

**Regulatory Impact Analysis
and
Initial Regulatory Flexibility Act Analysis: Proposed Rule**

Pipeline Safety: Operator Qualification, Cost Recovery and other Pipeline Safety Proposed Changes

PHMSA-2013-0163

**Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration (PHMSA)
U.S. Department of Transportation**

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Executive Summary

This package of proposed regulatory changes would address errors and inconsistencies in the current regulations, provide additional clarifications, incorporate industry standards, and update certain regulatory requirements. The proposed changes also address statutory requirements from the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (Public Law 112-90) and safety recommendations from the NTSB, as well as petitions for rulemaking. Many of the proposed revisions are small changes that would not lead to substantial changes in regulatory requirements, operator practices, or overall costs and benefits.

Benefit-Cost Analysis

Annual compliance costs are estimated at \$3.1 million, less savings to be realized from the removal of farm taps from the DIMP requirements. Annual safety benefits cannot be quantified as readily due to data limitations, but are in the range of \$1.6 million per year in avoided incident costs, plus numerous intangible benefits from the improved clarity and consistency of regulations and improved abilities to conduct post-incident investigations. Although the quantified benefits do not exceed the estimated costs, PHMSA believes that these non-quantified benefits are significant enough to outweigh the costs of compliance. In particular, improvements to Operator Qualification and post-incident investigation may prevent a future high-consequence event. At an annual compliance cost of \$3.1 million, the proposed new Operator Qualification and post-accident testing requirements would be cost-effective if they prevented a single fatal incident over a 3-year period.

Regulatory Flexibility Act Analysis

The Initial Regulatory Flexibility Analysis found that the proposed rule could affect a substantial number of small entities because of the market structure of the gas and hazardous liquids pipeline industry, which includes many small entities. However, these impacts would not be significant. The Operator Qualification provision would entail new costs for small entities in the range of \$160 per employee per year, or about 0.3% of salary for a typical pipeline employee. The post-accident drug testing provision would add \$74 in documentation costs per reportable incident. The other provisions would not add appreciable costs, and at least one provision (Farm Taps) would yield compliance cost savings.

Unfunded Mandates Act Analysis

PHMSA determined that the rule would not impose annual expenditures on State, local, or tribal governments of the private sector in excess of \$153 million, and thus does not require an Unfunded Mandates Act analysis.¹

¹ The Unfunded Mandates Act threshold was \$100 million in 1995. Using the non-seasonally adjusted CPI-U (Index series CUUR000SA0), that number is \$153 million in 2013 dollars.

1 Introduction

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is proposing a package of changes to the pipeline safety regulations. On January 3, 2012, President Obama signed into law the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (“the Act”).² The proposed changes would address Sections 9 and 13 of the Act, correct errors, address inconsistencies, and respond to rulemaking petitions.

Requirements in several subject matter areas would be affected, including telephonic or electronic notifications of accidents and incidents, cost recovery for design reviews, Operator Qualification requirements, the renewal of expiring special permits, farm taps, reversal of flow or change in product, control room team training, editorial changes, provide standards for assessment tools via incorporation by reference in Part 195, modify the criteria used to make decisions about conducting post-accident drug and alcohol tests and additional testing in Part 199, requiring electronic reporting of drug and alcohol testing results in Part 199, and requiring post-accident drug and alcohol testing in Part 199.

This report analyzes the benefits and costs of the proposed regulatory changes as required by Section 1 of Executive Order 12866 (as amended by [E.O.’s 13258](#) (2002), [13422](#) (2007), and [13497](#) (2009)) and Section 1 of Executive Order 13563.³ Executive Orders 12866 and 13563 require agencies regulate in the “most cost-effective manner” make a “reasoned determination that the benefits of the intended regulation justify its costs,” and develop regulations that “impose the least burden on society.”

Analysis of the potential impacts on small entities is also required by the Regulatory Flexibility Act. The initial Regulatory Flexibility Act analysis is also included in this document (see Section 8).

2 Background

PHMSA, pipeline operators, and others have identified certain errors, inconsistencies, updates to standards incorporated by reference, and other deficiencies in the Pipeline Safety Regulations. As such, PHMSA is proposing to make a set of miscellaneous changes to the Pipeline Safety regulations concerning the following subjects, which are described in more detail in sections 3.1 to 3.12 below:

- Accident and Incident Notification
- Cost Recovery for Design Reviews
- Operator Qualification Requirements for Parts 192 and 195

² Public Law 112-90

³ The text of E.O. 12866 can be found here: <http://www.archives.gov/federal-register/executive-orders/pdf/12866.pdf> and E. O. 13563 here: http://www.whitehouse.gov/sites/default/files/omb/inforeg/eo12866/eo13563_01182011.pdf

- Special Permit Renewal
- Farm Taps
- Reversal of Flow or Change in Product
- Control Room Team Training
- Editorial Amendments
- Assessment tools by Incorporation by Reference
- modifying the criteria used to make decisions about conducting post-accident drug and alcohol tests
- Electronic Reporting of Drug and Alcohol Testing Results
- Post-Accident Drug and Alcohol Testing

3 Identification of the Problem and the Need for the Rule

Under the Federal Pipeline Safety Laws, 49 U.S.C. 60101 *et seq.*, the Secretary of Transportation must prescribe minimum safety standards for pipeline transportation and for pipeline facilities. The Secretary has delegated this authority to the PHMSA Administrator (49 CFR 1.97(a)). The proposed rule would create changes in the regulations consistent with the protection of persons and property while changing unduly burdensome or nonsensical requirements.

Executive Order 12866 states that "Federal agencies should promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary by compelling need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people" The mission of the PHMSA is to ensure the safety of the natural gas and hazardous liquids pipeline system.

Pipeline operators do not always bear the full costs of an incident. Even in cases where they provide compensation for losses that can be monetized, those monetary penalties or settlements do not necessarily capture the full impact on affected parties, especially when a death or injury occurs. As a result, there is a negative externality present in which the company may not take the full societal cost of a possible incident into account in its decision-making. The negative externality alters the company's decision about safety precautions, leading to a need for government to set minimum levels of safety precautions. Pipeline safety regulations are designed to address this potential market failure. The rulemaking package analyzed here is more specifically intended to improve compliance with these regulations by updating references and technical standards, providing clarification, and removing conflicting language. Some of the provisions also promote improved pipeline integrity and safety by addressing small gaps in the current regulations, as discussed in more detail below.

Executive Orders 12866 and 13563 direct all Federal agencies to consider the costs and benefits of "significant regulatory actions." Federal agencies are directed to develop a formal Regulatory

Impact Analysis consistent with Office of Management and Budget (OMB) Circular A-4 for all “economically significant” rules, or those rules estimated to have an impact of \$100 million in 1995 dollars or more in any one year. The Order also requires a determination as to whether a rule could adversely affect the economy in terms of productivity and employment, the environment, public health, safety, or State, local, or tribal governments. This requirement applies to rulemakings that rescind or modify existing rules as well as to those that establish new requirements. The goal of the analysis is to provide decision makers with a clear indication of the most efficient alternative – that is, the alternative that generates the largest net benefits to society ignoring distributional effects.

This proposed rule has been considered a non-significant regulatory action under Section 3(f) of Executive Order 12866 (58 FR 51735), and therefore is not reviewed by OMB. This proposed rule is non-significant under the Regulatory Policies and Procedures of the Department of Transportation (44 FR 11034). It falls below the \$100 million per year in annual impact threshold.

