

Preliminary Regulatory Analysis

DEPT OF TRANSPORTATION
DOT-ERS

NOV 12 2 18 30

Notice of Proposed Rulemaking

Pipeline Safety:

**Pipeline and Liquefied Natural Gas Reporting
Requirements**

[Docket No. PHMSA-08-0291]

RIN2137-AE33

February 2009

ECONOMETRICA, INC.

ECONOMETRICA, INC.

Table of Contents

Executive Summary	iii
Introduction.....	1
1. Background	2
2. Regulatory Impact Analysis.....	3
2.1. Introduction.....	3
2.2. Identification of the Problem	3
2.3. Identification of Available Alternative Approaches	5
2.3.1. Baseline: No Action.....	5
2.3.2. Option 2. Require Direct Data Submission to the NPMS.....	6
2.3.3. Option 3. Different Reporting Requirements for Small Operators.....	7
2.3.4. Option 4. Adopt Proposed NPRM Changes in Reporting Requirements	7
2.3.5. Linking Proposed Actions to Improved Pipeline Data Quality and Risk Targeting.....	8
2.4. Baseline Data	10
2.4.1. Pipeline Information	10
2.4.2. Baseline Risk Trends	12
2.4.3. Electronic Filing Baseline.....	17
2.5 Costs of Complying with the Requirements of the Proposed Rule	19
2.5.1 Requirement One - Change the Scope of Part 191 to Reflect the Change to the Definition of Gas Gathering Line in Part 192.....	20
2.5.2 Requirement Two - Change the Definition of “Incident” for Gas Pipelines and LNG Facilities.....	21
2.5.3. Requirement Three - Require Operators of HL Pipelines to Report Pipeline Information by State in the Annual Report for HL Pipelines	24
2.5.4. Requirement Four - Require LNG Operators to Submit Incident and Annual Reports	26
2.5.5. Requirement Five - National Pipeline Operator Identification Registry	27
2.5.6. Requirement Six - Electronic Reporting and Filing of Required Reports	31
2.5.7. Requirement Seven - Merge Gas Transmission Gas Integrity Management Semi-Annual Performance Measures Report with the Gas Transmission Operator Report.....	32
2.5.8. Requirement Eight - Require a Safety-Related Condition Report.....	34
2.5.9 Requirement Nine – Modify HL Operator Telephonic Notification of Accident Reporting Requirement.....	34
2.5.10. Total Costs Associated with the Proposed Rule	35
2.6. Benefits of the Proposed Rule.....	35
2.6.1. Average Number of Significant Pipeline Incidents	36
2.6.2. Calculated Annual Societal Costs Using a VSL of \$5.8 Million.....	37
2.6.3. Comparison of the Costs and Benefits.....	38
Appendix A— Analyses Using VSLs of \$3.2 and \$8.4 Million	42
A.1. Significant Incidents in the Pipeline System.....	42
A.2. Comparison of the Costs and Benefits.....	42
Appendix B — Regulatory Flexibility Analysis.....	47
Initial Regulatory Flexibility Analysis.....	47

Appendix C — Paperwork Reduction Act Analysis (44 U.S.C. 3501 et seq.).....	54
C.1 Paperwork Reduction	54
C.2 Burden Hours and Cost of PHMSA Proposed Rule to HL, NG Pipeline Operators and LNG Facility Operators.....	55
Appendix D —PHMSA/OPS Environmental Checklist and Assessment	60
D.1 Environmental Checklist.....	60
Project Description.....	60
D.2 Draft Environmental Assessment.....	65
D.2.1 Background	Error! Bookmark not defined.
D.2.2. Market Segments Affected and Requirements of the Proposed Rule.....	Error! Bookmark not defined.
D.2.3 Alternatives Considered	Error! Bookmark not defined.
D.2.4. Environmental Effects of the Proposed Rule..	Error! Bookmark not defined.

Executive Summary

The Pipeline and Hazardous Materials Safety Administration (PHMSA) has issued a Notice of Proposed Rulemaking (NPRM) to improve the reliability and utility of data collections from hazardous liquid (HL) pipeline operators, natural gas (NG) pipeline operators, and liquefied natural gas (LNG) facility operators. The rule proposes revisions to the accident and operator annual reports that are intended to address recognized and needed improvements to the data. These improvements will maximize the quality, objectivity, utility, reliability, and integrity of the pipeline data. As part of PHMSA's strategy to become more risk-based and data driven, these improvements will enhance PHMSA's ability to: understand, measure, and assess the performance of operators; integrate safety data to allow a more accurate assessment of risk; and simplify paperless reporting by operators.

PHMSA proposes the following regulatory amendments and changes to the 49 CFR to enhance general data and data management improvements for pipelines: (1) Modify the scope of part 191 addressed in 49 CFR Section 191.1 to reflect the changes made in the scope of part 192 to the definition of gas gathering lines; (2) Change the definition of an "incident" to require an operator to report a fire not intentionally set by the operator, or an explosion, and establish a volumetric basis for reporting unexpected or unintentional gas loss; (3) Require operators of hazardous liquid pipelines to submit pipeline information by State on the annual report for hazardous liquid pipelines; (4) Require operators of Liquefied Natural Gas (LNG) facilities to submit incident and annual reports; (5) Create and require participation in a National Pipeline Operator Registry; (6) Require operators to report and file data electronically whenever possible; (7) Merge the natural gas transmission integrity management (IM) Semi-Annual Performance Measures Report with the annual reports; (8) Require operators to use a standard form in submitting Safety-Related Condition Reports; and (9) Modify HL operator telephonic notification of accidents.

These revisions will result in improvements not only to the data, but also to the analyses PHMSA relies on to make critical safety-related decisions and allocate scarce agency resources based on risk.

In this regulatory evaluation report, the benefits and costs of the proposed regulatory changes are examined. Additionally, the report includes an environmental assessment and addresses other mandatory analyses, including those required by the Regulatory Flexibility Act and the Paperwork Reduction Act (PRA). The analyses find that the proposed rule is not expected to adversely affect the economy or the environment.

Both the expected costs and projected benefits of the rule are estimated to be relatively low, and the rule is likely to yield net benefits at very low levels of effectiveness. The aggregate cost of the proposed rule to all pipeline operators is between \$1.3 million and \$2.0 million. The present value of net benefits is estimated to range from about \$62 million to \$76 million. The rule is also considered to be cost effective if only one

incident is avoided approximately every 19 months due to the rule. From an economic perspective, these analyses demonstrate that the rule is in the public interest. This is neither an economically significant regulatory action under Section 3(f)(1) of Executive Order 12866 nor under the U.S. Department of Transportation's (DOT) regulatory policies and procedures (44 FR 11034).

Introduction

The Pipeline and Hazardous Materials Safety Administration (PHMSA) has issued a Notice of Proposed Rulemaking (NPRM) to improve the reliability and utility of data collections from operators of hazardous liquid (HL) pipelines, natural gas (NG) pipelines, and liquefied natural gas (LNG) pipelines. The revisions to the accident reports and operator annual reports are intended to address needed improvements to the data and to maximize the quality, objectivity, utility, reliability, and integrity of the pipeline data. As part of PHMSA's strategy to become more risk-based and data driven, these improvements will enhance PHMSA's ability to: Understand, measure, and assess the performance of operators; integrate safety data to allow a more accurate assessment of risk; and simplify paperless reporting by operators.

PHMSA's proposed rule is in response to various recommendations from the Government Accountability Office (GAO), the U.S. Department of Transportation Inspector General (DOTIG), the National Transportation Safety Board (NTSB), PHMSA and DOT internal assessments, and industry petitions for improved data quality to evaluate the safety performance of the pipeline industry and to aid regulatory decision making. PHMSA proposes the following regulatory amendments and changes to the 49 CFR to enhance general data and data management improvements for pipelines:

1. Modify the scope of part 191 addressed in 49 CFR Section 191.1 to reflect the changes made in the scope of part 192 to the definition of gas gathering lines.
2. Change the definition of an "incident" in 49 CFR Section 191.3 to require an operator to report a fire not intentionally set by the operator, or an explosion, and establish a volumetric basis for reporting unexpected or unintentional gas loss.
3. Require operators of hazardous liquid pipelines to submit pipeline information by state on the annual report for hazardous liquid pipelines.
4. Require operators of Liquefied Natural Gas (LNG) facilities to submit incident and annual reports.
5. Create and require participation in a National Pipeline Operator Registry.
6. Require operators to report and file data electronically whenever possible.
7. Merge the natural gas transmission integrity management (IM) Semi-Annual Performance Measures Report with the annual reports.
8. Require operators to use a standard form in submitting Safety-Related Condition Reports.
9. Modify hazardous liquid operator telephonic notification of accidents.

These revisions will result in improvements not only to the data, but also to the analyses PHMSA relies on to make critical safety-related decisions and allocate scarce agency resources based on risk.

The proposed regulatory changes are authorized by statutory authority to carry out pipeline safety duties under 49 U.S.C. 60101 et seq. (the pipeline safety laws), 49 U.S.C. 5101 et seq. (the hazardous material transportation laws), and the Pipeline Inspection, Protection, Enforcement and Safety Act of 2006 (PIPES) (Public Law No.109-468).

