Committee on Transportation and Infrastructure
U.S. House of Representatives
Washington, DC 20515

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March 29, 2019

SUMMARY OF SUBJECT MATTER

TO: Members, Subcommittee on Railroads, Pipelines, and Hazardous Materials
FROM: Staff, Subcommittee on Railroads, Pipelines, and Hazardous Materials
RE: Subcommittee Hearing on "Pipeline Safety: Reviewing the Status of Mandates and Examining Additional Safety Needs."

PURPOSE

The Subcommittee on Railroads, Pipelines, and Hazardous Materials will meet on Tuesday, April 2, 2019, at 10:00 a.m. in HVC 210, Capitol Visitor Center, to receive testimony related to "Pipeline Safety: Reviewing the Status of Mandates and Examining Additional Safety Needs." The purpose of the hearing is to consider the status of safety rulemakings that Congress previously has mandated, as well as to examine the safety of the Nation's gas and hazardous liquid pipelines and facilities and how to respond to gaps or needs that exist. The Subcommittee will receive testimony from the Pipeline and Hazardous Materials Safety Administration; the National Transportation Safety Board; Accufacts, Inc.; the American Petroleum Institute; the Association of Oil Pipe Lines; the Environmental Defense Fund; the International Association of Fire Chiefs; and, the Pipeline Safety Trust.

BACKGROUND

About the Agency

The Pipeline and Hazardous Materials Safety Administration (PHMSA) was created under the *Norman Y. Mineta Research and Special Programs Improvement Act of 2004* (P.L. 108-426) ("2004 Act"). Prior to enactment of the 2004 Act, the Department of Transportation's (DOT) Research and Special Programs Administration administered the DOT's pipeline and hazardous materials safety programs. PHMSA's mission 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 2004 Act established that PHMSA "shall consider the assignment and maintenance of safety as the highest priority..." PHMSA is charged with the safe and secure movement of over one million daily shipments of hazardous materials by all modes of transportation. PHMSA oversees the nation's 2.7 million miles[1] of gas and hazardous liquid pipelines, which account for the transportation of 65 percent of the energy commodities consumed in the United States.

The first statute regulating pipeline safety was the *Natural Gas Pipeline Safety Act of 1968* (P.L. 90-481), which Congress amended in 1976 (P.L. 94-477). Congress added hazardous liquid pipelines to the statute in the Pipeline Safety Act of 1970 (P.L. 96-129). Subsequent bills included the *Pipeline Safety Reauthorization Act of 1988* (P.L. 100-561), the *Pipeline Safety Act of 1992* (P.L. 102-508), the *Accountable Pipeline Safety and Partnership Act of 1996* (P.L. 104-304), the *Pipeline Safety Improvement Act of 2002* (P.L. 107-355), the *Norman Y. Mineta Research and Special Programs Improvement Act of 2004* (P.L. 108-426), the *Pipeline Inspection, Protection, Enforcement and Safety Act of 2006* (P.L. 109-468), the *Pipelines Safety, Regulatory Certainty, and Job Creation Act of 2011* (P.L. 112-90), and the *Protecting our Infrastructure of Pipelines and Enhancing Safety Act of 2016* (P.L. 114-183). These authorizing Acts provide for Federal safety regulation of facilities used in the transportation of gases and hazardous liquids by pipeline. The current authorization expires on September 30, 2019.

Pipeline Safety Framework

Safety regulations differ depending on the nature of the pipeline and the commodity that is moving through it. PHMSA's regulations govern pipelines and facilities that transport natural gas (49 CFR 192) separately from those that transport hazardous liquid (49 CFR 195). Additionally, the pipelines and facilities used to transport natural gas and hazardous liquids vary in operating pressures, diameter size, intended purpose, and proximity to populated areas. These include:

> *Distribution pipelines* transport natural gas to commercial and residential end-users. Gas distribution pipelines tend to be smaller in diameter and operate at lower pressures. PHMSA estimates there are 2.23 million miles of gas distribution lines, much of which are intrastate pipelines. There are no hazardous liquid distribution pipelines.
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> *Transmission pipelines* transport natural gas from treatment and processing facilities to bulk customers, storage facilities, and local gas distribution networks. Transmission pipelines can range in size from several inches to several feet in diameter and are designed to operate from relatively low pressures to high pressures. These lines can operate within a single State or span hundreds of miles, crossing one or more State lines. PHMSA estimates there are 300,655 miles of interstate and intrastate gas transmission lines.
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> *Gathering lines* transport natural gas from the production site to a central collection point. Historically, gathering lines were built in lower populated areas, had smaller diameters than transmission lines, and operated at pressures and flow lower than transmission lines. However, as new gas development occurs around the country, producers are installing new gathering systems in higher populated areas and building larger diameter and higher pressure

