U.S. Senate
Committee on Commerce, Science and Transportation
Subcommittee on Transportation and Safety
Pipeline Safety: Federal Oversight and Stakeholder Perspectives

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Good afternoon Chairman Fischer, Ranking Member Duckworth, and Members of the Committee. Thank you for the opportunity to speak today about our industry's proactive efforts in pipeline safety and our priorities for Pipeline Safety Reauthorization. Pipelines remain one of the safest ways to deliver the energy we use every day. However, to maintain this strong safety record and ensure consumer access to clean, abundant, and affordable energy, it is imperative that the regulatory environment and the Pipeline and Hazardous Materials Safety Administration (PHMSA) address current and future safety challenges. We recognize and appreciate PHMSA's efforts to implement past Congressional mandates, but more work needs to be done to institute practical and performance-based regulations. Thus, as the process for reauthorization of PHMSA and other safety programs move forward, we encourage strong consideration for industry priorities that will maximize our investment in people, technology, and safety culture to effectively advance pipeline safety.

The American Petroleum Institute (API) is the only national trade association representing all facets of the oil and natural gas industry, which supports 10.3 million jobs and 8 percent of the U.S. economy. API's more than 625 members include large integrated companies, as well as exploration and production, refining, marketing, pipeline, and marine businesses and service and supply firms. As Vice President of API Midstream and Industry Operations, I am responsible for all energy infrastructure issues, including those related to the gathering, processing, storage, and transportation of oil and natural gas.

ENERGY SECURITY

The United States leads the world in the production of oil and natural gas[1] and, at the same time, is the global leader in the reduction of carbon dioxide emissions, which are at their lowest levels in a generation.[2] Additionally, carbon dioxide emissions from electricity generation have declined 26 percent since 2005 and are near their lowest levels in 30 years; more than 60 percent of the decrease in power generation-related CO_2 emissions since 2005 was due to fuel switching to natural gas.[3] In the past decade, we have transitioned from an era of energy scarcity and dependence to one of energy abundance and security. In 2008, the U.S. was producing only five million barrels per day of oil. As of

[1] https://www.eia.gov/beta/international/
[2] U.S. DOE, Energy Information Administration, Monthly Energy Review March 2019.
[3] https://www.eia.gov/environment/emissions/carbon/

this month, the U.S. is producing a record 12 million barrels per day[4], more than doubling production. The Permian Basin in West Texas is a perfect example of this growth in production, pumping out over four million barrels of oil and natural gas liquids per day – quadruple its production from just eight years ago. Along with this growth in production, there's been a corresponding growth in U.S. crude and petroleum product exports, which reached a record high of nine million barrels per day in November.[5] A similar transformation has occurred in natural gas production, which has grown by over 50 percent since 2008.[6] This energy renaissance has helped U.S. families save on their energy bills, created greater job opportunities for American workers, bolstered U.S. manufacturing, strengthened our economy, and helped to enhance our national security interests abroad. While in the last decade healthcare and education spending has increased by over 70 and 50 percent, respectively, household energy spending in America has declined by 10 percent.

The benefits of the oil and natural gas we produce here in the U.S. also provide benefits far beyond our borders. None of this would be possible were it not for the midstream sector of our industry, which ensures that we can get oil and natural gas from the areas where they are produced to where they are processed, refined and ultimately used. Our energy infrastructure is a critical component of the oil and natural gas supply chain, consisting of terminals, underground and above ground storage facilities, pipelines, railcars, trucks, ships, and marine vessels. Ensuring we have a robust energy infrastructure system that keeps pace with growing production and demand is essential to helping provide American families and businesses with reliable access to affordable energy. A 2017 study found that the U.S. will need up to $1.3 trillion in energy infrastructure investment through 2035. This investment, on average, will annually support up to 1 million jobs and add up to $100 billion to GDP.[7] Whether it is powering our nation's electricity grid, delivering natural gas to heat homes during harsh winters, or providing emergency fuel for first responders during natural disasters, this investment will ensure that these critical fuels are delivered when and where they are needed most.