Executive Order 12866 directs all Federal agencies to develop both preliminary and final regulatory analyses if their proposed regulations are likely to be “significant regulatory actions” that may have an annual impact on the economy of \$100 million. The Order also requires a determination as to whether a proposed rule could adversely affect the economy or a section of the economy in terms of productivity and employment, the environment, public health, safety, or State, local or tribal governments. In accordance with the regulatory philosophy and principles provided in Sections 1(a) and (b) and Section 6(a)(3)(C) of Executive Order 12866, an economic analysis of the proposed regulatory changes is required.

DOT does not consider this proposed rule to be a significant regulatory action under section 3(f) of Executive Order 12866 (58 FR 51735; October 4, 1993). This NPRM is also not significant under DOT’s regulatory policies and procedures (44 FR 11034; February 26, 1979). PHMSA prepared a Draft Regulatory Evaluation for this NPRM and placed it in the public docket.

1. Background

The Natural Gas Pipeline Safety Act of 1968 and the Hazardous Liquid Pipeline Safety Act of 1979 require the reporting of incidents on natural gas transmission and distribution pipelines. These reporting requirements, as defined in 49 CFR Section 191.15, mandate that operators report any incident that meets certain specific conditions. These requirements were revised in 1984 and again in 2002. Additionally, in 2002, OPS issued a rule that required hazardous liquid pipeline operators to file an annual report similar to the annual report already required for natural gas transmission and distribution pipeline operators.

More recently, PHMSA recognized the need to revise several components of the rules relating to data reporting, including revisions to Section 191.3 and 195 subpart B (to modify reporting requirements for operators of hazardous liquid pipelines); Section 191 references to LNG operators; to create a National Pipelines Owner/Operator Registry; and to facilitate electronic data collection.

PHMSA is the nation’s repository for pipeline data. These data are used by many entities for various reasons, including planning purposes, safety-related research, critical public safety information, and statistical analysis. This NPRM is intended to address recognized needed improvements and enhance safety by ensuring that PHMSA has accurate safety

data to manage and reduce risks associated with natural gas transmission and hazardous liquid pipeline systems and LNG facilities.

2. Regulatory Impact Analysis

2.1. Introduction

Executive Order 12866 directs all Federal agencies to develop both preliminary and final regulatory analyses if their regulations are likely to be “significant regulatory actions” that may have an annual impact on the economy of \$100 million or more. The Order also requires a determination as to whether a rule could adversely affect the economy or a section of 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. Whereas regulatory analysis is used to anticipate and evaluate the likely consequences of rules, cost-benefit analysis is a primary tool for such analysis. This tool provides 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 regulatory analysis:

1. Identifies the target problem, including a statement of the need for the proposed action.
2. Identifies available alternative approaches.
3. Defines the baseline.
4. Defines the scope and parameters of the analysis.
5. Defines and evaluates the costs and benefits of the proposed action and the main alternatives identified by the analysis.
6. Compares the costs and benefits.
7. Interprets the cost and benefit results.

In accordance with the above directives, PHMSA has performed a preliminary evaluation of the potential compliance costs of the proposed rule and feasible regulatory options and identified those benefits that can be expressed in monetary terms.

2.2. Identification of the Problem

As the nation’s repository for pipeline data, PHMSA is responsible for maintaining the most comprehensive collection of accident and incident data for both intrastate and interstate pipelines. PHMSA is subject to constant and continued interest and scrutiny by various stakeholders for the reliability, utility, and applicability of pipeline data. PHMSA is currently confronted with several data-related strategies to address shortcomings and gaps in data collection. These gaps arise from changing industry and business practices,

as well as changes in PHMSA's regulations and changes in PHMSA's own data-analysis strategies and objectives.

There are several problem areas:

- Currently PHMSA's data cannot fully support regulatory oversight activities. Some factors that contribute to this include:
 1. Definitions of certain key terms in current reporting requirements do not reflect the contribution of extraneous factors that could influence the frequency of reported incidents (e.g., inflationary price increases have led to a steep rise in the cost of various pipeline transported commodities, resulting in a higher number of incident reports).
 2. Lack of incident information on "near misses," such as explosions and fires that do not cause serious damages or injuries, decreases the value of vulnerability assessments in IM programs.
 3. Lack of consistent causal information in the current incident databases due to a non-systematic approach for data collection leads to data gaps. Operators use varying methods to report incidents. For example, reports can be submitted online and by fax, letter, and e-mail. In the absence of a systematic approach to data collection, PHMSA is not able to validate or assess risks posed by specific pipeline operators.
- LNG operators are exempt from annual and incident reporting requirements. Quality and availability of data on LNG facilities are inadequate for monitoring the safety performance of this critical portion of the infrastructure. The proposed reporting requirement provides PHMSA with timely information needed for facility risk evaluation and accurate user fee assessments.
- Annual reports do not support an efficient assessment of pipeline vulnerabilities. Currently, HL operators do not report state-specific information in their annual reports. The HL operators report mileage operated, pipeline characteristics, and integrity management operation in the aggregate. Nationally aggregated information on HL pipelines does not provide the level of detail or the State-specific information necessary for PHMSA to understand, monitor, and assess safety performance and risks posed by the pipelines. For example, the HL pipeline annual reports show approximately 314 pipeline operators with a total of 165,000 miles of pipelines. Data from the National Pipeline Mapping System (NPMS), which contains mileage by State, do not support these statistics (the latest NPMS submission shows about 310 operators reporting a total of approximately 175,000 pipeline miles).
- There is no consistent method of registering pipeline owners and operators. PHMSA needs to be able to maintain control over operator identification numbers and the associated contact information. Currently, PHMSA cannot meaningfully analyze and normalize data received from pipeline operators across different

reporting requirements. Under the Pipeline Safety Improvement Act of 2002, Congress requires operator identification information so that PHMSA can assess operator compliance with the NPMS. With the information currently available, PHMSA cannot fully determine which companies constitute the universe of operators and whether or not “umbrella” companies had submitted data for other related companies.

- Incident data reported to PHMSA are currently provided primarily through paper filings. These paper reports are often incomplete and inconsistent, and the forms improperly filled out. If an operator enters data inconsistently on paper reports, both the States and PHMSA are prevented from identifying system-wide problems with respect to that operator, impeding optimal pipeline safety oversight.

2.3. Identification of Available Alternative Approaches

PHMSA considered four alternatives to the proposed rule for implementing its data collection requirements. After reviewing the four options, PHMSA selected the proposed alternative which provides that the reporting requirements discussed earlier be applied to all operators.

2.3.1. Baseline: No Action

Under this option, PHMSA would maintain existing requirements for reporting by taking no action. However, PHMSA believes that this would not effectively support the Agency’s safety mission. Given the magnitude of the accident risks and economic losses currently prevailing in the industry, as documented later in this report, a do-nothing alternative is not an acceptable option. Taking no action would prolong the adverse conditions currently prevailing in the industry, including:

- Inability to mitigate potential safety issues due to inadequate decision-making capability, stemming from lack of needed information about the location of hazardous liquid accidents and LNG facilities.
- Inability to address the safety due to the poor quality of data on natural gas pipelines incident reports, and inadequate information on operators contained in the annual reports and OPID.
- Inefficiencies in, and high costs of, processing and correcting error-prone paper-based reports; inadequate information sent to the OPID; and failure to meet the DOT strategic goals for E-Government.

By not taking action the Agency would be unresponsive, there would likely be no reductions in the array of safety risks, and data collection inefficiencies and gaps identified in the NPRM would continue to exist. Although taking no action would eliminate additional compliance costs, there would be no reduction in the societal costs

associated with the deaths, injuries, and property damages. This results in zero net benefits. Thus, this alternative is the baseline for comparison with other alternatives.

2.3.2. Option 2. Require Direct Data Submission to the NPMS

The NPMS is created by PHMSA in cooperation with other Federal and State governmental agencies and the pipeline industry. The NPMS consists of geospatial attribute data related to natural gas transmission and HL pipelines and LNG facilities under PHMSA's jurisdiction. The NPMS is built and maintained using information supplied by firms that operate pipeline and LNG facilities.

To date, pipeline facility data in the NPMS are submitted by pipeline operators on a voluntary basis. Under Option 2, PHMSA would require all operators to adhere to NPMS data standards for all submissions. Operators would be provided with access to sample maps and submission checklists and information on data standards available for online review and downloading.

This option would enable PHMSA to use the NPMS as a tool for decision support, emergency response, inspection planning, community access, and regulatory compliance. PHMSA will also be able to use the risk-based pipeline integrity management data obtained from the NPMS for rulemaking. Through visualization, geospatial analysis, and the integration of various databases, PHMSA will be able to use the NPMS to help ensure the safe, reliable, and environmentally sound operation of the nation's pipeline transportation system.

This option was not selected for several reasons. To submit the proposed information via the NPMS as opposed to other means, PHMSA would have to make modifications to the existing geospatial technological architecture of the NPMS to accept the substantial data elements that would have to be submitted if the NPMS were to generate the proposed State totals. These modifications would be costly, and the costs are not currently budgeted or planned for. To retrofit the NPMS into a format that could meet the requirement, PHMSA would have to put in several years of planning and extensive work. Additionally, we do not know the percentage of the hazardous liquid industry that currently have geospatial data in a format that would enable such a submission. Many small companies are not American Petroleum Institute (API) or Association of Oil Pipe Lines (AOPL) members, and PHMSA would need to better understand the universe of capabilities for such a consideration.