This regulatory analysis:

- Identifies the target problem, including a statement of the need for the action.
- Identifies available alternative approaches
- Defines the baseline.
- Defines the scope and parameters of the analysis.
- Defines and evaluates the costs and benefits of the action and the main alternatives identified by the analysis.
- Compares the costs and benefits.
- Interprets the cost and benefit results.

Subsections 3.1 to 3.13 describe the proposed regulatory changes in detail and the specific needs to which each regulatory change responds.

3.1 Accident and Incident Notification

Currently, PHMSA requires pipeline owners and operators to notify the National Response Center by telephone or electronically at the earliest practicable moment following discovery (§§ 191.5 and 195.52). In an advisory notice (67 FR 57060) dated September 6, 2002, PHMSA advised owners and operators of gas and hazardous liquids pipeline systems and liquefied natural gas (LNG) facilities that at the earliest practicable opportunity usually means 1 to 2 hours after discovery of the incident.

Section 9 of the Act requires PHMSA to require a specific time limit for telephonic or electronic reporting of pipeline accidents and incidents.

In this rulemaking, PHMSA proposes to revise the pipeline safety regulations to establish time limits for telephonic or electronic notification of an accident or incident to require such notification at the earliest practicable moment following the confirmed discovery of an accident or incident, not later than 1 hour following the time of such confirmed discovery. Owners and operators would also be required to revise their initial telephonic or electronic notice to the Secretary and the National Response Center with an estimate of the amount of the product released, an estimate of the number of fatalities and injuries, if any, and any other information determined appropriate by the Secretary. This information must be reported within 48 hours of the accident or incident, to the extent practicable.

Owners and operators of gas and hazardous liquid pipelines and LNG facilities are already required to report an incident to the NRC in Washington, DC, at the earliest practicable opportunity (usually one to two hours after discovering the incident). However, under Section 9(b)(1) of the Act, PHMSA is required to issue regulations requiring owners and operators to notify the NRC no later than one hour of discovery of a pipeline accident or incident. Therefore, PHMSA is proposing that pipeline operators report accidents and incidents within one hour of confirmed discovery.

3.2 Cost Recovery for Design Reviews

This proposed rulemaking action would amend the Federal pipeline safety regulations to prescribe a fee structure and assessment methodology for recovering Agency costs associated with design reviews of new gas and hazardous liquid pipelines with overall design and construction costs totaling at least \$2,500,000,000 or that contain new and novel technologies.

PHMSA has no method for recovering design review costs from the operator of the pipeline incurred by the agency while conducting these reviews.

Section 13 of the Act requires PHMSA to recover costs associated with design reviews. Section 13 of the Act allows PHMSA to prescribe a fee structure and assessment methodology for recovering costs associated with design reviews. Specifically, cost recovery can apply to any project that : 1) has costs totaling at least \$2,500,000,000 as adjusted by the Secretary to take into account changes in CPI, 2) uses new or novel technologies or design, as determined by the Secretary. The Act also requires the Secretary of Transportation to issue guidance to clarify the meaning of the term "new or novel technologies" one year after the date of enactment.

As directed, in January 2013, PHMSA issued guidance on its website to clarify the meaning of the term “new or novel technologies or design” as meaning, “any products, designs, materials, testing, construction, inspection, or operational procedures that are not addressed in Title 49 CFR Part 192, 193, or 195 due to technology or design advances and innovation.”

PHMSA conducts facility design safety reviews in connection with proposals to construct, expand, or operate gas or hazardous liquid pipelines or liquefied natural gas pipeline facilities. Reviews include design, construction, and operational inspections and oversight. These reviews

divert a significant amount of PHMSA's limited resources from the agency's pipeline safety enforcement responsibilities. Currently, PHMSA has no method for recovering design review costs from the operator of the pipeline that are incurred by the agency while conducting these reviews. The proposed rule would prescribe a fee structure and assessment methodology for recovering the costs associated with design reviews. Section 13 of the Act permits the agency to require the entity or individual proposing the project to pay the costs incurred by PHMSA relating to such reviews. PHMSA is proposing to exercise the cost recovery authority described in Section 13(a) of the Act by prescribing a fee structure and assessment methodology that is based on the costs of providing these reviews. PHMSA has developed a sample master cost recovery agreement for use by PHMSA and the applicant for a project proposal meeting the criteria of proposed 49 CFR Part 190, Subpart D requirements. The sample master cost recovery agreement will be posted on PHMSA's website and in Docket No. PHMSA-2013-0163.

3.3 Operator Qualification Requirements for Parts 192 and 195

This proposed rulemaking action would amend the Federal pipeline safety regulations in 49 CFR Parts 192 and 195. The amendments would include: expanding the scope of the regulations to cover new construction and certain operation and maintenance tasks and including requirements for program effectiveness review and recordkeeping in the Operator Qualification (OQ) program. The recommended changes would enhance the OQ requirements by clarifying existing requirements and making necessary changes to address findings and shortcomings in the interest of public safety. This proposed rule would address the National Transportation Safety Board's (NTSB) recommendation that would clarify OQ requirements to control rooms (Safety Recommendation P-12-8). In addition, PHMSA is extending the program requirements to operators of regulated Type B onshore gas gathering lines.

On July 25, 2012 the National Transportation Safety Board (NTSB) recommended to PHMSA to extend Operator Qualification requirements in Title 49 CFR Part 195 Subpart G to all hazardous liquid and gas transmission control center staff involved in pipeline operational decisions.

PHMSA determined that requiring only a description of the processes used to qualify personnel instead of qualification methods for each individual that is allowed to perform tasks on Type A gas gathering in Class 2 locations and regulated hazardous liquids gathering in rural locations fails to provide necessary ability to ensure that individuals possess requisite abilities.

The proposed action would amend the Federal Pipeline Safety Regulations in 49 CFR parts 192 and 195. The Amendments would include:

- Standardization of the format used in OQ
- Changing the scope of OQ rule in §§ 192.801 and 195.501 so that the method of determining a "covered task" is changed to a technically justified method instead of the negotiated "4-part test" originally in the rule. In particular, a "covered task" would now include new construction rather than just operations and maintenance.

- Established dates in General Sections of §§ 192.809 and 195.509 no longer affect implementation requirements for operators and are renumbered as §§ 192.803 and 195.503
- In §§ 192.809 and 195.509 enhancements are being included to clarify requirements, one training requirement date is deleted while clarifying the needs for training, a new Paragraph J has been added to establish requirements for evaluators including necessary training
- New program effectiveness requirements are added in §§ 192.806 and 195.506
- In §§ 192.807 and 195.507, record requirements that would address evaluators and program effectiveness have been added that are normally reviewed during inspection of OQ programs
- After additional definitions have been added to guide the operators in the regulation, §§ 192.803 and 195.503 have been added into general definition in §§ 192.3 and 195.2 respectively
- Sections 192.9 and 195.11 have been modified to have and administer an Operator Qualification program covering personnel that perform work on regulated Type B onshore gas gathering lines and regulated hazardous liquids gathering in rural locations respectively.

In consideration of the NTSB recommendations in this area, PHMSA also proposes requiring each operator to define the roles and responsibilities and qualifications of others who have the authority to direct or supersede the specific technical actions of controllers (a change to 49 CFR 192.631(b) and 49 CFR 195.446(b)).

3.4 Special Permit Renewal

This proposed rulemaking action would amend 49 CFR 190.341 of the Federal pipeline safety regulations to add procedures for renewing a special permit.