COMMITMENT TO PIPELINE SAFETY

Industry's commitment to safe operations is evident by the strong safety record of the pipeline system that delivers oil, natural gas and petroleum products. Protecting the public and the environment is the top priority for pipeline operators and a central component to pipeline design, construction and maintenance. Ultimately, the development of a comprehensive pipeline safety system is the product of a shared commitment from key entities in the stakeholder community. The first element involves the federal and state governments, which provide the safety regulations for the industry. Next is the contribution of the industry trade associations that, with the help of other stakeholders, help to develop industry guidance, recommendations and best practices. The third key entity are individual companies, who make the commitment to develop and implement effective safety programs. While each of these functions are critically important to advancing safety in the pipeline industry, the true effectiveness of

[4] U.S. DOE, Energy Information Administration, Weekly U.S. Field Production of Crude Oil
[5] U.S. DOE, Energy Information Administration, Weekly Petroleum Status Report
[6] U.S. DOE, Energy Information Administration, U.S. Natural Gas Marketed Production (monthly)
[7] ICF, "U.S. Oil and Gas Infrastructure Investment Through 2035" (2017)

the pipeline safety program exists because these three functions complement one another through the coordination and collaboration of all three of these entities.

API, our allied oil and natural gas trades, and members are fully committed to maintaining the highest standards and establishing a strong foundation with the public by continually striving for improvement through enhanced safety operations. And while greater than 99 percent of oil, natural gas and their products reach their destination without incident, pipeline companies are striving to address the remaining fraction of a percent to reach our shared industry-wide goal of zero incidents. The industry's ability to continually advance the safety of oil and natural gas pipeline operations is based on three critical elements: (1) people, (2) technology and (3) safety culture. Each of these is intertwined with the others to create a comprehensive and cohesive safety program. Education and training are constantly provided to industry employees to ensure they can operate the latest and greatest technologies. Similarly, employees are committed to developing a culture of safety that is continually assessed and improved. This three-pronged approach is designed first and foremost to prevent an incident from ever happening, but also ensures that the industry is prepared for any incident and can effectively respond in the rare instance that an incident occurs.

Although API and its members appreciate the emphasis PHMSA has placed recently on addressing mandates and National Transportation Safety Board (NTSB) recommendations, we strongly encourage PHMSA to act in a timely manner and not lose sight of the importance of a holistic, performance-based regulatory approach that maximizes the industry's ability to use the latest advances in new technologies and techniques to manage pipeline safety risk. That said, performing a reasoned cost benefit analysis before making significant regulatory changes must continue to be a part of the regulatory process. Despite it taking some time for PHMSA to prepare the cost-benefit analysis during the rulemaking process, it's just a small step in the comprehensive rulemaking process. PHMSA's cost-benefit analyses provide valuable input to the public comment and advisory committee review processes. Since there are usually multiple practical alternatives to achieve any particular pipeline safety objective, the cost-benefit analysis helps PHMSA and stakeholders compare and contrast the alternatives and identify the best option.

A statutory requirement to consider costs and benefits in health, safety, and environmental regulations is not unique to PHMSA as Congress has, as a part of various acts, required the Occupational Health Safety Administration (OHSA), Mine Safety Health Administration (MSHA), and Environmental Protection Agency (EPA) to analyze costs and benefits during rulemaking. An excellent example of the important role cost benefit plays in the regulatory process is PHMSA consideration of class location changes through rulemaking. With today's processes and technologies, pipeline safety can be managed effectively and at an equivalent level of safety through data-driven inspection and maintenance, instead of costly unnecessary and arbitrary pipe replacements required by the current class location change regulations.

To that end, API and its members strongly supported the collaborative approach to review and finalize regulations through the Advisory Committee process and encourages PHMSA to publish the

transmission proposals as voted on by the Gas Pipeline Advisory Committee (GPAC) and Liquid Pipeline Advisory Committees (LPAC) and expeditiously carry out a similar review process for a class location and repair criteria rulemaking. The Advisory Committee process is a transparent and balanced forum that has demonstrated the ability to build consensus around complex regulatory issues, including the pending gas and liquid transmission pipeline safety regulations. This forum will also be an ideal forum for the gathering lines discussions that are scheduled to begin later this year. Recently, several organizations that participated in the GPAC meetings sent a letter to Secretary of Transportation Elaine Chao to express our support for quickly publishing a final gas transmission rule to address outstanding congressional mandates. The signatories included multiple industry associations as well as public safety advocacy groups. Such consensus would not have been possible prior to the GPAC discussions.