2.3.3. Option 3. Different Reporting Requirements for Small Operators

PHMSA considered setting different requirements for large and small operators, basing the requirements on estimated differences in expected costs and benefits. PHMSA is aware that some regulations, rules, and Government policies place a disproportionate burden on small firms and entrepreneurs. Consequently, to promote entrepreneurship, Government agencies have sometimes granted small businesses special regulatory treatment, such as exemptions from legislation or extended deadlines for compliance.

PHMSA judged that these considerations were not sufficient to recommend reporting requirements based on business size. This option was not chosen because PHMSA concluded that allowing disparate reporting would not meet its informational needs. The Agency believes reporting must provide relevant information that is useful for the decision-making needs of groups for whom the information is provided. PHMSA determined, therefore, that allowing for firm size would dampen the regulation's effectiveness and that special regulatory treatment would not, in fact, help small businesses. PHMSA believes that although there may be a learning curve for small entities, with practice and guidance—which PHMSA is willing to provide—small operators will learn how to comply with the proposed reporting requirements.

2.3.4. Option 4. Adopt Proposed NPRM Changes in Reporting Requirements

PHMSA has chosen Option 4, the proposed rule changes in this NPRM, as the most reasonable of the four options, based on the OMB criteria for regulatory evaluation. This option responds to various Government Accountability Office (GAO), DOT Inspector General (DOT IG), and National Transportation Safety Board recommendations. This option is PHMSA's preferred option and requires the following proposed changes:

1. Modify the scope of part 191 addressed in 49 CFR Section 191.1 to reflect the changes made in the scope of part 192 to the definition of gas gathering lines.
2. Change the definition of an "incident" in 49 CFR Section 191.3 to require an operator to report a fire not intentionally set by the operator, or an explosion, and establish a volumetric basis for reporting unexpected or unintentional gas loss. This requirement will more accurately depict the safety performance of gas pipelines over time.
3. Require operators of hazardous liquid pipelines to submit pipeline information by state on the annual report for hazardous liquid pipelines. This data will allow PHMSA to improve its allocation of inspection and other resources due to an improved understanding of the infrastructure it regulates.
4. Require operators of Liquefied Natural Gas (LNG) facilities to submit incident and annual reports. This data will provide valuable infrastructure

information to PHMSA, and allow for a more thorough evaluation of the safety performance of LNG facilities.

5. Create and require participation in a National Pipeline Operator Registry. This data will provide PHMSA with timely updates on significant and potential safety-impacting changes occurring under its purview, and help PHMSA to better monitor and assess operator performance.
6. Require operators to report and file data electronically whenever possible. The electronically submission of data will increase the accuracy and quality of data collected which, in turn, will improve PHMSA's data integration efforts. Electronic submission will also reduce the reporting burden on operators.
7. Merge the natural gas transmission integrity management Semi-Annual Performance Measures Report with the annual reports. This change will significantly reduce the reporting burden on operators by changing the current semi-annual requirement to an annual requirement.
8. Require operators to use a standard form in submitting Safety-Related Condition Reports. This will ensure consistency of data submitted across the pipeline industry.
9. Modify hazardous liquid operator telephonic notification of accidents to require operators to have a procedure to calculate and provide a reasonable initial estimate of released product and maintain a record of the procedure used for reporting and to provide an additional telephonic report to the National Response Center if significant new information becomes available during the emergency response phase.

HL pipeline operators, NG transmission and distribution pipeline operators, and LNG facilities are impacted by this proposed rule. PHMSA has determined that an Industrial Engineer would be able to address the requirements under this proposed rule. Table 1 below summarizes the baseline data elements used in this analysis.

2.3.5. Linking Proposed Actions to Improved Pipeline Data Quality and Risk Targeting

Given the anticipated outcomes outlined in this section, the proposed data reporting requirements are justified. The proposed requirements presume an implicit linkage between the elements of the proposed changes in data reporting requirements and the following expected improvements.

2.3.5.1 Improved Efficiency of Incident Analysis, More Effective Risk Assessment and Targeting

PHMSA and industry representatives believe that better risk management can both improve safety outcomes and effectively allocate Agency resources cost effectively. Improved reporting will expand the Agency's ability to analyze pipeline incidents, events and the causes of potential pipeline incidents, as well as to examine both the likelihood

and severity of potential pipeline incidents. To strengthen the linkage between risk reduction and improved reporting requirements, PHMSA proposes to:

- Amend Section 191.3 definition of “incident” for natural gas pipeline operator reports will improve the efficiency of data collection. New risk-based information will enable PHMSA to focus more attention on high- to moderate-impact incidents, as the number of reported minor and low-impact incidents will be reduced.
- Revise §195.49 (subpart B – Annual Reports) to require operators of hazardous liquid pipelines to submit certain infrastructure and IM data by State. By identifying the location of high-risk accidents, State inspectors can utilize safety assessment tools and PHMSA can target mitigation measures.
- Amend Sections 191 and 195 to require LNG operators to submit incident reports, and HL pipeline operators to submit risk-based and location-specific annual reports. This will improve PHMSA’s capability to conduct risk-based assessment of pipeline vulnerabilities and improve performance monitoring.
- Require the semi-annual natural gas IM reports’ incorporation into the annual report. This will reduce compliance costs for interstate pipeline operators while improving PHMSA ability to conduct risk-based vulnerability assessments.

2.3.5.2 Improved Data Quality Leads to Accurate Data Reporting and Improved Productivity of PHMSA and Pipeline Operators

The linkage between gains in accuracy, worker productivity, and improved reporting requirements can be made in the following ways:

- Revising reporting requirements for HL, LNG, and NG transmission operators that will improve data accuracy and consistency across reporting units and make it possible to link the reports with the NPMS to enhance its function.
- Creating an OPID Registry that will improve the quality and accuracy of the data, facilitate development of a more comprehensive inventory of operators, and reduce data submission errors and inconsistencies.
- Requiring operators to provide advance notice of new pipeline construction that will similarly improve data quality and forecasting capability.
- Requiring electronic submissions that will be more efficient, more accurate, and cheaper.

2.4. Baseline Data

2.4.1. Pipeline Information

The energy transportation network of the United States consists of over 2 million miles of pipelines. The network includes approximately:

- 170,000 miles of onshore and offshore HL pipeline;
- 295,220 miles of onshore and offshore NG Transmission pipelines;
- 1,900,000 miles of NG Distribution pipelines;
- LNG Plants connected to our natural gas transmission and distribution systems;
- and
- Propane Distribution System pipelines.

The pipeline industry is extremely diverse. Pipeline systems vary in size and complexity. These pipelines are operated by approximately 2,600 operators, large and small. PHMSA believes an industrial engineer would best respond to the requirements of the proposed rule.

Table 1. Pipeline Information

Baseline Parameters	HL Pipelines	Natural Gas Transmission	Natural Gas Distribution	LNG
No. of operators ¹	314	950	1,262	77
Pipeline mileage ²	170,000	295,220	1,900,000	NA
Average hourly wage rate for an engineer, based on BLS data ³	\$40.39	\$37.21	\$37.21	\$37.21
Average hourly wage rate for an engineer based on industry estimates ⁴	\$60.00	\$60.00	\$60.00	\$60.00

2.4.1.1. HL Pipelines

Gathering pipeline systems gather crude oil from production wells. Crude oil pipeline systems transport crude oil from the gathering systems to refineries. Crude oil systems can be tens to hundreds of miles in length and cross state and continental borders. Pipeline systems transport refined products such as gasoline, kerosene, and many industrial feedstock petrochemicals from refineries to the end user or to storage and distribution terminals. Refined products pipelines can extend tens to thousands of miles and cross state and continental borders. The pipe used in oil pipeline systems can range in

¹ <http://ops.dot.gov/stats/DT98.htm>.

² <http://primis.phmsa.dot.gov/comm/PipelineBasics.htm>.

³ BLS. May 2006 National Industry-Specific Occupational Employment and Wage Estimates. See http://www.bls.gov/oes/current/naics3_486000.htm.

⁴ Average hourly wage rate is based on conversations with a few pipeline industry representatives.

size from 2 inches to 42 inches in diameter. Oil pipeline systems are owned and operated by many different companies. The location, construction, and operation of these systems are generally regulated by federal and state regulations.

2.4.1.2. Natural Gas Pipelines

Natural gas transmission pipeline systems transport natural gas thousands of miles across many parts of the continental United States. Natural gas distribution pipeline systems can be found in thousands of communities from coast to coast and distribute natural gas to homes and businesses. The pipe used in natural gas pipeline systems can range in size from 2 inches to 42 inches in diameter. Natural gas gathering and transmission pipeline systems are constructed from steel pipe. However, natural gas distribution systems can be constructed from steel or plastic pipe. The use of modern plastic pipe for distribution systems is becoming more and more prevalent today. Natural gas pipeline systems are owned and operated by many different companies. The location, construction, and operation of these systems are generally regulated by federal and state regulations.