As defined in Section 190.341(a), a special permit is an order by which PHMSA waives compliance with one or more of the pipeline safety regulations. In order to grant a request for a special permit, PHMSA must determine that granting the permit would “not be inconsistent with pipeline safety.” Special permits are authorized by statute in 49 USC § 60118(c), and the application process is set forth in 49 CFR 190.341. PHMSA performs extensive technical analysis on special permit applications and typically conditions a grant of a special permit on the performance of alternative measures that will provide an equal or greater level of safety. PHMSA is committed to public involvement and transparency in special permit proceedings and publishes notice of every special permit application received in the Federal Register for comment.

In the past, PHMSA has included an expiration date for certain special permits depending on the nature of the permit. Starting in 2009, PHMSA began adding an expiration date to all new permits. By doing so, PHMSA is able to ensure that each special permit will be re-reviewed no later than the expiration date. This process ensures that a special permit will not continue to be used if it is no longer in the best interest of public safety.

Since the special permits that were issued with expiration dates in 2009 will start expiring in 2014, PHMSA is proposing to add renewal procedures to the pipeline safety regulations.

PHMSA acknowledges that not all active special permits have expiration dates. Therefore, PHMSA may seek to modify any existing special permit without an expiration date through the “order to show cause” process described in 190.341(h)(2).

3.5 Farm Taps

This proposed rulemaking action would amend the Federal pipeline safety regulations in 49 CFR Part 192. The amendment would include adding a new section (§ 192.740) to cover regulators and over-pressure protection equipment for an individual service line that originates from a transmission, gathering, or production pipeline, and would revise § 192.1003 to exclude farm taps from the requirements of pipeline Distribution Integrity Management Program (DIMP).

A “farm tap” is industry jargon for a pipeline that branches from a transmission, gathering, or production pipeline to deliver gas to a farmer or other landowner. PHMSA has recognized farm taps as distribution lines for many years. Historically, PHMSA and its predecessor agencies have held that farm taps are service lines—a subset of distribution pipelines. Rulemaking proceedings and responses to requests for interpretation have recognized this fact on numerous occasions, dating as far back as 1971.

On Friday, December 4, 2009, PHMSA published the DIMP final rule for gas distribution pipelines (74 FR 63906). That rule applies integrity management requirements to all distribution pipelines. Unlike the integrity management requirements for hazardous liquid or gas transmission pipelines, the DIMP requirements do not focus on a subset of pipelines in “high consequence areas,” but instead apply to all distribution pipelines. Therefore, little consideration was given to the potential impact or appropriateness of subjecting farm taps to DIMP requirements.

Farm taps are mostly located in less-populated areas (Class 1 and 2 locations). The risk to the public from farm taps is generally low, but the risk is dependent upon the service in which the farm tap is employed, the environment in which it operates, and the consequence of an over-pressurization event. DIMP is written to identify needed risk control practices for threats associated with distribution systems, whereas threats to typical farm taps are limited, and most are already addressed within Part 192. Therefore, PHMSA is proposing to amend Part 192 to

exempt farm taps from the requirements of Part 192, Subpart P - Gas Distribution Pipeline Integrity Management. However, to better protect customers served by these lines, PHMSA is proposing to amend Part 192, Subpart M - Maintenance by adding a new section that prescribes inspection activities for pressure regulators and over-pressurization protection equipment on service lines that originate from transmission, gathering, or production pipelines.

3.6 Control Room Team Training

In response to NTSB recommendation P-12-7, PHMSA is proposing a small addition to the regulations related to Control Room Management (49 CFR 192.631 and 195.446). Specifically, PHMSA's proposed language would reinforce the need for team training and exercises that include not only controllers, but other individuals, such as supervisors, that controllers would reasonably be expected to interface with during normal, abnormal, and emergency conditions..

3.7 Reversal of Flow or Change in Product

On November 26, 2010, PHMSA published a final rule (75 FR 72878) that established and required participation in the National Registry of Pipeline and LNG Operators. This final rule amends the Federal pipeline safety regulations to require operators to notify PHMSA electronically of the occurrence of certain events no later than 60 days before the events occur.

In this NPRM, PHMSA proposes to expand the scope of reportable events in §§191.22 and 195.64 to include the reversal of flow of product or change in product in a mainline pipeline. This notification is not required for pipeline systems already designed for bi-directional flow, or when the reversal is not expected to last for a duration of 30 days or less. The proposed rule would require operators to notify PHMSA electronically no later than 60 days before there is a reversal of the flow of product through a pipeline, and also in the instance that there is a change in the product flowing through a pipeline. Examples include, but may not be limited to, changing a transported product from liquid to gas, from crude oil to highly volatile liquids (HVL), and vice versa. In addition, a modification is proposed to §§ 192.14 and 195.5 to reflect the 60 days notification.

3.8 Editorial Amendments

In this NPRM, PHMSA is also proposing to make the following editorial amendments to the pipeline safety regulations:

On July 13, 1998, the Research and Special Programs Administration (RSPA) issued a final rule (63 FR 37500) to provide metric equivalents to the English units. RSPA provided the metric equivalents for informational purposes only. Operators were required to continue using the English units for purposes of compliance and enforcement. RSPA provided a metric equivalent for § 192.175(b) as follows: RSPA removed $C=(3D \times P \times F/1,000)$ and replaced it with $C=(D \times P \times F/48.33)$ ($C=(3D \times P \times F/1,000)$). However, the replacement formula was in error. The correct formula is: $C = (3D * P * F) / 1000$ ($C = (3D * P * F) / 6,895$).

Where, $C = (3D * P * F) / 1000$ is in inches (English unit), and

($C = (3D * P * F^*) / 6,895$) is in millimeters (metric conversion).

On November 26, 2010, PHMSA published a final rule (75 FR 72878), which established the National Registry of Pipeline and LNG Operators. In this rule, PHMSA inadvertently omitted the inclusion of carbon dioxide in the operating commodity types. In an effort to maintain consistency with the rest of Part 195, this proposed rule would amend the language in § 195.64(a) and § 195.64(c)(1)(ii) to correct the term “hazardous liquid” to read “hazardous liquid or carbon dioxide.”

In § 195.248, the correct conversion to 100 feet is mistakenly stated as 30 millimeters. Therefore, the phrase “100 feet (30 millimeters)” is replaced to read “100 feet (30.5 meters).”

In § 195.452, a new paragraph (a)(4) is added to clarify the applicability of § 195.452 to low stress pipelines as described in § 195.12.

3.9 Pipeline Assessment Tools

The National Technology Transfer and Advancement Act of 1995 (Pub. L. 104-113; March 7, 1996) directs Federal agencies to use voluntary consensus standards and design specifications developed by voluntary consensus standard bodies instead of government-developed voluntary technical standards, when applicable. OMB Circular A-119: “Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities” sets the policy for Federal use and development of voluntary consensus standards. As defined in OMB Circular A-119, voluntary consensus standards are technical standards developed or adopted by organizations, both domestic and international. These organizations use agreed upon procedures to update and revise their published standards every 3 to 5 years to reflect modern technology and best technical practices.

The legal effect of incorporation by reference is that the material is treated as if it were published in the Federal Register and Code of Federal Regulations (CFR). This material, like any other properly issued rule, has the force and effect of law. Congress authorized incorporation by reference to reduce the volume of material published in the Federal Register and CFR (See 5 U.S.C. 552(a) and 1 CFR Part 51). Congress granted authority to the Director of the Federal Register to determine whether a proposed incorporation by reference serves the public interest.