THE IMPORTANCE OF API PIPELINE STANDARDS

Safety is a core value of the oil and natural gas industry. Our operators are committed to enhancing the safety of our workers and protecting the community and environment. At API, we establish industry standards and disseminate best practices across the industry to ensure the highest level of safety and achieve our collective goal of operating with zero incidents. Since 1924, API has been the leader in developing voluntary, consensus -based, internationally recognized, industry standards that promote safety and reliability. Our standards program is accredited by the American National Standards Institute (ANSI), the same organization that accredits similar programs at several national laboratories. In creating these industry consensus standards and recommended practices (RPs), API partners with the best and brightest technical experts from government, academia, industry, and other stakeholder groups. This work supports the fulfillment of the National Technology Transfer and Advancement Act (NTTAA), which mandates that federal agencies use technical standards developed and adopted by voluntary consensus standards bodies, as opposed to using government-unique standards. Currently, API has more than 600 standards that are used globally by oil and natural gas operators. Here in the U.S., these standards are referenced more than 650 times in federal regulations, covering multiple government agencies, including PHMSA. Additionally, API's standards are the most widely cited petroleum industry standards by state regulators, with 240 API standards cited over 4,130 times in state-based regulations. Finally, API's standards are also the most widely cited standards by international regulators in the 14 major producing regions.[8]

Despite the current lack of certainty in the regulatory process, the industry is not standing idly by. API continues to develop and revise critical standards and recommended practices for prevention, mitigation, and response activities to address pipeline safety. Specifically, API has developed a number of standards to address pipeline safety in close coordination with subject matter experts from government, academia and industry. API RP 1173, *Pipeline Safety Management Systems*, provides the framework for managing complex operations with safety as the top priority. It provides operators with established guidelines to manage risk, promote best practices, continuously improve safety performance and build a strong organizational safety culture from the leader of a company all the way to an individual working in the field Safety culture must be organically strengthened from within an

[8] OGP Report No. 426, Regulators' Use of Standards, March 2010

organization, which is why a voluntary regime is so important for the industry's implementation of SMS. As U.S. production continues to grow and pipeline capacity does as well to keep pace, operators are motivated to develop a management system that ensures new pipelines are built to the appropriate specifications, keeping safety a priority. API RP 1177*, Steel Pipeline Construction Quality Management Systems*, outlines the steps needed for constructing safe steel pipelines, from purchasing the correct material to completing the right inspections prior to initiating operation.

While pipeline operators are taking significant steps to meet the goal of zero incidents, they must have a comprehensive mitigation strategy to reduce the impact should a release occur. Developed with industry, regulator and broader stakeholder input, API RP 1175, *Pipeline Leak Detection - Program Management*, outlines how to use multiple leak detection tools -- such as aerial overflights, ground patrols, and computational pipeline monitoring -- to create a robust and holistic program to identify a leak as soon as it occurs. In addition, the RP encourages senior leaders within companies to enforce a leak detection culture that promotes safety. Properly trained employees will also aid in mitigating incidents. Pipeline operator qualifications (OQ) ensure companies properly prepare their personnel to perform high-risk duties, and continuous testing to verify the skills of qualified employees is a critical effort of operators. API has also developed RP 1161, *Pipeline Operator Qualification*, to give operators direction on ensuring those individuals performing high-risk tasks are appropriately trained and competent.

Should an incident occur, pipeline operators are ready to respond. Through coordinated emergency response programs with federal, state and local first responders and agencies, operators ensure timely, seamless and effective responses. API RP 1174, *Onshore Hazardous Liquid Pipeline Emergency Preparedness and Response*, completed by operators, regulators, and first responders, seeks to improve emergency response capabilities by providing a management system framework for operators to ensure they are prepared to respond to any event in a coordinated way with both our government and first responder partners in an efficient manner. These RPs are just a few of the available documents developed in collaboration with federal and state regulators, academics and interested stakeholders, which through effective implementation and training will help improve safety across the industry.

PIPELINE SAFETY REAUTHORIZATION PRIORITIES

As stated earlier, to improve upon our strong safety record and reach our goal of zero pipeline incidents, it is imperative that the regulatory environment and PHMSA be positioned to meet current and future safety challenges. As such, there are three priority areas where PHMSA reauthorization can support the shared objective of industry and the regulating agency in advancing pipeline safety.