2.4.1.3. LNG Facilities

LNG is the liquid form of natural gas – natural gas which has been cooled to the point that it condenses to a liquid. Although LNG has been transported safely in the U.S., security has been a concern of both Federal agencies and the industry. PHMSA prescribes safety standards concerning the location, design, installation, construction, initial inspection, and testing of new onshore and offshore LNG facilities. In cooperation with the Interstate Natural Gas Association of America, OPS formed a task force to develop and oversee industry-wide security standards “for critical onshore and offshore pipelines and related facilities, as well as LNG facilities.”⁵ Technological improvements made since the 1940s have made LNG facilities much safer. Serious risks remain, however, because LNG is inherently volatile and is usually stored in large quantities.⁶ With the endorsement of the OPS, in September 2002, the association’s task force issued security guidelines for natural gas infrastructure, including LNG facilities.⁷

Since September 11, 2001, the U.S. LNG industry and Federal agencies have put new measures in place to both protect the LNG infrastructure and respond to potential terrorist attacks.⁸ In 2004, the Federal Energy Regulatory Commission formed a new LNG Engineering Branch within its Office of Energy Projects that is devoted to the safety and security of LNG facilities. More recently, in May 2006, the Commission created a new LNG Compliance Branch within its Office of Energy Projects to further ensure the use of

⁵ Haener, William J., CMS Energy Corp. Testimony on behalf of the Interstate Natural Gas Association of America (INGAA) before the House Transportation and Infrastructure Subcommittee on Highways and Transit. February 13, 2002: p. 4.

⁶ Congressional Research Service (CRS) “Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress,” September 2003: p. 9.

⁷ Interstate Natural Gas Association of America (INGAA), “Security Guidelines Natural Gas Industry Transmission and Distribution,” Washington, DC, September 6, 2002.

⁸ CRS “Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress,” September 2003: Executive Summary. Also see <http://www.energy.ca.gov/lng/safety.html>, Liquefied Natural Gas Safety.

sound engineering practices and appropriate safety and security measures during the construction and operation of LNG facilities.⁹

2.4.2. Baseline Risk Trends

Over the years, OPS has partnered with industry to investigate the potential application of risk management within the pipeline industry. Together they have concluded that risk analysis and management requires suitable and sufficient data. However, the monitoring of performance over time suggests that certain initial assumptions and data elements are inadequate and need to be updated.

The information for LNG plants is mainly derived from outside sources. Table 2 below contains a listing of LNG incidents.

Table 2. The History of LNG Incidents in the U.S.¹⁰

Incident Date	Facility	Location	Injuries/Fatalities	Comment
1944	East Ohio Gas LNG Tank	Cleveland, OH	128 deaths	LNG peak shaving facility. Tank failure and no earthen berm. Vapor cloud formed and filled the surrounding streets and storm sewer system. Natural gas in the vaporizing LNG pool ignited.
1969	LNG tank	Portland, OR		An explosion occurred in an LNG tank under construction. No LNG had ever been introduced into the tank. The cause of the accident was attributed to the accidental removal of blinds from natural gas pipelines which were connected to the tank. This led to the flow of natural gas into the tank while it was being constructed.
1973	Texas Eastern Transmission LNG	Staten Island, NY	40 deaths	Industrial incident unrelated to the presence of LNG (incident). During repairs, vapors associated with the cleaning process apparently ignited the mylar liner. Fire caused temperature in the tank to rise, generating enough pressure to dislodge a 6-inch thick concrete roof, which then fell on the workers in the tank.
1974	Massachusetts	Loading	None	Valve leakage. Deck fractures.

⁹ For additional information on LNG plants see Liquefied Natural Gas: An Overview of the LNG Industry for Fire marshals and Emergency Responders.

http://primis.phmsa.dot.gov/comm/publications/LNG_for_Fire_Marshals_06-2005.pdf?nocache=1982

¹⁰ University of Texas, Center for Energy and Economics "LNG Safety and Security," October 2003. Table 4, p. 77. See

http://www.beg.utexas.edu/energyecon/lng/documents/CEE_LNG_Safety_and_Security.pdf.

Incident Date	Facility	Location	Injuries/Fatalities	Comment
1979	Columbia Gas LNG Terminal	Cove Point, MD,	1 death, 1 serious injury	An explosion occurred within an electrical substation. LNG leaked through LNG pump's electrical penetration seal, vaporized, passed through 200 feet of underground electrical conduit, and entered the substation. Since natural gas was never expected in this building, there were no gas detectors installed in the building. The normal arcing contacts of a circuit breaker ignited the natural gas-air mixture, resulting in an explosion causing about \$3 million in damages.
August 1987	Nevada Test Site	Mercury, NV		An accidental ignition of an LNG vapor cloud occurred at the U.S. Department of Energy Test Site during large-scale tests involving LNG spills. The cloud was accidentally ignited and damaged and propelled polyurethane pipe insulation outside the fence.
March 2005	WG utility	District Heights, MD		A Washington Gas company-sponsored study released in July 2005 pointed to subtle molecular differences in the imported LNG the utility began using in August 2003 as the cause of a house explosion.

Worldwide, there have been approximately 10 serious accidents directly attributed to LNG facilities.¹¹

PHMSA's LNG responsibilities under 49 CFR 193 relate primarily to safety issues. The Pipeline Branch of the TSA is responsible for pipeline security, for both land-based and marine LNG facilities. The overlapping jurisdictions of TSA and OPS for monitoring LNG safety and security have led to memoranda of agreement between the two agencies to guide the security plans required by the facilities. The U.S. Coast Guard (USCG) Program Office has estimated that it costs the Coast Guard between \$40,000 and \$50,000 to "shepherd" an LNG tanker through its delivery tour at an LNG terminal. Added to these are the additional costs to State/local governments for police and fire department support, at a total cost of approximately \$80,000 per delivery (excluding costs incurred by the terminal owner.)¹²

¹¹ Bureau of Mines, Report on the Investigation of the Fire at the Liquefaction, Storage, and Re-gasification Plant of the East Ohio Gas Co., Cleveland, OH, October 20, 1944. February, 1946. Quoted in CRS Report for Congress, *Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress*, September 9, 2003.

¹² CRS Report to Congress, *Liquefied Natural Gas (LNG) Infrastructure Security: Background and Issues for Congress*, September 9, 2003.

A 2003 Congressional Research Service (CRS) Report to Congress has emphasized the importance of risk-based information about LNG operations and the infrastructure surrounding each facility and the need for information sharing and coordination among the many international treaty organizations, Federal agencies, and State/local governments. The CRC report concludes by emphasizing that efficiencies gained by targeted risk-based information collection reduce costs to the Government. It went further stating: "costly 'blanket' investments in LNG security might be avoided if more refined terror threat information were available to focus security spending on a narrower set of infrastructure vulnerabilities."¹³

While the risk of an LNG incident is low compared to that of other potential sources of hazard, the consequences of a major LNG incident could be catastrophic. This consideration has raised community concerns in locations where new facilities have been proposed. Part of the problem is that statistical probabilities for high-consequence intentionally set LNG fires are not known.

A recent study sponsored by PHMSA attempted to quantify the risks associated with large LNG fires. The study found that 49 CFR, Part 193 regulations have made significant progress in ensuring that no LNG leaks/releases occur from material defects, natural phenomena, and machinery attrition, and that if releases occur, sufficient safeguards are in place to minimize the effects. However, the study reported, the safeguards fail to address threats posed by an intentional release for harmful purposes. To date, no data and trend information are available on the type/size of intentionally set large fires, and magnitude of the damage, given the rare nature of the events. The study concluded that to conduct a quantitative risk assessment on the individual and societal risks associated with LNG accidents, more comprehensive incident reports and annual reports are needed. These data will enable estimates of accident frequencies and development of probabilistic risk scenarios, including:

- Size and volumes of storage tanks and transfer piping, dike details, pumping or flow rates, and pipeline pressures in each type of piping.
- Details of the surrounding community, including the topography, population density and location of houses, industrial and commercial centers; location of sensitive populations; distribution and sizes of buildings and emergency shelters.
- Any systems or procedures available for mitigating the occurrence of or effect of LNG fires.
- Historical data on the modes of failures of components and systems used in LNG facilities or ships or in the docks for unloading ships.¹⁴

¹³ Ibid.CRS-22.

¹⁴ Technology & Management Systems, Inc., "Spectrum of Fires in an LNG Facility: Assessments, Models a Considerations in Risk Evaluation," Final Technical Report, submitted to U.S. DOT, PHMSA, December 5, 2006.

In summary, with the growing demand for LNG peak shaving and import facilities and given the growing Government security concerns, the risks of high-consequence LNG accidents are likely to continue. LNG accidents, though rare, are high-consequence events for which more data need to be made available. Risks associated with LNG accidents originate in three hazards: flammability, dispersion, and cryogenic temperature. When LNG is spilled and its vapors come into contact with an ignition source, the spill will develop into a pool fire and present a thermal radiation hazard. LNG facilities also represent security risks as targets of terrorist attacks.

