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PHMSA Proposes New Safety Regulations for Natural Gas Transmission Pipelines

WASHINGTON - The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) today announced proposed regulations to update critical safety requirements for natural gas transmission pipelines. The proposed rule would broaden the scope of safety coverage both by adding new assessment and repair criteria for gas transmission pipelines, and by expanding these protocols to include pipelines located in areas of medium population density, or "Moderate Consequence Areas," (MCAs) where an incident would pose risk to human life. The proposed rule provides pipeline operators with regulatory certainty, and responds to both Congressional mandates and outside safety recommendations.

"The significant growth in the nation's production, usage and commercialization of natural gas is placing unprecedented demands on the nation's pipeline system," said U.S. Transportation Secretary Anthony Foxx. "This proposal includes a number of commonsense measures that will better ensure the safety of communities living alongside pipeline infrastructure and protect our environment."

The proposed regulations **address four congressional mandates** from the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, **one GAO recommendation** and **six NTSB recommendations**, including the recommendation adopted in the wake of the San Bruno explosion that pipelines built before 1970 be tested. Pipelines built before 1970 are currently exempted from certain pipeline safety regulations because they were constructed and placed into operation before pipeline safety regulations were developed. In its investigation of the PG&E natural gas pipeline failure and explosion in San Bruno, CA, the National Transportation Safety Board concluded that hydrostatic testing of grandfathered pipelines would have likely exposed the defective pipe that led to the pipeline failure.

"Following significant pipeline incidents such as the 2010 San Bruno, California tragedy, there was a pressing need to enhance public safety and the integrity of the nation's pipeline system," said PHMSA Administrator Marie Therese Dominguez. "The proposal's components address the emerging needs of America's natural gas pipeline system and adapt and expand risk-based safety practices to pipelines located in areas where incidents could have serious consequences."

The proposed changes provide pipeline operators with regulatory certainty that they need when making decisions and investments to improve gas transmission infrastructure, and address priorities outlined as part of the Climate Action Plan to reduce methane emissions. The proposed changes to gas transmission safety regulations are expected to result in fewer incidents, which could lead to a reduction in gas released into the atmosphere as greenhouse gases (GHG). The proposed rule is expected to result in net annual average reductions of 900-1,500 metric tons of carbon dioxide and 4,600-8,100 metric tons of methane, a powerful greenhouse gas. The rule also proposes changes to the way that pipeline operators secure and inspect gas transmission pipeline infrastructure following extreme weather events, such as hurricanes and flooding.

In addition to the specific requirements mentioned above, the rulemaking proposal would revise and strengthen federal Pipeline Safety Regulations by:

- Modifying repair criteria for pipelines inside and outside of high consequence areas,
- Providing additional direction on how to evaluate internal inspection results to identify anomalies,
- Clarifying requirements for conducting risk assessment for integrity management, including addressing seismic risk,
- Expanding mandatory data collection and integration requirements for integrity management, including data validation and seismicity,
- Requiring additional post-construction quality inspections to address coating integrity and cathodic protection issues,
- Requiring new safety features for pipeline launchers and receivers, and
- Requiring a systematic approach to verify a pipeline's maximum allowable operating pressure (MAOP) and requiring operators to report MAOP exceedances.

The notice of proposed rulemaking has been transmitted to the *Federal Register* for publication. An actual date of publication will be determined by the *Federal Register*, but a preview of the rulemaking proposal transmitted by PHMSA is available on the agency's website. For more information on the U.S. DOT's efforts to improve pipeline safety and awareness, including details about the proposed rule, visit the PHMSA website at www.phmsa.dot.gov.

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The mission of the Pipeline and Hazardous Materials Safety Administration 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. PHMSA develops and enforces regulations for the safe operation of the nation's 2.6 million mile pipeline transportation system and the nearly 1 million daily shipments of hazardous materials by land, sea, and air. Please visit <http://phmsa.dot.gov> or https://twitter.com/PHMSA_DOT for more information.