[1] There are an estimated 2,757,650 miles of pipelines under PHMSA's jurisdiction, of which 2,223,212 are for distribution of natural gas, 300,655 for transmission of natural gas, an estimated 18,380 for gathering of natural gas, and 215,628 for hazardous liquids.

gathering lines.[2] PHMSA currently regulates 18,380 miles of gas gathering lines, which leaves an estimated 438,884 miles of gas gathering lines unregulated.[3] PHMSA does not maintain records on incidents involving these unregulated gathering lines, nor are the lines required to be regularly inspected, built to specified standards, or required to have emergency response plans in place. To address this safety risk, PHMSA has proposed regulations to collect information and set Federal minimum standards on certain gathering lines.[4]

Hazardous liquid pipelines transport liquid petroleum from sources of origin to refineries and chemical plants, and in some cases to storage facilities or distribution terminals. According to PHMSA, hazardous liquids traverse the United States through 215,628 miles of hazardous liquid pipelines, of which an estimated 4,000 miles[5] are gathering lines. Approximately 30,000-40,000 miles of onshore hazardous liquid gathering lines are unregulated.[6]

Liquefied natural gas (LNG) facilities are used for converting, transporting, or storing LNG. There are several Federal agencies involved in the regulation of LNG.[7] Historically, PHMSA has regulated peakshaving facilities[8] and satellite facilities[9] where LNG has been used to manage capacity during times of peak demand. PHMSA also regulates import terminals.[10] However, market dynamics have changed such that there has been a rapid growth in export terminals. At these terminals, large quantities of natural gas are liquefied and stored for transport aboard specialized tanker ships for export markets. PHMSA has announced plans to fully update its LNG regulations to address these changes in the industry and to comply with a 2016 mandate from Congress.[11] The agency is drafting a Notice of Proposed Rulemaking.

PHMSA's Pipeline Safety Oversight

PHMSA's pipeline safety functions include developing, issuing, and enforcing regulations for the safe transportation of natural gas (include liquefying natural gas) and hazardous liquids by pipeline. PHMSA sets Federal minimum safety standards. The agency's regulatory programs are focused on the design, construction, operation, and maintenance or abandonment of pipeline facilities, and in the construction, operation, and maintenance of liquefied natural gas facilities. The

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[2] Pipeline and Hazardous Materials Safety Administration, Notice of Proposed Rulemaking, Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines, PHMSA-2011-0023, April 8, 2016.
[3] Pipeline and Hazardous Materials Safety Administration, Safety of Gas Gathering Pipelines Presentation, Gas Pipeline Advisory Committee Meeting January 8-9, 2019 (Version 12/21/2019).
https://primis.phmsa.dot.gov/meetings/FilGet.mtg?fil=1029.
[4] *Id.*
[5] Pipeline and Hazardous Materials Safety Administration, Notice of Proposed Rulemaking, Pipeline Safety: Safety of Hazardous Liquid Pipelines, PHMSA-2010-0229, October 13, 2015.
[6] *Id.*
[7] PHMSA generally regulates LNG facilities if the facility either receives from or delivers to a pipeline regulated by PHMSA. *See* 49 CFR 193.2001.
[8] These facilities receive natural gas from gas transmission pipelines during warm months, liquefy the gas, and store the liquefied gas until cold weather when it is needed, and are located primarily in the Northeast.
[9] These facilities have storage and vaporization capabilities, but do not liquefy gas. Natural gas is often trucked to these facilities and stored until the energy is needed, at which time it is put into a gas pipeline.
[10] LNG tanker ships are used to supply marine import terminals with LNG, where it is then transferred into large storage tanks to be withdrawn, vaporized, and supplied to gas transmission pipelines.
[11] Office of Information and Regulatory Affairs, Office of Management and Budget, Executive Office of the President. https://www.reginfo.gov/public/do/eAgendaViewRule?pubId=201810&RIN=2137-AF45.

agency only has jurisdiction over transportation-related facilities; it does not have jurisdiction over drilling or production facilities.