RECOGNIZING THE IMPORTANCE OF INNOVATION AND TECHNOLOGY

Within the current Administration, DOT and PHMSA have expressed a renewed interest in innovation and technology. The leadership of both organizations continue to place a great deal of importance on the use of inspection technology as a "transformative" tool to advance the oil and natural gas pipeline industry's safety performance and address remaining pipeline incidents. Thus, it is imperative that PHMSA's regulations do not hamper an operator's ability to address potential problems through the

application of the most innovative technology, critical engineering assessment processes and fit-for-purpose repair criteria based on data and sound engineering principles. Specifically, operators are required to conduct timely assessments of pipeline integrity, and that may often be done effectively and efficiently with a new technology. However, companies may have a hesitation to do so, given the burdensome approval process in the use of alternative safety technology. Establishing clear parameters and deadlines associated with PHMSA's review, notification, and approvals of alternative technology will help provide more certainty in the process and allow operators to utilize the latest cutting-edge technologies to further pipeline safety.

With this in mind, 50-year old regulations that only allow for new technologies to be used one rulemaking at a time must be updated. While those regulations reflected the technology and best thinking available at the time of adoption, they have not kept pace with advances in pipeline safety technology and modern engineering practices. To PHMSA's credit, over the last couple of decades, they have attempted to pursue performance-based regulations versus prescriptive ones – in other words, an approach that focuses on the desired outcomes (in this case, fewer incidents) rather than prescriptive processes or procedures (i.e., operators must inspect their pipe so many times every few years). This is compliant with direction provided by the Office of Management and Budget (OMB) to give preference to performance-based standards. A performance-based regulatory model allows operators to utilize the latest advances in inspection and detection technologies as soon as it is practicable to focus on the desired outcome of fewer incidents. For instance, PHMSA issued Integrity Management (IM) regulations that provide operators with the ability to use different in-line inspection (ILI) tools that are better at detecting a defect in specific types of pipe.

In addition, PHMSA should be commended for considering a pilot through a special permit program which can serve as a vehicle for testing updated integrity management repair criteria. As industry seeks to harness the benefits of inspection technology advances and programmatic improvements contained in the recently updated API Recommended Practice 1160, *Managing System Integrity for Hazardous Liquid Pipelines*, we welcome this potential opportunity to demonstrate the importance of innovation and technology, and improving safety through a pilot or special permit process. We are hopeful we can establish a process that can serve as a framework for member companies to use in their individual requests and allow PHMSA to collect the necessary data. Through reauthorization this would serve to support rulemaking and incorporation by reference RP 1160. That said, successful use of the process is dependent on a consistent and timely review process. If there is not approval in a reasonable timeframe, then some of the requirements in regulation cannot be fulfilled.

MODERNIZING PHMSA AND REGULATIONS

As PHMSA and the energy industry together continue to drive toward our shared goal of zero pipeline incidents, a modernized regulator with the necessary tools, well-trained staff, and streamlined programs can bring needed certainty and consistency into the regulatory and oversight process. While the oil and natural gas industry continues to work proactively, through our standards development process and

collaboration with regulators and other stakeholders, to achieve our goal of zero incidents, there are additional regulatory reforms that we believe will help to further enhance pipeline safety.

A performance-based approach recognizes that there is great variability throughout the industry and that a one-size-fits-all approach could prevent the development of more company or operations specific engineering assessment options that most effectively manage and advance safety. For example, currently 49 Code of Federal Regulations (CFR) Part 193 safety regulations for liquefied natural gas (LNG) facilities does not provide a risk-based alternative for establishing important maintenance programs. The regulations were originally written decades ago to capture siting, design, construction, operation and maintenance for small-scale peak shaving type facilities. The current regulation is not sufficiently scalable or flexible to address a broader spectrum of operations including large-scale export facilities. This could result in unnecessary, costly and overly burdensome prescriptive requirements that do not enhance safety on these facilities. PHMSA should consider risk-based/process safety management options in Part 193 rulemaking that allows operators to prioritize critical resources to take a risk-informed integrity management approach for inspection and corrosion control at LNG facilities.