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I. Executive Summary

A. Purpose of the Regulatory Action

PHMSA believes that the current regulatory requirements applicable to gas pipeline systems have increased the level of safety associated with the transportation of gas. Still, incidents with significant consequences and various causes continue to occur on gas pipeline systems. PHMSA

has also identified concerns during inspections of gas pipeline operator programs that indicate a potential need to clarify and enhance some requirements. Based on this experience, this NPRM proposes additional safety measures to increase the level of safety for those pipelines that are not in HCAs as well as clarifications and selected enhancements to integrity management requirements to improve safety in HCAs.

On August 25, 2011, PHMSA published an Advance Notice of Proposed Rulemaking (ANPRM) to seek feedback and comments regarding the revision of the Pipeline Safety Regulations applicable to the safety of gas transmission and gas gathering pipelines. In particular, PHMSA requested comments regarding whether integrity management (IM) requirements should be changed and whether other issues related to system integrity should be addressed by strengthening or expanding non-IM requirements.

Subsequent to issuance of the ANPRM, the National Transportation Safety Board (NTSB) adopted its report on the San Bruno accident on August 30, 2011. The NTSB issued safety recommendations P-11-1 and P-11-2 and P-11-8 through -20 to PHMSA, and issued safety recommendations P-10-2 through -4 to Pacific Gas & Electric (PG&E), among others. Several of these NTSB recommendations related directly to the topics addressed in the August 25, 2011 ANPRM and have an impact on the proposed approach to rulemaking. Also subsequent to issuance of the ANPRM, the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (the Act) was enacted on January 3, 2012. Several of the Act's statutory requirements related directly to the topics addressed in the August 25, 2011 ANPRM and have an impact on the proposed approach to rulemaking.

Congress has authorized Federal regulation of the transportation of gas by pipeline in the Pipeline Safety Laws (49 U.S.C. §§ 60101 *et seq.*), a series of statutes that are administered by the DOT, PHMSA. PHMSA has used that authority to promulgate comprehensive minimum safety standards for the transportation of gas by pipeline.

Congress established the current framework for regulating pipelines transporting gas in the Natural Gas Pipeline Safety Act of 1968, Pub. L. No. 90-481. That law delegated to DOT the authority to develop, prescribe, and enforce minimum Federal safety standards for the transportation of gas, including natural gas, flammable gas, or toxic or corrosive gas, by pipeline. Congress has since enacted additional legislation that is currently codified in the Pipeline Safety Laws, including:

In 1992, Congress required regulations be issued to define the term “gathering line” and establish safety standards for certain “regulated gathering lines,” Pub. L. No. 102-508.

In 1996, Congress directed that DOT conduct demonstration projects evaluating the application of risk management principles to pipeline safety regulation, and mandated that regulations be issued for the qualification and testing of certain pipeline personnel, Pub. L. 104-304.

In 2002, Congress required that DOT issue regulations requiring operators of gas transmission pipelines to conduct risk analyses and to implement IM programs under which pipeline segments in high consequence areas (HCA) would be subject to a baseline assessment within 10 years and re-assessments at least every seven years, and required that standards be issued for assessment of pipelines using direct assessment, Pub. L. 107-355.

B. Summary of the Major Provisions of the Regulatory Action In Question

PHMSA plans to address several of the topics in the ANPRM in separate rulemakings because of the diverse scope and nature of several NTSB recommendations and the statutory requirements of the Act that were covered in the ANPRM. This proposed rule addresses several IM topics, including: revision of IM repair criteria for pipeline segments in HCAs to address cracking defects, non-immediate corrosion metal loss anomalies, and other defects; explicitly including functional requirements related to the nature and application of risk models currently invoked by reference to industry standards; explicitly specifying requirements for collecting, validating, and integrating pipeline data models currently invoked by reference to industry standards; strengthening requirements for applying knowledge gained through the IM Program models currently invoked by reference to industry standards; strengthening requirements on the selection and use of direct assessment methods models by incorporating recently issued industry standards by reference; adding requirements for monitoring gas quality and mitigating internal corrosion, and adding requirements for external corrosion management programs including above ground surveys, close interval surveys, and electrical interference surveys; and explicitly including requirements for management of change currently invoked by reference to industry standards. With respect to non-IM requirements, this NPRM proposes: a new “moderate consequence areas” definition; adding requirements for monitoring gas quality and mitigating internal corrosion; adding requirements for external corrosion management programs including above ground surveys, close interval surveys, and electrical interference surveys; additional requirements for management of change, including invoking the requirements of ASME/ANSI B31.8S, Section 11; establishing repair criteria for pipeline segments located in areas not in an HCA; and requirements for verification of maximum allowable operating pressure (MAOP) in accordance with new § 192.624 and for verification of pipeline material in accordance with new