PHMSA defines a serious pipeline incident as an event involving a fatality or injury requiring in-patient hospitalization. PHMSA also reports significant incidents, which include all serious incidents as well as incidents with significant consequences beyond injury and fatality. PHMSA defines Significant Incidents as those incidents reported by pipeline operators when any of the following conditions are met:

1. fatality or injury requiring in-patient hospitalization
2. \$50,000 or more in total costs, measured in 1984 dollars
3. highly volatile liquid releases of 5 barrels or more or other liquid releases of 50 barrels or more
4. liquid releases resulting in an unintentional fire or explosion.

Overall assessment of the relative risks involved in each operation can be made by a review of the PHMSA accident data, as displayed in the following figures and tables. Serious Hazardous Liquid and Gas Transmission offshore incidents are combined with their onshore counterparts in Table 3 and Figure 1. There have been no serious offshore Hazardous Liquid incidents reported over the displayed time period and no serious offshore Gas Transmission incidents since 1996.

Table 3. Risk Based on Miles of Pipeline – All Pipelines (1988-2007)

Total Incidents	5,730	417	1,736	242.26	17.63
5-Year Annual Average (2003-2007)	304	17	53	12.85	0.72
10-Year Annual Average (1998-2007)	287	18	64	12.13	0.76
20-Year Annual Average (1988-2007)	287	21	87	12.13	0.89

Figure 1. Serious Incidents
National, All Pipeline Systems, Serious Incidents 1988-2007

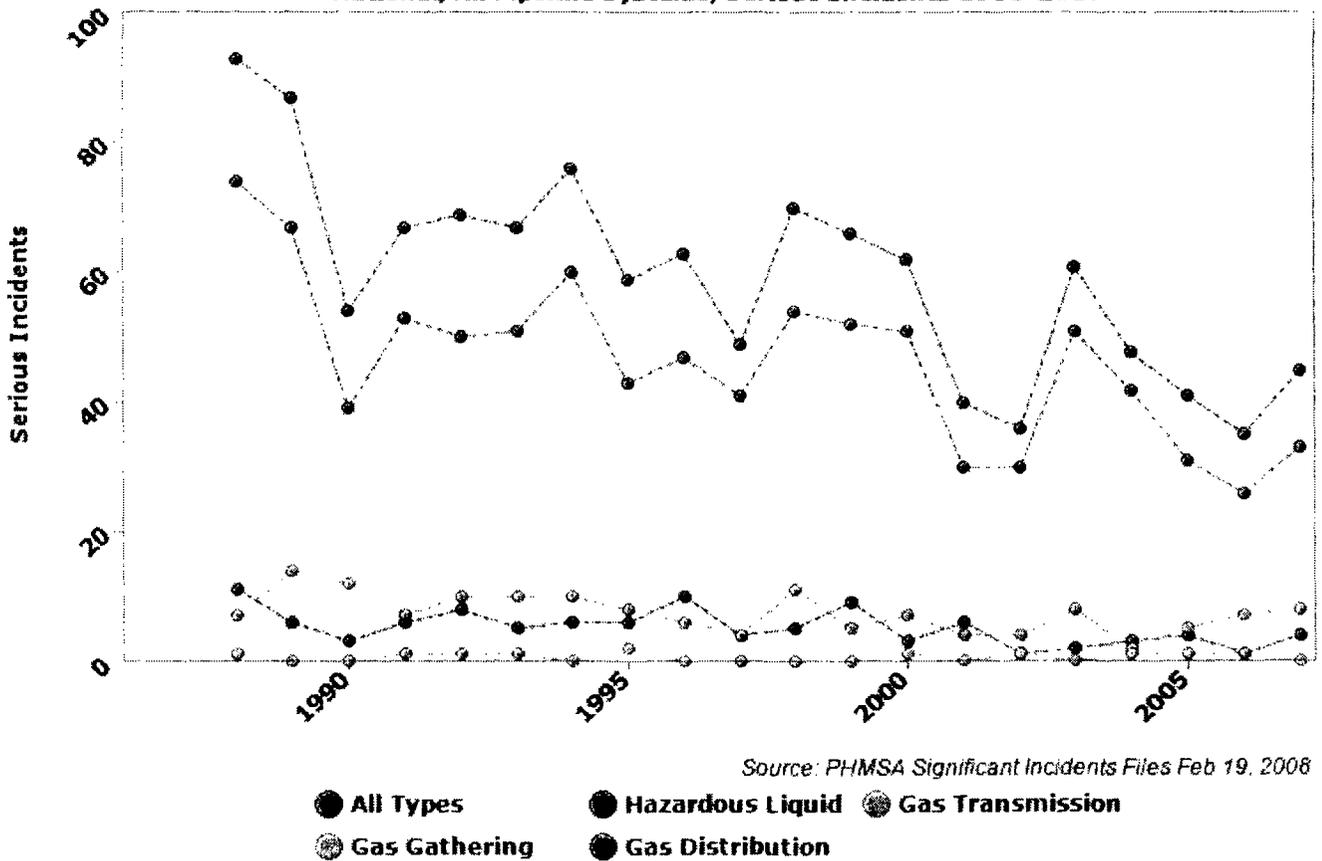
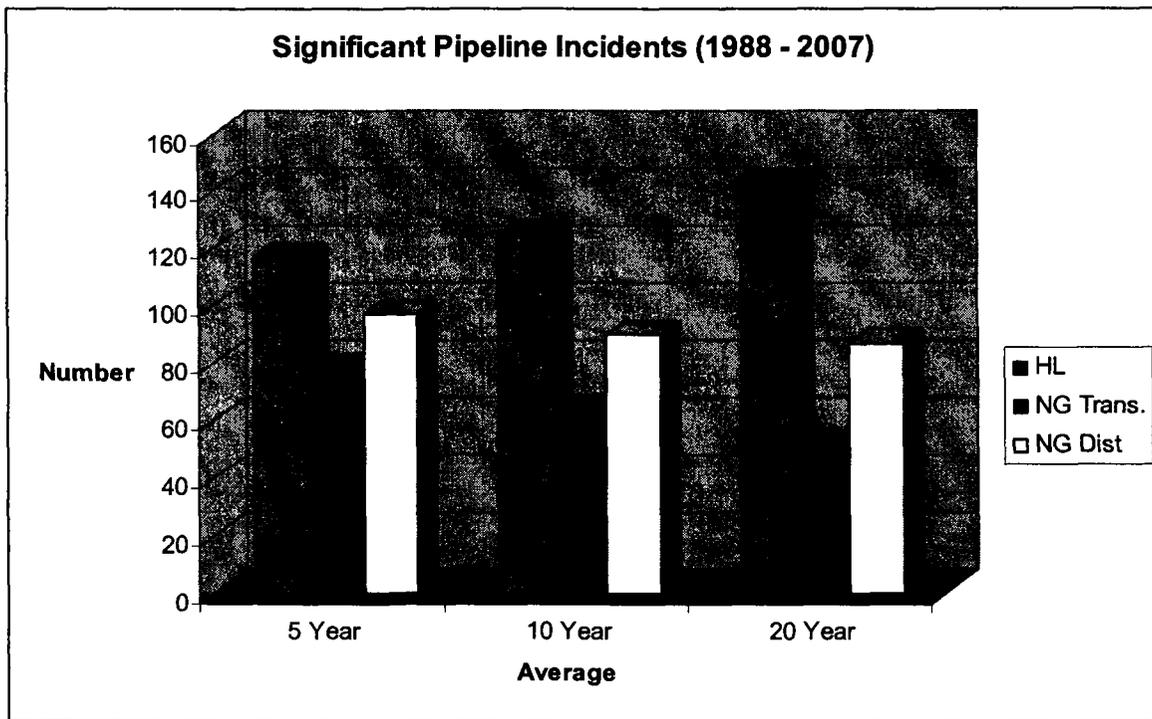


Figure 2. Average Incidents for Natural Gas and Hazardous Liquid Pipelines, 1988-2007



2.4.3. Electronic Filing Baseline

The following points guide the baseline assumptions about the private industry and Government data processing costs in general, and the availability of Web-based report filing capability in the pipeline industry in particular:

There are many advantages to filing electronically. Both business operators and Government officials see electronic filing as fast, accurate, and easy to use.

Increased Data Availability. Pipeline industry data suggest that most pipelines are establishments with ready access to e-filing. It is estimated that between 55 and 80 percent of the PHMSA Annual Reports are currently submitted electronically. Other Federal agencies also require electronic filing.

Improved Data Accuracy. Many business operators and Government officials note that the electronic filer is more apt to submit complete and accurate data. For example, when the IRS estimated the error rate of electronic versus paper filing, the error rate for the Expanding Electronic Tax Products for Businesses (EETPB) dropped between 9 and 23 percentage points.¹⁵

¹⁵ <http://www.whitehouse.gov/omb/egov/c-7-6-eetpb.html>.