There are other areas where outdated regulations also drive inefficiencies and resource allocation to less impactful safety priorities. For example, in current regulations, pipeline operators are required to report pipeline incidents if they meet certain conditions, including a clean-up cost of $50,000 or higher. However, PHMSA set this threshold in 1984 and has not updated it for inflation since. As such, incident reporting based on the current day costs would allow pipeline operators to better utilize and allocate resources, toward more significant incidents. Keeping pace, Congress should require PHMSA to adjust its incident reporting dollar threshold for inflation.

Additionally, there are more than 650 API standards referenced in Federal regulation. As these standards are improved through the American National Standards Institute (ANSI)-accredited process at a minimum of every 5 years, Federal regulations often are unable to be updated in a timely manner to reflect these important leading practices within the industry. Currently, approximately 50 percent of the instances where PHMSA cites API standards are not referencing the most recent version of those standards. As API standards are updated or new ones are developed, PHMSA should execute a more timely and frequent review process that can use the existing rulemaking processes to incorporate by reference the latest edition or the first edition of appropriate standards.

Our industry continues to place a great deal of emphasis and resources on research and development. Specifically, improvements to pipeline integrity inspection capabilities are a strategic objective that have driven our industry to invest in furthering in-line inspection tool detection, ultimately preventing incidents from occurring. For example, API is facilitating a more dynamic and interactive process between pipeline operators and technology vendors to ensure there is a unified approach to addressing challenges and maintaining the focus on achieving safer pipelines. As such, industry stands willing to explore opportunities to further strengthen collaboration with PHMSA on research and development, collectively shaping a longer-term strategy that drives innovation, informs regulations, and ultimately improves pipeline safety performance.

Lastly, the oil and natural gas industry strives to have well trained and qualified PHMSA pipeline inspectors to help bring certainty and consistency to the inspection and enforcement of federal pipeline safety regulations. However, pipeline inspectors frequently come into PHMSA with limited pipeline safety experience, and those that already have or gain experience often depart the agency to pursue more lucrative opportunities. As such, similar to other agency hiring authority for specialty positions, the ability to compensate pipeline inspectors at market rates through PHMSA's use of Schedule A employees with streamlined hiring and flexible pay levels would enhance PHMSA's ability to attract and retain expert pipeline inspectors.

PROTECTING PIPELINES, PEOPLE AND ENVIRONMENT

Pipelines are one of the safest ways to deliver the energy American families and consumers use every day. However, recent illegal attacks on oil and natural gas infrastructure have pointed out the need for increased awareness of pipeline infrastructure, the impacts of damage to it, and the importance of enforcement against perpetrators of such attacks. Illegal disruptions to critical infrastructure can have impacts on local populations, the environment and the economy. While we respect the first amendment right to free speech and peaceful protest, an individual that criminally trespasses onto private property to then endanger their own life, the life of others and the environment is conducting an act that goes beyond the right provided by the first amendment.

For the safety of the people and the environment, Congress should do more to prevent threats to critical infrastructure like oil and natural gas pipelines by strengthening the breadth of protections around pipelines and facilities and expanding the scope of actions under criminal provision.

Our members recognize that the industry is a target for both criminals and nation states who are working to steal intellectual property, disrupt operations and undermine our economy. They take the threats very seriously and continue to prioritize the protection of their assets from both physical and cyber-attacks. Companies in the oil and natural gas industry have made and continue to make considerable investments in defending their networks, bolstering their cyber security defenses, and participating in organizations and partnerships where they can share and receive threat information. Specifically, up to the board level, they are making important investments in time, people and resources to defend themselves, so they can continue to deliver the products Americans rely on every day. While threats continue to evolve, so do industry's defenses, by working with government partners, including TSA, DHS, FBI and others to understand the threat. We believe the industry's record of delivering products safely and efficiently 99 percent of the time is indicative of the actions our members take to protect themselves in the face of very real and serious threats.

CONCULSION

Safety of the public and the environment is our industry's top priority, and collaboration with PHMSA, DHS, and other government agencies only strengthens our ability to transport our products across America with the fewest possible number of incidents. We are committed to promoting safety in all of

our operations, helping to ensure that American families and businesses can efficiently access affordable and reliable energy. Again, thank you the opportunity to appear before you today, and I am happy to answer any questions that you may have.