased state and federal safety initiatives and pipeline companies' replacement efforts, the miles of active cast or wrought iron pipelines has declined significantly in recent years. To date, 21 states and one territory have completely eliminated their inventory of cast or wrought iron natural gas distribution lines.<sup>6</sup> In fact, cast or wrought iron gas distribution pipelines make up only 2 percent of distribution mains in our country today,<sup>7</sup> and 41 states, including the District of Columbia, have specific rate mechanisms that foster accelerated replacement of pipelines no longer fit for service.

PHMSA considers it our responsibility to provide technical support to state and federal agencies that have siting or route designation authority, to prioritize inspections related to the engineering and construction of major new pipeline projects, and to the support of projects that are designed to repair, rebuild, and expand infrastructure.

We're also committed to undertake the research that will develop new technologies and new solutions to pipeline safety challenges. Our R&D program works to apply research, strengthen consensus standards, and inform regulatory activities. Our research is focused on solving discrete, current problems that have an immediate effect on overall safety.

Since 2002, PHMSA has funded 270 projects designed to prevent excavation damage to pipelines, identify and minimize leaks, and detect defects in pipelines well before they fail. In September, PHMSA awarded more than \$3.8 million to 11 universities via our Competitive Academic Agreement Program (CAAP). The 13 research projects funded by CAAP this year address a number of consensus standards, rulemakings, mandates, and recommendations.

The PIPES Act of 2016<sup>8</sup> required the Secretary to establish a Voluntary Information-sharing System (VIS) Workgroup (WG) to study information-sharing systems for the pipeline industry. This group will provide recommendations to the Secretary regarding whether a sharing system is needed, ways to encourage the exchange of inspection information, and best practices for the protection of proprietary and security-sensitive information. The VIS WG's membership includes representatives from PHMSA, industry stakeholders, safety advocacy groups, research institutions, state public utility commissions, state pipeline safety inspectors, labor representatives, and other entities. The Workgroup is on schedule to present their recommendations to Secretary Chao before the end of the year.

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<sup>6</sup> Alaska, Arizona, Colorado, Hawaii, Iowa, Idaho, Montana, New Mexico, North Carolina, North Dakota, Nevada, Oklahoma, Oregon, Puerto Rico, South Carolina, South Dakota, Utah, Vermont, Washington, Wisconsin, and Wyoming

<sup>7</sup> [https://opsweb.phmsa.dot.gov/pipeline\\_replacement/cast\\_iron\\_inventory.asp](https://opsweb.phmsa.dot.gov/pipeline_replacement/cast_iron_inventory.asp)

<sup>8</sup> Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016, Public Law 114-183



## V. CONCLUSION

Safety is the highest priority for the U.S. Department of Transportation and for PHMSA and we look forward to continuing to work with Congress to prevent future natural gas distribution pipeline accidents like what recently occurred in Massachusetts. Pipeline companies must apply lessons learned from this accident to their own programs and future operations. PHMSA holds companies accountable for the safe operation of their pipelines, and will continue its efforts to ensure that *all* stakeholders uphold the highest possible safety standards.

As the number of miles of new pipe being buried across the country continues to grow, the need for strong state pipeline safety programs is ever more critical to promote transportation system safety in every corner of our great nation. States' input and experience is critical in this effort as PHMSA sets public policy, strategically allocates resources, and moves forward with effective new regulations.

Thank you again for inviting me to today's field hearing. I look forward to your questions.