Reduced Costs to Government. According to Government reports there are monetary benefits associated with electronic filing. For example:

1. The Expanding Electronic Tax Products for Businesses (EETPB) reduces cost. Over 5.5 million entities filed electronically, with savings ranging from between \$1.49 and \$4.37 per return, accounting for over \$10 million in savings in 2007.¹⁶
2. In Fiscal Year (FY) 2007, the IRS received nearly 4 million tax returns electronically through Free File, representing a cost-savings to the Government of approximately \$9.2 million over paper-based processing costs. The Free File program has generated \$45.5 million in cost savings to the Government since its beginning in 2003.¹⁷
3. Introduction of the new electronic IRS filing methods has not only sped up the time to refund the taxpayer, it has also greatly reduced the costs of processing a tax return from \$1.60 to \$.02, saving millions of dollars each year.¹⁸
4. E-Travel – The Treasury Department’s participation in the E-Travel initiative allowed the Department to save \$402,000 in travel management fees in FY 2007.¹⁹
5. The Virginia Employment Commission saved approximately \$270,000 annually on staff costs to process unemployment claims; their online claimants are saving over \$2 million annually.²⁰

Reduced Costs to Businesses. Cost savings to the business community occur through lower transaction/processing costs and improved labor productivity. For example:

1. The Department of Labor Employee Benefits Security Administration (EBSA) estimates savings of \$0.0167 per sheet of paper and \$0.57 for postage per filing.²¹
2. Estimated labor productivity gain in the Natural Gas Industry [North American Industry Classification System (NAICS) 2212] for 2005, for instance, was 4.4 percent. E-commerce cost savings result from lower transaction costs and product purchase prices. Cost savings from automated data collection and processing result from reduced data entry and processing costs and lower labor input.²² Increased labor productivity is the key element of the reduced costs to businesses from automation and electronic transactions. The BLS statistics on labor productivity suggest significant increases in labor productivity gains over the past decade, a trend that

¹⁶ The forms included in the initiative are used for filing or applying for Employment Tax, Corporate Income Tax, Employer Identification Number, and Wage Reporting. See <http://www.whitehouse.gov/omb/egov/c-7-6-eetpb.html>.

¹⁷ http://www.whitehouse.gov/omb/egov/documents/FY08_Benefits_Report.pdf.

¹⁸ <http://www.ec3.org/Downloads/2003/RevMax.pdf>.

¹⁹ http://www.whitehouse.gov/omb/egov/documents/FY08_Benefits_Report.pdf.

²⁰ <http://www.ec3.org/Downloads/2003/RevMax.pdf>

²¹ Electronic Filing of Annual Reports. See <http://www.dol.gov/ebsa/regs/fedreg/proposed/2005017185.htm>.

²² To illustrate, it has been estimated that transmission of business transaction documents by EDI reduces costs by 10 to 50 percent of the transaction costs, depending on what costs are included. The Web-based e-commerce cost savings are more complex and are still being estimated. For instance, compare banking costs via the Internet (\$0.01 per transaction) with traditional banking costs: banking via traditional ATM (\$0.27), banking by phone (\$0.52), and by branch banking (\$1.07).

reflects corrections to the previously reported low levels of improvements attributed to electronic data entry.²³

Client satisfaction. Businesses required to use electronic filings for their IRS forms reported a 95 percent satisfaction with the process.²⁴

2.5 Costs of Complying with the Requirements of the Proposed Rule

The NPRM addresses eight requirement areas. Table 4 below indicates which pipeline segment the proposed rule affects.

Table 4. Pipeline Segment Addressed by Each of the Eight Proposed Requirements

Proposed Requirements	HL Operators	NG Operators	LNG Facility Operators
1. Modify the scope of part 191 addressed in 49 CFR Section 191.1 to reflect the changes made in the scope of part 192 to the definition of gas gathering lines	No	Yes	Yes
2. Change the definition of an "incident" in 49 CFR Section 191.3 to require an operator to report a fire not intentionally set by the operator, or an explosion, and establish a volumetric basis for reporting unexpected or unintentional gas loss.	No	Yes	?
3. Require operators of hazardous liquid pipelines to submit pipeline information by state on the annual report for hazardous liquid pipelines.	Yes	No	No
4. Require operators of Liquefied Natural Gas (LNG) facilities to submit incident and annual reports.	No	No	Yes
5. Create and require participation in a National Pipeline Operator Registry.	Yes	Yes	Yes
6. Require operators to report and file	Yes	Yes	Yes

²³ Bureau of Labor Statistics. See <ftp://ftp.bls.gov/pub/special.requests/opt/dipts/ipr.airt.txt>.

²⁴ E-Government initiatives. See <http://www.whitehouse.gov/omb/egov/c-7-6-eetpb.html>.

Proposed Requirements	HL Operators	NG Operators	LNG Facility Operators
data electronically whenever possible.			
7. Merge the natural gas transmission integrity management Semi-Annual Performance Measures Report with the annual reports.	No	Yes	No
8. Require operators to use a standard form in submitting Safety-Related Condition Reports	Yes	Yes	Yes
9. Modify hazardous liquid operator telephonic notification of accidents to require operators to have a procedure to calculate and provide a reasonable initial estimate of released product and maintain a record of the procedure used for reporting and to provide an additional telephonic report to the National Response Center if significant new information becomes available during the emergency response phase	Yes	No	No

Following is a full discussion of each of the eight requirements and the costs associated with each of the requirements.

2.5.1 Requirement One - Change the Scope of Part 191 to Reflect the Change to the Definition of Gas Gathering Line in Part 192

PHMSA inadvertently overlooked changing the scope of Part 191.1 when it published a final rule adjusting the definition of gathering lines in the scope of Part 192.1. Section 191.1 will be changed to require operators of jurisdictional gathering lines to report according to the new definition. This change will not impose costs on the operators of gas gathering lines.

2.5.2 Requirement Two - Change the Definition of "Incident" for Gas Pipelines and LNG Facilities

Currently operators of jurisdictional pipelines or hazardous material pipelines must report incidents or accidents as required in Part 191 or Part 195, respectively.²⁵ 49 CFR § 191.3 states that "incident" means any of the following events:

- (1) An event that involves a release of gas from a pipeline; and
- (2) A death, or personal injury necessitating in-patient hospitalization; or
- (3) Estimated property damage, including cost of gas lost, of the operator or others, or both, of \$50,000 or more.
- (4) An event that is significant, in the judgment of the operator, even though it did not meet the criteria of paragraphs (1) or (2).

BLS reports fatal occupational injuries by industry and selected event or exposure. They reported that fatalities from fire averaged 174 per year from 2001 to 2006. Fatalities increased 4 percent from 2005 to 2006.²⁶ When PHMSA compared its accident data on death and injury, (with and without fire and explosion) death or injury increased by four to five times if there was a fire or explosion.²⁷

By changing the definition of incident in §191.3 for NG transmission and distribution, pipelines will require the F-7100.2 (Incident Report) to be changed to report on:

- Fire intentionally set.
- Volume measure for released gas of 3,000 MCF (million cubic feet) instead of the cost of gas lost.

By adding fires intentionally set, explosions, and volume measures into the definition of a reportable incident, it will:

- Allow PHMSA to get additional information on major outcomes that significantly raise the risk of death or injury from a pipeline failure.
- Not only make the incident reporting requirement consistent with the reporting requirement for HL pipelines, but will also improve data quality, accuracy, risk targeting, and allow for more accurate analysis of threats posed by natural disasters.
- Tie releases to volume rather than value.

Forms are currently provided in Word, Microsoft Word, PDF, and compressed format. This rule will most likely increase the number of reports, but the magnitude of the increase is not known. The change in the reporting form will result in a marginal

²⁵ The general definition of a jurisdictional pipeline is any gas installation that connects 10 or more gas services on a common gas pipe, or three or more gas services at public locations (such as a shopping center) on a common gas pipe, or connection of two or more gas services on a common pipe that crosses under a public roadway or right-of-way.

²⁶ <http://www.bls.gov/news.release/cfoi.t01.htm>, Last Modified Date: August 09, 2007. Accessed: April 25, 2008.

²⁷ Pipeline and Liquefied Natural Gas Reporting Requirements. Notice of Proposed Rulemaking, draft as of March 28, 2008, p.10.

increase in time spent on meeting the paperwork requirements, as assessed in the PRA report.

2.5.2.1. Costs to Operators of Changing Definition of "Incident" and Establishing a Volumetric Basis for Unplanned Gas Loss

In estimating the costs incurred by NG operators from the proposed changes to §191.3, PHMSA assumes:

- A total of 2,289 NG operators and LNG facility operators are impacted, consisting of 950 transmission operators, 1,262 distribution operators, and 77 LNG facility operators.²⁸
- Reports are expected to increase from an annual average of 154 per year in a 10-year period (1998 to 2007) to 462 in the first year, a net increase of 308 reports.
- Representative fully loaded average wage rates in the NG industry are between \$55.82 ($\37.21×1.50) and \$90.00 ($\60.00×1.50) per hour.
- Based on previous years' trends, there will be an 11 percent increase (of 34 additional reports, $308 \times .11$) in successive years.
- NG and LNG operators will be required to spend 1 additional hour to complete reports.

²⁸ <http://ops.dot.gov/stats/DT98.htm>.