Section 24 of the Act amended 49 U.S.C. 60102 by adding a new requirement on documents incorporated by reference after January 3, 2013. The law states, “Beginning 1 year after the date of enactment of this subsection, the Secretary may not issue guidance or a regulation pursuant to this chapter that incorporates by reference any documents or portions thereof unless the documents or portions thereof are made available to the public, free of charge, on an Internet Web site.” To meet this requirement, PHMSA negotiated agreements with the majority of the standards-setting organizations with documents incorporated by reference in the pipeline safety regulations. The American Petroleum Institute (API), the American Society for Nondestructive

Testing (ASNT), and the National Association of Corrosion Engineers (NACE) International have signed such agreements with PHMSA.

This proposed rule would incorporate by reference consensus standards for assessing the physical condition of in-service hazardous liquids pipelines using in-line inspection (ILI) and stress corrosion cracking direct assessment (SCCDA). Periodic assessment of hazardous liquids pipelines is required by § 195.452. These sections allow use of the inspection techniques addressed in these standards. Incorporation of the consensus standards would assure better consistency, accuracy and quality in pipeline assessments conducted using these techniques. In addition, the incorporation of these standards would address part of the NTSB Recommendation P-12-3 by identifying crack defects and seam corrosion using crack tools and circumferential tools. PHMSA proposes to incorporate by reference the following consensus standards into 49 CFR Part 195: API STD 1163, “In-Line Inspection Systems Qualification Standard” (August 2005); NACE Standard Practice RP0102-2010 “Inline Inspection of Pipelines;” NACE SP0204-2008 “Stress Corrosion Cracking Direct Assessment;” and ANSI/ASNT ILI-PQ-2005, “In-line Inspection Personnel Qualification and Certification” (2005). Also, PHMSA proposes to allow pipeline operators to conduct assessments using tethered or remote control tools not explicitly discussed in NACE SP0102-2010, provided the operators comply with applicable sections of NACE SP0102-2010.

Note that this proposed rulemaking action addresses only Part 195, but PHMSA will consider making a similar proposed rule for 49 CFR Part 192 under a separate rulemaking action.

3.10 Electronic Reporting of Drug and Alcohol Testing Results

PHMSA’s pipeline safety regulations at 49 CFR 191.7 and 49 CFR 195.58 require electronic reporting of most pipeline safety reports through the PHMSA Portal. PHMSA proposes to also require electronic reporting for anti-drug testing results required under § 199.119 and alcohol testing results required under § 199.229. Pipeline operators with less than 50 covered employees are required to submit these reports only when PHMSA provides written notice. PHMSA proposes to modify these regulations to specify that PHMSA will provide notice to operators in the PHMSA Portal.

3.11 Post-Accident Drug and Alcohol Testing

PHMSA's regulations require documentation of decisions not to administer a post-accident *alcohol* test. The requirement to document a decision not to administer a post-accident *drug* test is implied in the regulations, but not explicitly required. PHMSA proposes to add a section to the post-accident drug testing regulation to require documentation of such a decision.

The NTSB issued the following safety recommendation (NTSB Recommendation P-11-12): "Amend 49 CFR 199.105 and 49 CFR 199.225 to eliminate operator discretion with regard to testing covered employees. The revised language should require drug and alcohol testing of each

employee whose performance either contributed to the accident or cannot be completely discounted as a contributing factor to the accident."

Accordingly, PHMSA also proposes to modify 49 CFR 199.105 and 49 CFR 199.225 by restating and further defining the existing requirement to conduct post-accident drug and alcohol testing of all employees except those for whom sufficient information establishes that they had no role in the accident.

4 Identification of Available Alternative Approaches

4.1 No Action

This was used as the baseline against which PHMSA compared all other alternatives.

Regulatory analyses typically consider an alternative in which the agency would not take any action, because it would maintain the status quo. No new requirements would be levied. No costs would be incurred to implement new requirements. No new benefits would result.

PHMSA has an obligation to ensure the safe and effective transportation of hazardous liquids and gases by pipeline. The changes proposed in this NPRM serve that purpose by clarifying the pipeline safety regulations, eliminating conflicting provisions, responding to new statutory mandates, and eliminating unduly burdensome requirements. A failure to undertake these actions would allow for the continued imposition of unnecessary compliance costs without increasing public safety. Accordingly, PHMSA rejected the "no action" alternative.

4.2 Proposed Revisions

This alternative was determined by PHMSA as the preferred regulatory option and is compared in the document with the baseline "no action" alternative.

PHMSA is proposing to make certain amendments, corrections, and editorial changes to the pipeline safety regulations. These revisions would eliminate inconsistencies and respond to several petitions for rulemaking and recommendations from our stakeholders, thereby facilitating the safe and effective transportation of hazardous liquids and gases by pipeline. The changes proposed in this NPRM serve that purpose by clarifying the pipeline safety regulations and eliminating unduly burdensome requirements.

5 Industry Information

The affected industry comprises owners and operators of regulated natural gas and hazardous liquid pipelines. These include a mix of large and small businesses, as well as publically owned

utilities, municipalities, and other organizations. Using a combination of PHMSA 2011 Annual Report data and the Dun and Bradstreet company database, there are approximately 3,000 regulated entities when all corporate subsidiaries are separately counted, with a total of roughly 150,000 onsite employees. There are wide variations across entities with respect to the share of employees actually engaged in pipeline operations, especially for public agencies.

Among these entities, common industry (NAICS) codes are 211111, Crude Petroleum and Natural Gas Extraction; 221210, Natural Gas Distribution; 324110, Petroleum Refineries; 486910, Pipeline Transportation of Refined Petroleum Products; 486210, Pipeline Transportation of Natural Gas; and 424720, Petroleum and Petroleum Products Merchant Wholesalers.

Many of the specific provisions in this rulemaking would apply only to specific subsets of this population, such as operators of gas gathering lines, as described in more detail in Section 6 below.

6 Definition and Evaluation of the Benefits and Costs

6.1 Data Sources and Limitations

Cost information is taken from PHMSA databases and external datasets as detailed more specifically below. In many cases the proposed changes are so small as to entail little to no quantifiable costs.

6.2 Costs

In the sub-sections below, each provision of the rulemaking is analyzed individually for potential cost implications.

6.2.1 Accident and Incident Notification

There is an existing requirement to notify the NRC by telephone of incidents at the “earliest practicable moment” after discovery. This provision would clarify the existing rule and accompanying guidance by providing additional specificity on the expected timeframe. As a clarification to an existing requirement, this section does not entail any significant changes in compliance costs.

6.2.2 Cost Recovery for Design Reviews

Under this provision, PHMSA would conduct design reviews for certain large-scale pipeline projects on a cost-recovery basis rather than at the agency’s own expense. The cost recovery provision would represent a transfer between parties, with no net societal costs or benefits. Particularly for projects meeting the project cost criterion, the relatively small cost of the design review is unlikely to hinder innovation in design techniques.

6.2.3 Operator Qualification Requirements for Parts 192 and 195

Operator Qualification (OQ) programs are designed to ensure that each worker conducting pipeline activities, such as operations and maintenance, has the appropriate knowledge and skills to perform that function. OQ programs are already required and in place for most pipeline operators, with some exceptions.