section § 192.607 for certain onshore, steel, gas transmission pipelines. This includes establishing and documenting MAOP if the pipeline MAOP was established in accordance with § 192.619(c) or the pipeline meets other criteria indicating a need for establishing MAOP.

In addition, this NPRM proposes modifying the regulation of onshore gas gathering lines. The proposed rulemaking would repeal the exemption for reporting requirements for gas gathering line operators and repeal the use of API RP 80 for determining regulated onshore gathering lines and add a new definition for “onshore production facility/operation” and a revised definition for “gathering lines.” The proposed rulemaking would also extend certain Part 192 regulatory requirements to Type A lines in Class 1 locations for lines 8 inches or greater. Requirements that would apply to previously unregulated pipelines meeting these criteria would be limited to damage prevention, corrosion control (for metallic pipe), public education program, maximum allowable operating pressure limits, line markers, and emergency planning.

This NPRM also proposes requirements for additional topics that have arisen since issuance of the ANPRM. These include: (1) requiring inspections by onshore pipeline operators of areas affected by an extreme weather event such as a hurricane or flood, landslide, an earthquake, a natural disaster, or other similar event; (2) revising the regulations to allow extension of the IM 7-year reassessment interval upon written notice per Section 5 of the Act; (3) adding a requirement to report each exceedance of the MAOP that exceeds the margin (build-up) allowed for operation of pressure-limiting or control devices per Section 23 of the Act; (4) adding requirements to ensure consideration of seismicity of the area in identifying and evaluating all potential threats per Section 29 of the Act; (5) adding regulations to require safety features on

launchers and receivers for in-line inspection, scraper, and sphere facilities; and (6) incorporating consensus standards into the regulations for assessing the physical condition of in-service pipelines using in-line inspection, internal corrosion direct assessment, and stress corrosion cracking direct assessment.

The overall goal of this proposed rule is to increase the level of safety associated with the transportation of gas by proposing requirements to address the causes of recent incidents with significant consequences, clarify and enhance some existing requirements, and address certain statutory mandates of the Act and NTSB recommendations.¹

C. Costs and Benefits

Consistent with Executive Orders 12866 and 13563, PHMSA has prepared an assessment of the benefits and costs of the proposed rule as well as reasonable alternatives. PHMSA is publishing the Preliminary Regulatory Impact Analysis (PRIA) for this rule simultaneously with this notice, and it is available in the docket.

PHMSA estimates the total (15-year) present value of benefits from the proposed rule to be approximately \$3,234 to \$3,738 million² using a 7% discount rate (\$4,050 to \$4,663 million using a 3% discount rate) and the present value of costs to be approximately \$597 million using a 7% discount rate (\$711 million using a 3% discount rate). The table below summarizes the average annual present value benefits and costs by topic area. The majority of benefits reflect

¹ PHMSA plans to initiative separate rulemaking to address other topics included in the ANPRM and that would implement other requirements of the Act and NTSB recommendations.

² Range reflects uncertainty in defect failure rates for Topic Area I

cost savings from material verification (processes to determine maximum allowable operating pressure for segments for which records are inadequate) under the proposed rule compared to existing regulations; the range in these benefits reflects different effectiveness assumptions for estimating safety benefits. Costs reflect primarily integrity verification and assessment costs (pressure tests, inline inspection, and direct assessments). The proposed gas gathering regulations account for the next largest portion of benefits and costs and primarily reflect safety provisions and associated risk reductions on previously unregulated lines.