PHMSA carries out its regulatory functions through its Office of Pipeline Safety (OPS), whose purpose is to carry out a national program to ensure the safe, reliable, and environmentally-sound operation of the nation's natural gas and hazardous liquid pipeline transportation system.

PHMSA has long-experienced difficulty in recruiting and maintaining an inspection workforce capable of meeting PHMSA's oversight needs, as PHMSA often competes against the regulated industry for personnel. Congress has previously increased the number of Federal pipeline safety inspectors and directed the Office of Inspector General to study PHMSA's continued staffing needs and potential solutions. In Fiscal Year 2018, PHMSA received funding to support 308 OPS staff positions. As of September 2017, 292 of those positions were filled, of which 205 performed inspection and enforcement functions.[12]

PHMSA's regulations also address the workforce to help ensure their actions maintain the safety of the Nation's pipelines. For instance, PHMSA requires pipeline operators and their contractors to conduct drug and alcohol testing programs; however, some pipeline workers performing safety-sensitive functions on master meter systems and pipeline systems that transport only petroleum gas or petroleum gas/air mixtures are exempt from these programs. Pipeline operators based in Canada or Mexico who maintain and control hundreds of miles of pipelines in the United States are also exempt. In addition, PHMSA regulations require operators to develop and adopt qualification programs to ensure that those performing certain operations and maintenance tasks are qualified to do so.

When violations of PHMSA's regulations occur, the agency has several enforcement mechanisms it can use to require pipeline operators to regain compliance with the regulations. These tools include the issuance of a warning letter,[13] a notice of probable violation,[14] or a corrective action order.[15] The agency may issue fines for non-compliance. In 2018, PHMSA initiated 199 enforcement cases[16] related to a range of violations, such as failure to comply with Operator Qualification programs, emergency response plans, and integrity management program regulations, among others.

While PHMSA regulations are focused on safety, there are also concerns for pipeline cyber security vulnerabilities.[17] PHMSA has signed an annex to its memorandum of understanding with

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[12] Pipeline and Hazardous Materials Safety Administration, Report to Congress on the Office of Pipeline Safety's FY 2017 Actual Staffing and FY 2018 Hiring Plan, September 5, 2018.

[13] *See* 49 CFR 190.205; this letter notifies the operator of alleged violations and directs them to correct the violation or be subject to additional enforcement action.

[14] *See* 49 CFR 190.207; these notices, commonly issued after routine inspections, incident investigations, and other activity, allege specific regulatory violations and propose remedial action or civil penalties.

[15] *See* 49 CFR 190.233; these orders are issued when a particular situation represents a serious hazard to life, property, or the environment and directs certain actions to be taken, up to and including shutdown of the pipeline system.

[16] Pipeline and Hazardous Materials Administration, Summary of Enforcement Activity – Nationwide. https://primis.phmsa.dot.gov/comm/reports/enforce/EnfHome.html?nocache=2062.

[17] Statement for the Record, Director of National Intelligence Dan Coats, Senate Select Committee on Intelligence, January 29, 2019. *Referencing* Worldwide Threat Assessment of the US Intelligence Community (2019): "China has the ability to launch cyber attacks that cause localized, temporary disruptive effects on critical infrastructure—such as disruption of a natural gas pipeline for days to weeks—in the United States." https://www.dni.gov/files/ODNI/documents/2019-ATA-SFR---SSCI.pdf.

the Transportation Security Administration (TSA) that identifies TSA as the lead entity for pipeline security and PHMSA as responsible for administering a national program of safety in natural gas and hazardous liquid pipeline transportation, including identifying pipeline safety concerns and developing uniform safety standards. In a recent report, the Government Accountability Office (GAO) was critical of TSA's efforts to protect these assets, identifying significant staffing limitations exist and that TSA is unable to ensure that its voluntary Pipeline Security Guidelines reflect the latest known standards and best practices.[18]

States' Pipeline Safety Oversight

PHMSA supports this regulatory work by authorizing States to assume certain aspects of pipeline safety for intrastate gas pipelines, hazardous liquid pipelines, and underground natural gas storage through certifications and agreements with PHMSA under 49 U.S.C. §§ 60105 and 60106(a). The agency also authorizes States with certifications to participate in the oversight of interstate pipeline transportation through agreements under 49 U.S.C. § 60106(b).