The proposed revisions to the OQ requirements include rearranging/renumbering with clarification to existing requirements and a number of small editorial changes and clarifications. These smaller changes do not involve any significant compliance costs because they largely restate existing requirements and resolve perceived ambiguities in the regulatory text, rather than impose substantively new requirements. Notable among these is a revision in scope that responds to NTSB Recommendation P-12-8; it specifies that pipeline operators' OQ plans must define the roles, responsibilities, and qualifications of any employees who have the authority to direct or supersede pipeline controllers' actions. As NTSB noted, it is inconsistent with safe operating principles to have controllers' actions guided or overridden by employees who do not necessarily have the same level of operator qualification. This change makes explicit that an employee who guides or overrules a pipeline controller is also effectively acting as a controller, even if he/she has another job title. PHMSA is making this change in response to NTSB's recommendation and to make the regulations as clear as possible. However, PHMSA already addresses this issue through its Frequently Asked Questions for the OQ program and its definition of "controller" (49 CFR 192.3 and 195.2), which includes anyone who monitors and controls the safety-related operations of a pipeline from a control room. Supervisors already fall under this functional definition to the extent that they direct first-line controllers, though this may not be clear to all operators. This clarification explicitly reinforces that point. As a clarification of an existing requirement, there are no incremental compliance costs.

PHMSA is also proposing a small revision to OQ programs to explicitly require a "management of change" component, i.e. that operators inform their employees if there are changes to their OQ-covered tasks. This proposed change again provides additional clarity to the regulations. However, PHMSA believes that there are little to no costs associated with the change, because communicating changes in employees' responsibilities is a normal business practice.

PHMSA's proposed OQ-related provisions also include two more substantive changes that may entail changes to operator practices and incremental compliance costs:

- OQ would be extended to three additional pipeline categories that currently avail of a modified recordkeeping approach that does not require individualized documentation:
 - Type A gas gathering lines in Class 2 locations
 - Type B onshore gas gathering lines
 - Regulated hazardous liquid gathering lines in rural areas

- The definition of “covered task” for OQ purposes would be revised to include new construction, rather than just operations and maintenance as under the current definition. This change would mean that some pipeline employees would be newly subject to the OQ requirements – that is, those who perform new construction activities, but not operations or maintenance.

The proposed rule would require that each affected firm (1) create and follow a written OQ plan, (2) conduct yearly reviews of the effectiveness of the program, and (3) maintain records for each qualified individual. Their OQ plans would need to identify covered tasks and ensure through evaluation that each employee who performs a covered task has the required qualifications.

PHMSA has previously estimated that establishing a new OQ program entails costs of approximately \$1,200 per employee over a 10-year period, or the annualized equivalent of about \$160 per employee per year (using a 7% discount rate).⁴

PHMSA does not have precise counts of the number of firms and employees who would be affected by this proposed regulatory change. However, the number can be estimated using a combination of Annual Report filings⁵ and external data.

Among gas pipeline operators with Type B gathering lines or Type A gathering lines in Class 2 locations, most are already subject to OQ provisions because they also have transmission lines and/or Type A gathering lines in Class 1 locations. However, a total of 78 gas operators listed in the 2011 Annual Report would be newly subject to the OQ requirements. Dun and Bradstreet company data for these 78 operators estimate they have a combined total of 7,365 onsite employees. Among hazardous liquid pipeline operators, there 31 operators listed in the 2011 Annual Report who operate rural gathering lines but not non-rural gathering lines, and thus would be newly subject to the full-fledged OQ provisions. Dun and Bradstreet data on these 31 operators list a total of 1,143 onsite employees.

The number of firms and employees who would be affected by the revised definition of “covered task” – that is, those who conduct new construction activities but not operations and maintenance – cannot be generated from these data sources. Instead, PHMSA estimated this figure based on industry experience. In general, most firms that perform new construction also conduct operations and maintenance, but there are exceptions. Pipeline operators registered with PHMSA have a combined total of about 150,000 onsite employees according to the Dun and Bradstreet company data. A reasonable estimate is that 5% of these, or 7,500 employees, will fall into this newly regulated category because they perform new construction but not operations

⁴ DOT Office of the Chief Information Officer, Supporting Statement to OMB Control No. 2137-0600. See also Federal Register Volume 76, Number 205 (Monday, October 24, 2011), pp. 65778-65779.

⁵ PHMSA, <http://www.phmsa.dot.gov/pipeline/library/data-stats>

or maintenance. This rough estimate appears to be fairly conservative, given that the Bureau of Labor Statistics estimates total employment of Plumbers, Pipefitters, and Steamfitters (SOC code 472152) in the main relevant industries (Oil and Gas Extraction, Natural Gas Distribution, and Pipeline Transportation) at 6,120 persons.⁶ Moreover, these figures likely include employees who also perform maintenance and are thus already covered by OQ requirements.

Overall, then, operators with a total of about 16,008 employees (that is, 7,365 + 1,143 + 7,500) would potentially be newly subject to the requirement to participate in an OQ plan, either because of the provisions related to gathering lines or because of the change in covered tasks to include new construction. For cost estimation purposes, we assume conservatively that all of these employees would be subject to OQ, even though not all of them necessarily work on “covered tasks” as that term is defined in the proposed regulations, and that there is no overlap in the employees affected by the different provisions. Therefore, incremental compliance costs for this OQ provision are in the range of \$2.6 million per year (i.e., 16,008 employees * \$160 per employee per year).

6.2.4 Special Permit Renewal

This section establishes a new set of administrative procedures to handle Special Permit renewals. Since Special Permits previously did not carry expiration dates, this change is necessary to have a defined process for renewals. This proposal deals solely with agency procedures and has little or no direct costs.

6.2.5 Farm Taps

In this provision, farm taps would be removed from the DIMP program in favor of a less stringent set of inspection activities and over-pressurization protection equipment. This change would yield cost savings for operators. The overall cost savings could not be quantified because PHMSA’s database does not record the number of farm taps. However, it was previously estimated that implementing a DIMP program and conducting required mitigation would cost the affected industry approximately \$78 million per year after start-up. Removing farm taps from DIMP would relieve a small portion of these costs.

6.2.6 Control Room Team Training

Many pipeline operators already conduct team training and exercises that include both controllers and others staff (e.g. supervisors) that controllers may interface with during normal, abnormal, and emergency situations. For these operators, the proposed revision will have little to no impact on their training approach or compliance costs. For operators who currently do not conduct this type of team training, an additional training module will be required. PHMSA

⁶ Bureau of Labor Statistics, Occupational Employment Statistics query system, May 2012, SOC code 472152. <http://data.bls.gov/oes/datatype.do>

previously estimated that there are approximately 524 control room supervisors for hazardous liquids pipelines and 631 for gas pipeline (1,155 total); that these supervisors' average hourly wages (including overhead) were around \$75; and that similar types of control room training require 4 hours per person per year in labor costs plus \$100 per person for the training itself.⁷ Putting these figures together, and assuming very conservatively that no operators are already conducting this type of team training, the annual compliance cost is \$462,000 (that is, $1,155 * 4 * \$75 = \$346,500$ for the opportunity cost of the supervisors' time, plus $1,155 * \$100 = \$115,500$ for the cost of the training itself)

6.2.7 Reversal of Flow or Change in Product

There would be relatively few notifications under this proposed section since it excludes temporary changes and pipelines designed for bidirectional flow. Moreover, PHMSA's intention is that changes in batched petroleum products (e.g. gasoline, diesel, jet fuel) would not constitute a reportable "change in product" as these are commonplace. Overall, based on historical information, PHMSA estimates that it will receive approximately 8 notifications per year. Only a simple notification would be required, which could be handled electronically, so total compliance costs would be minimal.