Table 5. Estimated Cost Burden to NG and LNG Operators from Changes to §191.3

§191.3 Components	No. of Hours	Wage Rates (including 50 percent overhead)	Total No. of Natural Gas Operators	Total No. of LNG Facility Operators	No. of Reports	Cost to Operators
First-year reporting on explosions/fires not set intentionally and released volume (NG transmission).	1 hour	\$55.82 to \$90.00 per hour	2,212	77	308	\$17,000 to \$28,000
First-year reporting on explosions/fires and released volumes for NG distribution pipelines.	Included above					
Annual recurring reporting on explosions/fires not set intentionally and released volume (NG transmission).	1 hour	\$55.82 to \$90.00 per hour	2,212	77	34	\$2,000 to \$3,000
Annual recurring reporting on explosions/fires and released volumes for NG distribution pipelines.	Included above					

PHMSA estimates that the first-year costs to the 2,289 operators (950 NG transmission operators, 1,262 distribution operators, and 77 LNG facility operators) will range between \$17,000 and \$28,000 (308 * hourly wage rate). As illustrated in Table 5 above, PHMSA estimates annual recurring cost would be between approximately \$2,000 and \$3,000 for NG operators (34 * hourly wage rate).

The change in definition of an "incident" for NG pipelines in 49 CFR Part 191.3 to: (a) Include fires not intentionally set and explosions as categories into the definition of reportable incidents; and (b) establish a volumetric basis for unplanned gas loss for reporting an incident, would result in added information collection burden. PHMSA estimates the PRA burden for NG operators would increase by 308 hours the first year and 34 hours each successive year.

2.5.3. Requirement Three - Require Operators of HL Pipelines to Report Pipeline Information by State in the Annual Report for HL Pipelines

Currently HL pipeline operators submit incident and annual reports, but the annual reports do not include State-specific (location) information. The information HL operators provide on their annual reports is nationally aggregated. Current reporting practices do not provide the level of detail or the State-specific information necessary for PHMSA to understand, monitor, and assess safety performance and risks posed by the pipelines.

There are inconsistencies between the HL operators' incident and annual reports. In particular, the inconsistencies occur in several sections of part 195. Section 195.56 Part B (Filing safety-related condition reports) requires HL release accidents to be reported with information on "location condition." However, §195.49 (Annual Report rules) requires HL operators to submit annual reports on each type of facility operated, but not the location. This has resulted in multiple reports for each commodity transported by the operator, but no location-specific information from the operators. Because of this information gap, incident data cannot be linked to the operators and their facilities. Overall, the information gap has created a lack of clarity on infrastructure data by State.

The changes in Hazardous Liquid §195.B, Annual Report (Form F-7000-1) will require HL operators to:

- Submit infrastructure and IM data for each state their pipeline traverses.
- Report by State instead of system type.
- Submit a separate report for each State the pipeline traverses. Operators of interstate pipelines must submit one report per State.

Alternatively, the form may require reporting by commodity type and include total State mileage. These changes will allow reporting to be consistent across the other pipeline systems and NPMS.

PHMSA will continue to collect annual report information in the current hard copy format historically used until PHMSA has converted its technological platform that could accept the submission via GIS tool, and until the Agency determines the entire industry would be able to adhere to such a format.

2.5.3.1. Costs to HL Operators of Reporting Annual Information by State

To estimate costs and burden hours to HL operators, PHMSA assumes:

- All 314 HL pipeline operators (intrastate and interstate) will have to submit state-specific information on their annual reports.
- Approximately 40 percent of the pipeline operators or 126 pipeline operators (.40*314) are intrastate and 60 percent or 188 (.60*314) are interstate.²⁹
- The 126 intrastate HL pipeline operators will have to file one annual report, while the 188 interstate HL pipeline operators must file multiple times based on the number of different states they operate in for the designated System Type.
- Approximately 50 percent of the 188 interstate pipeline operators, or 94 operators (.50*188) will file, on average, two annual reports for a total of 188 (94*2) reports.
- Approximately 30 percent of the 188 interstate operators, or 56 operators (.30*188) will file, on average, five annual reports for a total of 283 (56*5).
- Approximately 20 percent of the 188 interstate operators or 38 operators (.20*188) will file, on average, 10 annual reports for a total of 377 reports.
- Representative fully loaded average hourly wage rates for HL operators are between \$60.59 (40.39*1.50) and \$90.00 (\$60.00*1.50).
- HL operators will be required to spend 12 additional hours filing each State-specific annual report.

Table 6. Estimated Costs to HL Operators

\$195.49 Components	Number of Hours per Annual Report	Average Hourly Wage Rates (includes 50 percent overhead)	Total Number of HL Operators	Total Number of State-specific Reports	Costs per Year
First-year State-specific annual report	12	\$60.59 to \$90.00 per hour	314	979	\$712,000 to \$1,057,000
Annual recurring State-specific costs	12	\$60.59 to \$90.00 per hour	314	979	\$712,000 to \$1,057,000

As illustrated in Table 6, PHMSA estimates that HL operators would file approximately 979 reports per year with state specific information included. PHMSA estimates that the first-year costs to HL operators would range between approximately \$712,000 (979 reports * \$60.59 * 12 hours) and \$1,057,000 (979 reports * \$90.00 * 12 hours). PHMSA estimates the recurring costs in successive years would be in the same magnitude each year after the first year (i.e., year 2 to 10). PHMSA estimates that requiring HL operators

²⁹ The estimate is based on an analysis of MPMS data, which shows that 40 percent operate in one state, 34 percent operate in two or more states and 25 percent of the operators that filings could not be matched in NPMS, but which PHMSA estimates could possibly operate in more than one state and therefore includes them under this requirement.

to submit state-specific annual reports will increase the reporting burden by 11,748 hours (12 * 979) the first-year and each successive year. This may be an overestimation, since operators that are required to file multiple reports may only need a fraction of this time to complete the parts of the report required by 49 CFR Part 195 that pertain to information on pipelines that traverse State lines. PHMSA invites comments on this.

2.5.4. Requirement Four - Require LNG Operators to Submit Incident and Annual Reports

PHMSA proposes to amend §191.15, §191.17, and §193.2011 to require LNG operators to submit incident and annual reports consistent with the current reporting requirements for gas and HL pipeline operators. Currently, 49 CFR §193.2011 requires LNG operators to report leaks and spills under Part 191, but the incident reporting in §191.15 and the annual reporting in §191.17 exclude LNG facilities.

2.5.4.1 Cost to LNG Operators of Submitting Annual and Incident Report

PHMSA assumes:

- A total of 77 operators will be impacted.
- Representative fully loaded average hourly wage rates for the LNG industry are between \$55.82 (\$37.21*1.50) and \$90.00 (\$60.00*1.50).
- LNG operators will need to spend 12 additional hours to complete annual reports.
- Considering that between 1944 and 2004, three major LNG accidents occurred, with some 130 fatalities and injuries (not including those resulting from the Staten Island construction-related accident), PHMSA estimates that at most there may be one incident reported per year over the next 10 years.
- It will take 1 hour to prepare the incident report.

Table 7. Estimated Costs to LNG Operators

§191.15, §191.17, and §193.2011 Components	No. of Hours	Wage Rates (including 50 percent overhead)	Total LNG Operators	No. of Reports	Costs per Year
First-year additional information on annual reports	12 hours	\$55.82 to \$90.00 per hour	77	77	\$52,000 to \$83,000
First-year incident reports	1 hour	\$55.82 to \$90.00 per hour	77	1	\$56.00 to \$90.00
Total First-year Costs					\$52,056 to \$83,090
Annual recurring additional information on annual reports	12 hours	\$55.82 to \$90.00 per hour	77	77	\$52,000 to \$83,000
Annual recurring incident reports	1 hour	\$55.82 to \$90.00 per hour	77	1	\$56.00 to \$90.00
Total Recurring Costs					\$52,056 to \$83,090

PHMSA estimates that the first-year costs to the 77 LNG operators would range between approximately \$52,000 and \$83,000 (77*hourly wage rate*number of hours). PHMSA estimates the recurring costs in successive years would be in the same magnitude each year. (See Table 7.) Both the first-year and annual recurring cost totals include opportunity costs. PHMSA estimates that requiring LNG operators to submit annual reports and incident reports will increase the reporting burden by 13 hours the first-year and each successive year.

2.5.5. Requirement Five - National Pipeline Operator Identification Registry

Under §191.3 and §195.2 operators are required to submit reports using the Operator Identification Number (OPID) assigned by PHMSA. PHMSA is proposing to create a National Pipeline Operator Identification Registry with unique Operator Identification Number (OPID) for reporting requirements. The implementation and use of the National OPID Registry will enable PHMSA to consolidate information on pipeline operators and identify the interrelationship between pipeline owners and operators. Currently, there is no single source to connect owners to contract operators, parent companies, sister companies, and subsidiary corporate entities. The National OPID Registry will allow PHMSA to link its disparate database applications and new integrated technology systems under development. A uniform registry would also improve the accuracy of PHMSA performance monitoring and reduce the costs of compliance oversight.