To conduct inspection and enforcement of intrastate gas and hazardous liquid pipelines and facilities, each State must annually certify their pipeline safety program by demonstrating to the Secretary that it: has adopted, or is taking steps to adopt, the Federal standards; is enforcing each standard through inspections; and is encouraging and promoting the establishment of damage prevention programs. Each annual certification must include a report that contains: all accidents or incidents reported to the State over the prior 12 months involving a fatality, personal injury requiring hospitalization, or property damage or loss of more than $50,000, or any other accident the State considers significant, and a summary of the investigation by the State of the cause and circumstances surrounding the accident or incident. The report also must include the record maintenance, reporting, and inspection practices conducted by the State to enforce compliance with Federal safety standards, including the number of inspections of pipeline facilities the authority made during the prior 12 months.[19]

States with certified pipeline safety programs may impose additional standards for intrastate pipelines and facilities so long as they are compatible with the minimum Federal standards issued by PHMSA. Separate certification is necessary for gas and hazardous liquid safety programs. In calendar year 2019, 51 State agencies[20] have certified natural gas safety programs, and 15 States agencies[21] have certified hazardous liquid safety programs. If States did not participate in the pipeline safety or underground natural gas storage programs, the inspection and enforcement of these intrastate pipeline and underground natural gas storage facilities would be PHMSA's responsibility.

A State that does not satisfy the criteria for certification may enter into an agreement[22] to undertake certain aspects of the pipeline or underground natural gas safety program for intrastate pipeline facilities on behalf of PHMSA. While this agreement allows a State to perform inspections,

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[18] Government Accountability Office, Critical Infrastructure Protection, Actions Needed to Address Significant Weaknesses in TSA's Pipeline Security Program Management, GAO-19-48, December 2018.
[19] 49 U.S.C. § 60105.
[20] Pipeline and Hazardous Materials Safety Administration, 2019 State Program Certification Agreement Status (Appendix F). https://www.phmsa.dot.gov/working-phmsa/state-programs/2019-appendix-f-state-program-certification-agreement-status-pdf.
[21] *Id.*
[22] 49 U.S.C. § 60106(a).

probable violations are reported to PHMSA for enforcement action. In calendar year 2019, two state agencies have such natural gas agreements with PHMSA.[23]

The Secretary also is authorized to enter into an interstate agent agreement with a State with a certified pipeline safety program, allowing the State to participate in the oversight of interstate pipeline transportation.[24] For such an agreement, the Secretary must determine that: the agreement is consistent with the Federal inspection program and Federal safety policies; the State's interstate participation would not adversely affect its intrastate oversight responsibilities; the State meets federal minimum One-Call standards and is carrying-out a program demonstrated to promote preparedness and risk prevention activities; and the actions planned under the agreement would not impede interstate commerce or impede safety. The agency historically has used interstate agent agreements to supplement its Federal inspector workforce. State pipeline safety and underground natural gas storage programs provide a local presence for protecting the public from pipeline and underground natural gas storage incidents. In calendar year 2019, eight State agencies[25] acted as certified interstate agents for natural gas pipelines, and five were certified interstate agents for hazardous liquid pipelines.[26]

To support these State efforts, PHMSA administers grants providing up to 80 percent of the total cost of the personnel, equipment, and activities reasonably required for a State to carry-out certified pipeline safety programs or an agreement. Subject to annual appropriations, the actual reimbursement rate depends upon the availability of appropriated funds and the performance of a State's pipeline safety program.

Pipeline Safety Incidents

Despite this oversight, pipeline incidents resulting in injuries and fatalities continue to occur. In 2018 alone, PHMSA reported 633 pipeline incidents, more than half of which were designated as serious or significant.[27] These incidents resulted in eight fatalities, 92 injuries, and nearly $1 billion in damage. From 1999-2018, PHMSA reported 11,992 pipeline incidents, which resulted in 317 deaths, 1,302 injuries, and more than $8.1 billion in damage. Incidents have increased nearly two-fold from 1999 to 2018.[28]

Among last year's fatal incidents was the over-pressurization event on September 13, 2018, involving the Columbia Gas distribution system in Merrimack Valley, Massachusetts. High-pressure natural gas was released into the low-pressure gas distribution system, resulting in a series of explosions and fires that killed one person, sent 21 others, including two firefighters, to the hospital,

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[23] Pipeline and Hazardous Materials Safety Administration, 2019 State Program Certification Agreement Status (Appendix F). https://www.phmsa.dot.gov/working-phmsa/state-programs/2019-appendix-f-state-program-certification-agreement-status-pdf.