6.2.8 Editorial Amendments

These editorial changes address errors in formulae and other small discrepancies in the pipeline safety regulations. There are no changes to substantive requirements or associated compliance costs.

6.2.9 Pipeline Assessment Tools

This section clarifies existing requirements for the inspection of hazardous liquids pipelines by citing specific technical standards for those inspections and incorporating the standards by reference. This proposed rule would address in part NTSB recommendation P-12-3 by incorporating by reference consensus standards for assessing the physical condition of in-service hazardous liquids pipelines using ILI and SCCDA. Incorporation of the consensus standards would assure better consistency, accuracy and quality in pipeline assessments conducted using these techniques.

PHMSA had asked the Standards Developing Organizations to develop these standards, and now that they are developed, PHMSA is proposing to adopt them to bring consistency throughout the

⁷ PHMSA, Pipeline Safety: Control Room Management/Human Factors, Revision of Implementation Period, Regulatory Evaluation, June 2011.

industry. These standards provide tables to guide tool section choices and help select the right tool for the right anomaly. .

Overall, these consensus standards and their guidance on tool selection should not entail additional costs for pipeline operators. The standards reflect widespread industry practices, so PHMSA does not expect any incremental compliance costs.. The cost of the standards documents themselves has also been relieved by PHMSA's arranging for these documents to be freely available online.

6.2.10 Retention of Samples and Additional Testing

This change addresses a discrepancy between two sections of the regulations and does not entail any change in compliance costs.

6.2.11 Electronic Reporting of Drug and Alcohol Testing Results

This section requires electronic reporting of testing results through the same PHMSA portal that is used for other reporting. This change should yield small cost savings for operators and for PHMSA compared to hard-copy documentation.

6.2.12 Post-Accident Drug and Alcohol Testing

Under the provisions of this section, operators would be required to document any decisions not to administer post-accident *drug* testing to a particular employee, as is required for post-accident *alcohol* testing. Although this requirement is somewhat implied by the current regulations, it is not explicitly stated and may not be a universal practice. There would therefore be small recordkeeping and documentation costs associated with the provision.

The regulation does not specify a precise form that the documentation must take, and no specific estimate of the preparation time is available. Given the requirements, a reasonable estimate would be 2 hours per incident to prepare documentation on any decision not to administer drug testing. According to the Bureau of Labor Statistics, the average wage rate of a Human Resources Specialist (Occupation Code 13-1071) in the Oil and Gas Extraction industry (NAICS 211100) is \$37.12. (The figures are similar for other job series and industries that may be relevant.)

Over the past 5 years, there has been an average of 609 reported pipeline incidents per year. Although many firms may already document their decisions since this is required for post-accident alcohol testing and may be useful for company records, we assume conservatively that each incident would require some new documentation. The total compliance cost is on the order of \$45,000 per year (609 incidents * 2 hours * \$37.12/hour).

6.2.13 Cost Summary

Overall, these changes are largely minor provisions with little or no substantive change to industry practices or compliance costs. For the three provisions with quantifiable costs, these are estimated at \$2.6 million per year for the Operator Qualification provisions, \$45,000 per year for the Post-Accident Testing provisions, and \$462,000 per year for the Control Room Management training provisions. These estimates are generally upper bounds, in that they assume that pipeline operators are not already in compliance with the proposed regulations.

Some of these cost increases would be offset by the reduction in DIMP-related costs associated with the Farm Tap provisions, though these could not be estimated due to data limitations.

6.3 Benefits

Pipeline incidents can result in death, injury, property damage, and environmental damage. The benefits of the proposed regulatory changes stem primarily from improvements to regulatory clarity and from upgraded safety requirements that are intended to reduce the number of pipeline incidents and their severity.

Estimates of avoided incident costs are calculated using information on fatalities, injuries, and property damage (including lost product). Fatalities and injuries are converted to dollar terms using values from departmental guidance documents, \$9.1 million per fatality and \$955,500 for an injury.⁸ [Based on departmental guidance, the injury and fatality figures rise 1.07% per year to account for wage increases over time.]

In the sub-sections below, the expected benefits of each provision of the rulemaking are analyzed individually.

6.3.1 Accident and Incident Notification

This is a clarification of an existing regulation and is not expected to generate quantifiable safety benefits. However, improving the clarity of the regulations with an objective standard is likely to improve overall compliance and timeliness. In addition, there are inherent safety benefits in having timely information on incidents, both for emergency response and for incident investigation.

⁸ Trottenberg, Polly and Robert Rivkin. “Guidance on Treatment of the Economic Value of a Statistical Life (VSL) in U.S. Department of Transportation Analyses.” February 28, 2013. The injury number is equivalent to a “serious” injury on the Abbreviated Injury Scale and is 10.5% of the VSL.

6.3.2 Cost Recovery for Design Reviews

Cost recovery represents a transfer between parties and does not entail societal benefits. However, PHMSA believes that this change will promote safety by allowing the agency to conserve its limited resources for other high-priority activities.

6.3.3 Operator Qualification Requirements for Parts 192 and 195

The societal benefits of this provision will take the form of greater pipeline integrity and a potential reduction in pipeline incidents related to the actions of under-qualified personnel. Ensuring that pipeline operations and maintenance personnel have the appropriate job skills and training is a fundamental safety requirement.

Quantifying these safety benefits with precision is hindered by limitations in PHMSA's incident databases. Notably, human error by under-qualified pipeline personnel can be the root cause of incidents that are formally classified across a number of causation codes, including incorrect operation, corrosion, material/weld/equipment failure, and other. Expected benefits of the key OQ provisions are discussed individually below.

Clarification on scope

Clarifying the scope of the OQ requirements to include control room supervisors and others who may direct or supersede the actions of pipeline controllers responds to NTSB Recommendation P-12-008. The proposed revision makes current requirements more explicit and removes potential inconsistencies in the OQ coverage of supervisors and other personnel. While the safety benefits cannot be readily quantified, NTSB noted that the lack of a clear OQ requirement for all control room personnel was a contributing factor to the July 2010 pipeline rupture incident in Marshall, Michigan, which involved cleanup costs in excess of \$700 million.⁹

New Construction

The expansion of OQ requirements to new construction helps to reduce incidents that occur during the construction and installation process, by ensuring that workers conducting these tasks have the appropriate skills and do not make avoidable errors. Having appropriately trained staff at installation can also reduce certain types of incidents that are ultimately related to defects in manufacturing, as some of these defects can be identified by qualified personnel and remedied before installation.

Many operators already employ OQ for new construction, even for tasks that are not covered by the current regulations, simply because it is prudent to do so, and ultimately cost-effective when compared against the cost of future incidents and disruptions. However, PHMSA staff are aware of numerous cases in which non-qualified personnel have been used, without adequate training,

⁹ National Transportation Safety Board, Pipeline Accident Report NTSB/PAR-12/01, <http://www.nts.gov/doclib/reports/2012/par1201.pdf>

for safety-critical pipeline installation tasks such as handling and bending of pipe, coating, padding, and backfilling. PHMSA's inspectors have gathered extensive records of installation errors, including improper welding techniques, improper use of coatings and epoxy, failure to screen backfill material, inadequate use of sidebooms for lowering pipe, and insufficient burial depth. There have also been more fundamental problems such as failure to use the local "one-call" notification system during excavation, which can lead to hitting other underground utilities. While not all of these installation errors will necessarily result in an incident, they are deviations from best practice that can be addressed through an OQ program.