[24] 49 U.S.C. § 60106(b).

[25] Pipeline and Hazardous Materials Safety Administration, 2019 State Program Certification Agreement Status (Appendix F). https://www.phmsa.dot.gov/working-phmsa/state-programs/2019-appendix-f-state-program-certification-agreement-status-pdf.

[26] *Id.*

[27] In 2018, 40 serious incidents and 286 significant incidents occurred. Serious incidents are those that include a fatality or injury requiring in-patient hospitalization. Significant incidents are those that include a fatality or injury requiring in-patient hospitalization, $50,000 or more in total costs, highly volatile liquid releases of five barrels or more or other liquid release of 50 barrels or more, or liquid releases resulting in an unintentional fire or explosion.

[28] Pipeline and Hazardous Materials Safety Administration, Pipeline Incident 20 Year Trends. https://cms.phmsa.dot.gov/data-and-statistics/pipeline/pipeline-incident-20-year-trends

and damaged 131 structures in the city of Lawrence and the towns of Andover and North Andover. In its preliminary report, the National Transportation Safety Board (NTSB) reported that a contracted crew was performing a Columbia Gas– developed and –approved pipe replacement project at a nearby intersection, working on a tie-in project of a new plastic distribution main and the abandonment of a cast-iron distribution main.[29] The Columbia Gas-designed plan did not consider that the cast-iron main to be abandoned had regulator sensing lines used to detect pressure in the system and to provide input to the regulators that control the system pressure. Once abandoned, the section containing the sensing lines began to lose pressure, causing the regulators to open further to increase pressure in the distribution system, eventually opening fully. While the Columbia Gas monitoring center in Columbus, Ohio received high-pressure alarms, it had no remote-control capability to close the valves; the valves were closed more than three hours after the first alarm.

The NTSB identified that neither Massachusetts nor Columbia Gas had a policy to require a registered professional engineer to develop or review public utility engineering plans,[30] and that the Commonwealth's Meter and Regulation department that has control of line information was not required to review the project.[31] In response to this incident, the NTSB recommended that the Commonwealth of Massachusetts eliminate the professional engineer licensure exemption for public utility work and require a professional engineer's seal on public utility engineering drawings. The NTSB recommended that Columbia Gas's parent company, NiSource, Inc., revise the engineering plan and constructability review process to ensure all applicable departments review construction documents and that the documents be sealed by a professional engineer; ensure records and documentation of the natural gas systems are traceable, reliable, and complete; apply management of change processes to all changes to adequately identify system threats;[32] and develop and implement additional controls to mitigate risks.[33]

In a separate event taking place on August 9, 2018, a gas gathering line owned by Targa Pipeline Mid-Continent WestTex caused an explosion to a mobile home structure in rural Midland County, Texas. After the structure exploded, first responders attempted to put out the blaze, but it continued to relight. Targa employees were able to isolate the gathering line by closing the valves, after which the fire lost fuel and burned out. Targa's third-party investigators determined that the coal tar coating and steel pipe wall had been compromised with a hole approximately 3/8 inch by

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[29] National Transportation Safety Board, Preliminary Report, Over-pressure of a Columbia Gas of Massachusetts Low-pressure Natural Gas Distribution System, Merrimack Valley, Massachusetts, PLD18MR003, September 13, 2018. https://www.ntsb.gov/investigations/AccidentReports/Reports/PLD18MR003-preliminary-report.pdf.

[30] Federal law and PHMSA's regulations do not require review and approval of plans by a professional engineer. At the time of the incident, the Commonwealth of Massachusetts had a professional engineer licensing exemption for public utilities. On December 31, 2018, the Governor of Massachusetts signed into law a requirement that all natural gas work that might pose a material risk to the public be reviewed and approved by a certified professional engineer. See Mass. Gen. L. c. 112 § 81R; Mass Gen. L. c. 164 § 148.

[31] National Transportation Safety Board, Safety Recommendation Report, Natural Gas Distribution System Project Development and Review (Urgent), adopted November 14, 2018. https://www.ntsb.gov/investigations/AccidentReports/Reports/PSR1802.pdf.

[32] Management of Change is a central tenant of safety management systems and was incorporated into API's Recommended Practice (RP) 1173 in July 2015. For more information, *see* https://pipelinesms.org/.

[33] National Transportation Safety Board, Safety Recommendation Report, Natural Gas Distribution System Project Development and Review (Urgent), adopted November 14, 2018. https://www.ntsb.gov/investigations/AccidentReports/Reports/PSR1802.pdf.

5/8 inch and had been leaking for an undetermined length of time. Four people were injured and one later died.

Another incident occurred on February 23, 2018. Over a series of two days, three homes in a neighborhood served by the same 2-inch wrapped steel Atmos Energy pipeline experienced gas-related events, including an explosion that killed a 12-year old child and injured the other four family members. The preliminary report from the NTSB noted that due to the nature and number of leaks discovered in the neighborhood, more than 300 residences were evacuated.[34] The operator identified multiple leaks in the neighborhood and had performed various repair work prior to and during the days the three events occurred. NTSB investigators identified three sections of the pipe that failed a pressure test and noted that the pipe located behind the home that exploded was cracked.

PHMSA's data shows that in 2017, there were 648 incidents that resulted in 19 fatalities and 34 injuries.[35] The 2017 data includes the August 2, 2017, natural gas explosion that occurred at a school in Minneapolis, Minnesota that resulted in the death of two individuals.[36] In 2016, there were 633 incidents that resulted in 16 fatalities and 87 injuries.[37]

Already in 2019, the NTSB has begun investigating a natural gas line strike and fire. On February 6, 2019, a third-party-contractor was excavating for fiber optic conduit installation in San Francisco, California when the contractor struck a Pacific Gas & Electric (PG&E) 2-inch natural gas main, releasing gas and igniting a fire.[38] Fortunately, there were no injuries or fatalities, but about 100 people were evacuated and the fire burned for more than two hours until PG&E personnel could isolate and shut down the gas line, removing the fuel source. The NTSB noted in the preliminary report that the investigation will focus on the third-party contractor's preparedness and qualifications to perform the excavation work and the execution of PG&E and local first responders' emergency response plans.

Mandates to Improve Safety Remain Unmet

In response to other incidents, Congress previously has sought to improve pipeline safety by mandating that PHMSA promulgate new regulations designed to help prevent incidents before they occur. Years later, many of those mandates remain unmet.

For instance, in response to major pipeline incidents, including a massive Enbridge oil pipeline spill in Marshall, Michigan, and a fatal Pacific Gas & Electric natural gas explosion in San Bruno, California, in 2011 Congress enacted the *Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011* (P.L. 112-90), which mandated several safety improvements, including:

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[34] National Transportation Safety Board Preliminary Report, February 23, 2018.
https://www.ntsb.gov/investigations/AccidentReports/Reports/PLD18FR002-preliminary.pdf.
[35] Pipeline and Hazardous Materials Safety Administration, Pipeline Incidents (2017).
https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages.
[36] National Transportation Safety Board Preliminary Report, August 2, 2017.
https://www.ntsb.gov/investigations/AccidentReports/Pages/DCA17MP007-prelim-report.aspx.
[37] Pipeline and Hazardous Materials Safety Administration, Pipeline Incidents (2016).
https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages.
[38] National Transportation Safety Board Preliminary Report, February 6, 2019.
https://www.ntsb.gov/investigations/AccidentReports/Reports/PLD19MR001-Preliminary.pdf

- *Valves (PSA11 Sec. 4).* PHMSA must require pipeline operators to install automatic and remote-controlled shut-off valves, or equivalent technology, on hazardous liquid and natural gas transmission pipeline facilities constructed or entirely replaced after a Final Rule implementing this mandate is issued;

- *Integrity Management Plans (PSA11 Sec. 5(a)-(f)).* Requires pipeline operators to expand their integrity management program (pipeline inspection and repair program) beyond high-consequence areas (HCAs). HCAs include commercially navigable waterways, high population areas, other populated areas, and unusually sensitive areas;