Errors made during new construction can result in immediate incidents, and may also set the stage for future incidents. As one example, the Tennessee Regulatory Authority investigated a transmission line rupture in 2012 and found that it was ultimately caused by improper handling during construction in 1982, which caused a crack that grew over time. In 2007, investigation of the Plains All-American Pipeline found a section of pipe that was dented due to its having been placed on top of a large rock, an obvious installation error that almost certainly would have been detected if qualified personnel were used for this portion of construction.

In addition to these qualitative information from these inspection-based reports, PHMSA's incident summary¹⁰ for the 20-year period from 1993 to 2012 shows a total of 72 incidents attributed to "construction, installation or fabrication-related" causes, with no injuries and a total of \$26 million in property damage. An additional 41 incidents were attributed to "manufacturing related" causes, with 8 fatalities, 51 non-fatal injuries, and \$404 million in property damage.

Clearly, not all of these incident costs are related to human error by under-qualified personnel, and human error can never be fully eliminated, even with the most stringent qualification requirements. PHMSA does not have data on the rate of avoidable human error in new pipeline construction or the effectiveness rate of OQ programs. However, based on the above-cited incident investigations and other experience, PHMSA staff believe that (a) human error is a contributing factor to many incidents, and (b) having a systematic approach to ensuring the qualifications of pipeline personnel is an effective means of reducing human-error incidents.

Based on this experience, a safety effectiveness rate of 20% is believed to be reasonable for estimating benefits with respect to avoiding relevant installation-related incidents. For manufacturing-related incidents, a lower rate of 5% is assumed, since not all manufacturing-related defects can be identified even by skilled installation personnel.

¹⁰ http://primis.phmsa.dot.gov/comm/reports/safety/AllPSIDet_1993_2012_US.html?nocache=307

Pipeline Incidents Related to New Construction, 1993-2012, with Estimated Benefits for New Operator Qualification Provisions

Incident Cause Code	Incident Count	Fatal Injuries (Monetized Societal Cost)	Non-Fatal Injuries (Monetized Societal Cost)	Reported Property Damage	Total Incident Costs	Assumed Safety Effectiveness Rate for this Cause Code	Incident Costs Avoided, 20 Years	Annual Equivalent
Construction, installation or fabrication-related	72	0 (\$0)	0 (\$0)	\$25.9m	\$25.9m	20%	\$5.2m	\$0.3m
Manufacturing-related	41	8 (\$72.8m)	51 (\$48.7m)	\$404.3m	\$525.8m	5%	\$26.3m	\$1.3m
TOTAL								\$1.6m

Using a these safety effectiveness rate for benefits calculation, the extension of OQ requirements to new construction would yield safety benefits in the range of \$1.6 million per year in avoided incident costs, as calculated in the table above.

Gathering Lines

Data prior to 2010 do not distinguish Type A from Type B gas gathering lines, so there is limited data for the provision that extends OQ requirements to these lines. Using the available data from 2010-2012, there were 5 incidents involving the affected categories of onshore gas gathering lines (Type A in Class 2 locations and Type B) during this period, with no injuries and a total of \$469,000 in property damage, or an average of about \$156,000 per year.

As with the new construction provision, the precise share of incident consequences that could be avoided through the extension of OQ programs is not known, but is believed to be significant based on incident investigation experience. Using a 20% safety effectiveness rate for an illustrative calculation, the OQ provisions related to gathering lines would prevent \$31,200 in incident consequences ($\$156,000 * 0.20$) per year.

The OQ requirements may also help to prevent a high-consequence, low-probability event caused by an error made by under-qualified personnel. While there have been no fatal incidents with gathering lines in recent years, future years may experience greater risk exposure with

onshore gathering lines, for example with the recent increases in gas and oil extraction activity in areas such as North Dakota.

General

In addition to the specific benefits quantified above, there are numerous non-quantifiable benefits to pipeline operations associated with general OQ requirements. These benefits, as described in a 1999 Research and Special Programs Administration (RSPA) Final Rule,¹¹ include:

- Eliminating and correcting inadequate operating and maintenance procedures, thereby potentially reducing system downtime
- Increasing the formal communications between operator and workers
- Increasing the attention and oversight on safety-related procedures
- Improving the documentation that ensures a qualified workforce
- Potentially lower costs for insurance and workers' compensation, and reduced liability exposure due to formalized qualification procedures.

While these benefits cannot be readily quantified, they could have a real impact in improving both the safety and the efficiency of pipeline operations. Preventative measures to avoid high-consequence incidents also help to maintain the public's trust with the pipeline industry.

6.3.4 Special Permit Renewal

This section establishes a new set of administrative procedures to handle the renewal of Special Permits. This is an agency procedural change with little or no quantifiable benefits.

6.3.5 Farm Taps

This section would remove farm taps from DIMP in favor of an alternative, less stringent inspection program that is better suited to the relatively low risks associated with farm taps. Because farm taps are already covered by Part 192 regulations and by the proposed new maintenance requirements, PHMSA expects that there will be no adverse change in safety outcomes from this change.

6.3.6 Reversal of Flow or Change in Product

Although this provision is expected to be used only infrequently, it is important for PHMSA to be informed of any major changes to products transported and the direction of flow. In the event of an incident, emergency responders need basic information about the commodity and the direction of the flow in order to mitigate consequences and protect the public. Therefore, this provision is expected to yield small safety benefits.

¹¹ US DOT RSPA 1999 Docket No. RSPA-98-3783; Amendment 192-86; 195-67

6.3.7 Control Room Team Training

Team training and exercises are well-established techniques that help to ensure that all control center staff have the training, skills, incident protocols, and working relationships needed to avoid incidents and to respond appropriately when incidents do occur. By explicitly requiring that this training include not only controllers but also supervisors and others with whom they may interface, PHMSA expects that safety benefits will accrue in the form of avoided pipeline incidents and mitigated damages. These benefits are not readily quantifiable because PHMSA's incident database does not specifically track incidents related to control room interactions. However, NTSB noted in its report on the July 2010 pipeline rupture in Marshall, Michigan, that the lack of team training was a contributing factor to the severity of the incident. According to NTSB, the operator in this case "failed to train control center staff in team performance, thereby inadequately preparing the control center staff to perform effectively as a team when effective team performance was most needed."¹²

6.3.8 Editorial Amendments

This is minor correction with no direct safety benefits, though the improved clarity of regulations helps to improve compliance.

6.3.9 Pipeline Assessment Tools

Safety benefits of this section stem from adopting specific technical standards to help operators interpret existing requirements. This aids with compliance and ensures consistency across the industry.

6.3.10 Electronic Reporting of Drug and Alcohol Testing Results

This is a change in the method of reporting and is not expected to yield quantifiable safety benefits. However, electronic transmission and notification allows PHMSA to more readily incorporate testing results into its safety analyses and investigations, and allows scarce resources to be allocated to other activities rather than managing hardcopy filings.

6.3.11 Post-Accident Drug and Alcohol Testing

This change responds to NTSB recommendation P-11-12 to ensure that post-accident drug and alcohol testing is administered where appropriate. In addition to slightly restating the existing requirements, it also requires that operators document any decision not to administer a post-accident drug test (as is required for alcohol tests). The safety benefits from this change relate to incident investigation and root-cause analysis. Having documentation of why a drug test was not administered in a particular case will provide incident investigators with more of the toxicology

¹² National Transportation Safety Board, Pipeline Accident Report NTSB/PAR-12/01, <http://www.nts.gov/doclib/reports/2012/par1201.pdf>

information needed to identify the likely cause(s) of incidents that occur. This, in turn, helps to identify trends and prevent future pipeline incidents.