- *Leak Detection (PSA11 Sec. 8(b)).* Requires pipeline operators to install leak detection systems, where practicable, and requires PHMSA to establish performance standards for the capability of such systems to detect leaks;[39]

- *Offshore Liquid Gathering Lines (PSA11 Sec. 21(c)).* Requires the Secretary to regulate offshore liquid gathering lines; and

- *Grandfathered Pipe (PSA11 Sec. 7(a)-(b)).* Requires pipeline owners and operators to verify maximum allowable operating pressure,[40] report exceedances of maximum allowable operating pressure, and requires PHMSA to issue regulations for conducting tests to confirm the material strength of previously untested natural gas transmission pipelines located in HCAs and operating at a pressure greater than 30 percent of specified minimum yield strength.

PHMSA has not implemented these mandates. According to PHMSA, the agency currently has three ongoing rulemakings that cover these outstanding mandates from the 2011 Act: "Safety of On-Shore Hazardous Liquid Pipelines," "Safety of Gas Transmission Pipelines," and "Amendments to Parts 192 and 195 to Require Valve Installation and Minimum Rupture Detection Standards." PHMSA's most recent schedule projects that it will issue Final Rules on June 18, 2019 and July 2, 2019, and a Notice of Proposed Rulemaking on August 7, 2019, respectively, for those proceedings– multiple years past the deadline that Congress mandated. Moreover, the latter two rulemakings have been under review by the Office the Secretary (OST) since October and August of 2018, respectively. After seven months of review at the OST, the "Safety of On-Shore Hazardous Liquid Pipelines" rule was sent to the Office of Management and Budget on March 19, 2019.

Then in 2016, Congress enacted the *Protecting our Infrastructure of Pipelines and Enhancing Safety* (PIPES) *Act of 2016*, which required additional rulemakings and other safety mandates, including:

[39] Leak detection systems protect the public and environment from consequences of a pipeline failure by automatically alerting the operator when a leak occurs. Pipeline operators are then able to take appropriate action to minimize the spill. There are different types of systems; some measure the product volume at the start of a segment and compare it with the volume at the end, while others are more complex and monitor operating conditions. Additionally, the efficacy of systems relies on the sensitivity capabilities so that small leaks can be detected.

[40] Maximum Allowable Operating Pressure (MAOP) is a defined term, meaning the maximum pressure at which a pipeline or segment of a pipeline may be operated under the regulations. For maximum operating pressure of gas pipelines *see* 49 CFR 192.3 and for hazardous liquid pipelines, *see* 49 CFR 195.406.

- *Natural Gas and Hazardous Liquid Integrity Management Reviews (PIPES Act Sec. 4 and 5).* These sections require the GAO to report to Congress on how natural gas integrity management programs and the hazardous liquid pipeline facility integrity management programs have improved the safety of natural gas transmission and hazardous liquid pipeline facilities, respectively. GAO has not completed these two reports because PHMSA has not completed Final Rules required by the 2011 Act for the "Safety of Gas Transmission and Gathering Lines" or the "Safety of On-Shore Hazardous Liquid Pipelines."

- *Technical Safety Standards Committees (PIPES Act Sec. 6(b)).* Requires the Secretary to fill all vacancies on the Technical Pipeline Safety Standards Committees within 90 days of the date of enactment, and within 60 days of any future vacancies. Currently, there are two government representative vacancies created on 12/2016 and 8/2018 on the Liquid Pipeline Advisory Committee, and one government representative vacancy created on 10/2018 on the Gas Pipeline Advisory Committee.

- *Underground Natural Gas Storage Facilities (PIPES Act Sec. 12(b)-(c)).* Requires the Secretary to issue minimum safety standards for underground natural gas storage facilities while allowing States to go beyond Federal regulations for regulating intrastate facilities. This section also imposes a fee on operators of underground natural gas storage facilities to support the Federal underground natural gas storage safety program. The agency issued an Interim Final Rule on minimum safety standards for underground natural gas storage facilities in December 2016 and reopened the comment period in October 2017. PHMSA has not published a Final Rule. The rule is scheduled to be published on July 2, 2019.