6.3.12 Benefits Summary

As discussed in the sub-sections above, many of the proposed changes are too minor to support quantification of benefits. However, PHMSA believes that updating regulations, removing inconsistencies, providing clarification, and incorporating industry standards all help to improve compliance with pipeline safety regulations and to reduce the likelihood of a serious pipeline incident.

The proposed Operator Qualification (OQ) provisions more specifically ensure that pipeline construction personnel and operations and maintenance personnel have the appropriate skills for the functions they are performing. This would reduce the likelihood of human error-related incidents, with benefits roughly estimated at \$1.6 million per year for new construction and \$31,200 per year for gathering lines. OQ also has a range of intangible benefits including improved operations and communications, as described in more detail above.

The proposed changes related to drug and alcohol testing also assist PHMSA, NTSB, and other investigators in their efforts, by providing additional documentation of testing decisions. These investigations help to prevent future pipeline incidents by identifying the causes of incidents that occur.

7 Summary and Conclusion

This package of proposed regulatory changes would address errors and inconsistencies in the current regulations, provide additional clarifications, and incorporate industry standards. The proposed changes also address statutory requirements from the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (Public Law 112-90) and safety recommendations from the NTSB, as well as petitions for rulemaking. Many of the proposed revisions are small changes that would not lead to substantial changes in regulatory requirements, operator practices, or overall costs and benefits.

Combining all of the proposed changes, annual compliance costs are estimated at approximately \$3.1 million, less savings to be realized from the removal of farm taps from the DIMP requirements. Annual safety benefits cannot be quantified as readily due to data limitations, but are in the range of \$1.6 million per year in avoided incident costs, plus numerous intangible benefits from the improved clarity and consistency of regulations and improved abilities to conduct post-incident investigations. Although the quantified benefits do not exceed the quantified costs, PHMSA believes that these non-quantified benefits are significant enough to outweigh the costs of compliance. In particular, improvements to Operator Qualification and post-incident investigation may prevent a future high-consequence event. At an annual compliance cost of \$3.1 million, the proposed new Operator Qualification and post-incident

testing requirements would be cost-effective if they prevented a single fatal incident over a 3-year period.

8 Initial Regulatory Flexibility Act Analysis

8.1 Reasons for Agency Action

PHMSA works to ensure the safety of the nation's gas and hazardous liquid pipelines. Government regulation of pipeline safety standards addresses the market failure of negative externalities, namely the costs that pipeline incidents impose on other parties for which there may be no market compensation. PHMSA's safety regulations require periodic updating to remove errors and inconsistencies, update technical standards that are incorporated by reference, modify agency administrative procedures, and address gaps in existing safety requirements. The proposed rule comprises a set of miscellaneous changes to the Pipeline Safety regulations, with the goal of improving clarity, compliance, and overall safety.

8.2 Objectives of, and legal basis for, the proposed rule

The proposed rule is designed to enhance pipeline safety through a set of small improvements to the Pipeline Safety Regulations. The ultimate objective is to lessen the frequency and societal consequences of pipeline incidents, including property damage, environmental degradation, personal injury, and loss of life. PHMSA's overall mandate to regulate pipeline safety is set by federal law under 49 USC 60102 et seq. More specifically, the proposed rule addresses several statutory requirements from the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (Public Law 112-90). Several provisions also address safety recommendations from the National Transportation Safety Board, an independent Federal agency charged with investigating serious transportation accidents and making safety recommendations.

8.3 Description and estimate of the number of small entities to which the proposed rule would apply; projected reporting, recordkeeping and other compliance requirements of the proposed rule and their impact on small entities

Affected entities for this proposed rule are owners and operators of gas and hazardous liquid pipelines. Of the roughly 3,000 separate entities represented in PHMSA's 2011 Annual Report, about 2,700 would be considered small entities using the Small Business Administration (SBA) size standard of having 500 employees or fewer.¹³

¹³ This is an estimate based on external Dun and Bradstreet company data, using SBA standards for the most common North American Industry Classification System (NAICS) codes represented among PHMSA registrants, including oil and gas extraction and gas distribution. The SBA standards vary by industry and include a mixture of revenue-based and headcount-based standards. Moreover, the ability to classify an entity as small is constrained by the limitations of the available data and the complexities of corporate structure; many registrants are owned by other companies or are subdivisions of public agencies.

As detailed in Section 6 above, several of the proposed changes affect only small subsets of the overall pipeline industry. Others provisions affect the pipeline industry more broadly, but consist of minor changes with little to no impact on overall compliance costs for affected entities. The two provisions with quantifiable costs are Operator Qualification (OQ) and documentation of post-accident drug tests.

The OQ provision is estimated to entail compliance costs in the range of \$160 per employee per year. Based on Bureau of Labor Statistics employment data, the average wage for pipefitters (occupation code 47-2152) in the natural gas distribution industry is \$26.76 per hour, or \$55,660 per year. Therefore the OQ requirements would represent a 0.3% increase in labor costs, or slightly less if other non-wage costs such as payroll taxes and benefits are included. Of the 109 registrants that would be newly subject to the OQ provisions for gathering lines, 94 have fewer than 500 employees, and thus are considered “small entities” using the SBA standards for the most common industries represented. The number of small entities that would be subject to the OQ provisions for new construction cannot be estimated due to the limitations of the registration data.

The post-accident drug testing provision would entail recordkeeping costs in the range of \$74 per incident. All 2,700 small entities would *potentially* be affected by this change. However, pipeline incidents are relatively rare events and additional recordkeeping would only be required in the event of a decision *not* to administer a post-accident drug test, so overall compliance costs would be minimal.

8.4 Federal rules which may duplicate, overlap or conflict with the proposed rule

PHMSA believes that no other Federal rules duplicate, overlap, or conflict with the proposed rule. In fact, many of the provisions are designed to eliminate inconsistencies in the existing regulations.

8.5 Alternatives considered

In addition to the proposed package of regulatory updates, PHMSA considered a no-action alternative in which no changes would be implemented. The no-action alternative was rejected because it would not respond to the statutory requirements of the Act or to NTSB recommendations, would allow for continued inconsistencies in regulations, and would result in the continued imposition of unnecessary compliance costs without increasing public safety. Because the proposed rule is focused on ensuring safety, has very small incremental compliance costs, and does not have a significant economic impact on small entities, PHMSA did not consider establishing different compliance or reporting requirements or timetables for small entities.

8.6 Effect on the cost of credit

The proposed rule is not projected to increase the cost of credit for small entities in any way.

8.7 Summary and conclusion

The proposed rule responds to requirements in the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 and to NTSB recommendations. It would address errors and inconsistencies in the current Pipeline Safety Regulations, update technical standards that are incorporated by reference, modify agency administrative procedures, and address gaps in existing safety requirements. The proposed rule could affect a substantial number of small entities because of the market structure of the gas and hazardous liquids pipeline industry, which includes many small entities. Approximately 2,700 small entities could be affected by at least one portion of the rulemaking, with smaller numbers affected by particular provisions. Estimated compliance costs indicate that these impacts would not be significant. The Operator Qualification provision would entail new costs for small entities in the range of \$160 per employee per year, or about 0.3% of salary for a typical pipeline employee. The post-accident drug testing provision would add \$74 in documentation costs per reportable incident. The other provisions would not add appreciable costs, and at least one provision (Farm Taps) would yield compliance cost savings.