- *Safety Data Sheets (PIPES Act Sec. 14).* Requires hazardous liquid pipeline operators to provide on-scene coordinators and state and local emergency responders with safety data sheets within six hours of a hazardous liquid spill, providing more accurate information for pipeline emergencies. Operators are required to comply with this self-executing provision, and PHMSA plans to incorporate the provision into the "Safety of On-Shore Hazardous Liquid Pipelines" rulemaking, which was sent to the OMB on March 19, 2019.

- *Emergency Order Authority (PIPES Act Sec. 16).* Authorizes the Secretary to impose certain emergency restrictions and safety measures on pipeline operators to address an imminent hazard resulting from a pipeline incident or unsafe practice. PHMSA published an Interim Final Rule on emergency orders in October 2016 but has not issued a Final Rule. The rule is scheduled to be published on April 22, 2019.

- *Response Plans (PIPES Act Sec. 18).* Requires oil spill response plans to consider the impact of a discharge into or on navigable waters and adjoining shorelines, including those covered by ice, and to include in those response plans procedures and resources for responding to such discharge. PHMSA held a workshop in April 2016 to develop a "Good Practices" guide on how to complete oil spill response plans, but the guide is still going through internal clearance and has not been published.

- *High Consequence Areas (PIPES Act Sec. 19).* Designates the Great Lakes, coastal beaches, and marine coastal waters as HCAs for purposes of ensuring pipelines in these areas are inspected and repaired. A public meeting was held in November 2017, but no Final Rule has

been issued. The agency has only begun drafting an Advanced Notice of Proposed Rulemaking, and no publication date has been identified.

Additionally, the *PIPES Act of 2016 (Sec. 10)* required the convening of a working group to consider the development of a voluntary information-sharing system to encourage collaborative efforts that improve inspection system feedback and information sharing. The purpose is to improve gas transmission and hazardous liquid pipeline facility integrity risk analysis. PHMSA's Voluntary Information-Sharing System Working Group is preparing a report with recommendations.

PHMSA's rulemaking program must comply with the Administrative Procedure Act and applicable Executive Orders; however, unlike other regulatory agencies, PHMSA has additional statutory processes it must fulfill before finalizing a pipeline safety regulation.[41] This process was put in place in 1996[42] and includes the requirement to perform a "risk assessment" of proposals under consideration, and to submit risk assessment information to the Technical Pipeline Safety Standards Committee and/or the Technical Hazardous Liquid Pipeline Safety Standards Committee.[43] The Committee(s) then must evaluate the data and provide any recommended options to PHMSA. PHMSA must review the report from the Committee(s), must provide written response, and may revise the risk assessment and proposed standard before promulgating a Final Rule. Moreover, PHMSA must propose or issue standards "only upon a reasoned determination that the benefits of the intended standard justify its costs," except as otherwise required by statute.

To address the status of the statutorily-mandated PHMSA rulemakings, Congress required in the Sec. 3 of the PIPES Act of 2016 the Secretary to publish updates on the agency website every 90 days, which includes a work plan for each regulation, timeline, staff allocations, resource constraints, and any other constraints delaying the rulemaking process. PHMSA has published its rulemakings chart online, and this information has aided Congress in monitoring PHMSA's progress.

[41] 49 U.S.C. § 60102(b).
[42] The Accountable Pipeline Safety and Partnership Act of 1996 (P.L. 104-304).
[43] PHMSA informally refers to the Technical Pipeline Safety Standards Committee as the Gas Pipeline Advisory Committee (GPAC), and the Technical Hazardous Liquid Pipeline Safety Standards Committee as the Liquid Pipeline Advisory Committee.

WITNESS LIST

PANEL I

The Honorable Howard "Skip" Elliott
Administrator
Pipeline and Hazardous Materials Safety Administration

The Honorable Jennifer Homendy
Board Member
National Transportation Safety Board

PANEL II

Mr. Carl Weimer
Executive Director
Pipeline Safety Trust

Mr. Andrew Black
President and CEO
Association of Oil Pipe Lines

Chief Dan Eggleston
EFO, CFO, CMO, President and Chairman of the Board
International Association of Fire Chiefs

Mr. Richard Kuprewicz
President
Accufacts, Inc.

Mr. Robin Rorick
Vice President of Midstream and Industry Operations
American Petroleum Institute

Mr. Elgie Holstein
Senior Director for Strategic Planning
Environmental Defense Fund