PHMSA will require an “operator” of a regulated pipeline or facility, as defined in §191.3, to submit all reports using the OPID assigned to the operator. An operator will also be required to notify PHMSA at least 30 days in advance of certain profile or other

changes to their facilities which could impact public safety. These include any of the following:

- A change in the operating entity responsible for operating an existing pipeline, pipeline segment, or facility.
- A change in the operating entity responsible for managing or administering a safety program (such as an IM or Corrosion Protection Program) covering an existing pipeline, pipeline segment, or facility.
- The acquisition or divestiture of 50 or more miles of an existing pipeline or pipeline segment.
- The rehabilitation or replacement of pipe or other system modifications to upgrade or update an existing pipeline, pipeline segment, or facility costing \$5 million or more.
- The construction of 10 or more miles of a new hazardous liquid or gas transmission pipeline facility, or other construction project costing \$5 million or more.
- The construction of a new LNG facility, or the sale or purchase of an existing LNG facility.

This reporting requirement will provide an integrated national pipeline inventory of operator contact and facility information; ensure PHMSA's communication to and representations of the regulated entities are complete and accurate; enable PHMSA to distribute up-to-date pipeline information; provide accurate and up-to-date compilation of operating entities and facilities that is critical to PHMSA's pipeline safety mission; and provide critical information to various oversight entities, including Congress, GAO, the DOT IG, NTSB, and other safety partners.

Currently the NPMS does not have adequate data to fully illustrate which companies constitute the universe of operators and whether or not there is a single "umbrella" company that submits data for other related entities.³⁰ This requirement will improve PHMSA's capability to comply with the 2004 Congressional requirements for enhancing operator compliance with the NPMS and reduce maintenance costs.

³⁰ One example of inconsistency in the current OPID data is the number of entities in the Dunn & Bradstreet (D&B) database of pipeline owners and operators. The database contains some 2,558 records on pipeline entities – corporate or branch facilities – including operation type, employment, and DOT Operator ID. After deleting between 400 and 600 fields with zero employees, 1,905 records remain for entries that provided corporate-level employees (ranging between 1 and 42,000) and 2,123 records remained for entries that provided information on the number of employees at the facility. However, the questionable quality of the D&B database is evident when a review of the facility standard industrial classification (SIC) codes (field: "SIC1_Description, Columns FQ) reveals entries for an array of non-pipeline facilities. Included in the non-pipeline entries are: a Methodist church, a volunteer fire department, a gasoline service station, a mayor's office, a trucking company, a bus transportation facility, and a city & town manager's office.

2.5.5.1. Costs to Operators for Complying with the National OPID Registry Requirements

PHMSA assumes:

- All pipeline operators will be required to use the National Operator ID (OPID) Registry when reporting. PHMSA estimates that 15 percent of the HL pipelines and 23 percent of the NG operators will be impacted.³¹ In addition, PHMSA estimates that approximately 9 new LNG facility operators will begin operations each year over the 10-year period.³²
- The representative fully loaded average hourly wage rate for the HL industry is between \$60.59 (\$40.39*1.50) and \$90.00 (\$60.00*1.50); the representative fully loaded average hourly wage rate for the NG industry is between \$55.82 (\$37.21*1.50) and \$90.00 (\$60.00*1.50).
- Operators will need an estimated additional 10 minutes for entering registration information for the first year, and 5 minutes in future years.³³
- Operators will need an additional hour to submit advance notice of pipeline profile or other changes.

³¹ This estimate is based on the number of operators who reported more pipe miles installed during the 2000-2009 period, compared to previous annual filings.

³² This estimate is based on an LNG global growth rate of 50 percent in 4 years. This translates to approximately 13 percent per year. See <http://www.upstreamonline.com/live/article150318.ece>. Another estimate is based on the industry tripling in the next 20 years. This translates to approximately 12 percent per year. See <http://www.petroleum-economist.com/default.asp?page=14&PubID=46&ISS=8648&SID=325632>.

³³ This paperwork compliance burden information is based on the experience of the Federal Motor Carrier Safety Administration (FMCSA) in conducting registration of trucking carriers who have a DOT identification number in the FMCSA Trucking Registry. The Agency found it took trucking carriers 7 minutes to enter required data in the Registry for the first time and 5 minutes for subsequent years. Source: Vivian Oliver, FMCSA, in a telephone interview with Adam Klauber, the Volpe Center, June 28, 2007.

Table 8. Estimated Costs to HL and NG Operators

§191.3, and §195.2 Components	Time	Hourly Average Wage Rates (50 percent overhead)	Total Operators Impacted	Number of Reports	Cost to HL Operators	Cost to NG Operators	Cost to LNG Operators
First-year National OPID registry submissions	10 minutes	\$55.82 to \$90.00 for NG/LNG operators; \$60.59 to \$90.00 for HL operators	47 HL, 219 NG, 9 LNG facility operators	275	\$476 to \$707	\$5,000 to \$8,000	\$86 to \$139
First-year profile or other changes	1 hour	\$55.82 to \$90.00 for NG/LNG operators; \$60.59 to \$90.00 for HL operators	47 HL, 219 NG, 9 LNG facility operators	275	\$2,854 to \$4,239	\$28,399 to \$45,788	\$516 to \$832
Total first-year costs					\$3,329 to \$4,946	\$33,132 to \$53,240	\$602 to \$970
Annual recurring cost of OPID registry submissions	5 minutes	\$55.82 to \$90.00 for NG/LNG operators; \$60.59 to \$90.00 for HL operators	47 HL, 219 NG, 9 LNG facility operators	275	\$238 to \$353	\$2,410 to \$3,858	\$43 to \$69
Annual recurring profile or other changes	1 hour	\$55.82 to \$90.00 for NG/LNG operators; \$60.59 to \$90.00 for HL operators	47 HL, 219 NG, 9 LNG facility operators	275	\$2,854 to \$4,239	\$28,000 to \$47,000	\$516 to \$832
Total annual recurring costs					\$3,092 to \$4,592	\$31,324 to \$50,505	\$559 to \$875

Under this requirement, PHMSA estimates that the first-year costs to the HL and gas transmission operators expected to report would range between approximately \$37,000 and \$59,000 (number of operators * hourly wage rate * time). (See Table 8.) PHMSA estimates the recurring costs in successive years would be slightly lower because operators are expected to be more familiar with the filing procedures in successive years. The recurring annual costs would range approximately between \$32,000 and \$51,000 (number of operators * hourly wage rate * time).

PHMSA estimates that requiring HL operators, NG operators, and LNG facility operators to abide by the National OPID Registry requirements will increase the reporting burden by 1 hour and 10 minutes the first-year and 1 hour and 5 minutes each successive year.

2.5.6. Requirement Six - Electronic Reporting and Filing of Required Reports

PHMSA is proposing to modify Sections 191.7 and 195.58 to require electronic reporting and updating of operator data in PHMSA databases. Mandatory electronic filing is wholly consistent with the E-Government Act of 2002 (Public Law No: 107-347) and the Government Paperwork Elimination Act of 1998 (Public Law No: 105-277) requirements. The proposed electronic data collection and filing requirement is also consistent with Section 9 (B) of the PIPES Act, which requires annual reporting to the Secretary of DOT.

PHMSA expects that electronic reporting will improve processing and accuracy of the data submitted while reducing the paperwork burden. Placing required data fields within the reports will require pipeline operators to submit complete and accurate information.

Any electronic reporting requirement will be a function of the ability of the regulated operators to report data electronically to PHMSA. Currently between 55 and 80 percent of the operators submit reporting data electronically. PHMSA has provided electronic reporting as a method of filing since 2002.

Given the size and technological capacity of HL and NG pipeline operators, PHMSA believes they have the capacity to report data electronically. If an operator lacks capacity, PHMSA proposes the operator notify PHMSA and request an alternative method of reporting to comply with this requirement. For those not able to report electronically, PHMSA will arrange for the operator to use paper forms and file by mail or facsimile.

To the extent that the industry and the operators have the capacity to report electronically, this requirement imposes no additional regulatory burden and represents a reasonable attempt at enhancing efficiency and accuracy.

PHMSA provides access to information on the Business.gov website about compliance regulations and how to file incident reports. Business.gov currently provides access to,

and instructions for, the following five PHMSA forms and other electronic reports for pipeline operators:

- Form 7000-1 Accident Report – Hazardous Liquid Pipeline Systems
- Form 7000-1.1 Annual Report for Calendar Year 20xx Hazardous Liquid or Carbon Dioxide System
- Form 7100-1. Incident Report – Gas Distribution System
- Form 7100-1.1 Annual Report for Calendar Year 20xx Gas Distribution System
- Form 7100-2 Incident Report – Gas Transmission and Gathering Systems
- Safety Related Condition reports
- LNG Incident Report
- LNG Annual Report

PHMSA estimates approximately 2,700 operators will be impacted. The ruling makes no size exception, but PHMSA will follow the waiver approach to allow flexibility for small businesses lacking electronic report filing capability.

2.5.7. Requirement Seven - Merge Gas Transmission Gas Integrity Management Semi-Annual Performance Measures Report with the Gas Transmission Operator Report

Currently gas transmission pipeline operators submit IM performance semi-annually (§192.945 and §192.951). PHMSA is proposing to revise §192.951 to specify that operators submit the required performance measures through the annual report required in §191.15. Operators must submit a separate report for each State the pipeline traverses. Thus, operators of interstate pipelines must submit one report for each State-specific pipeline. This change will increase the number annual reports that interstate pipeline operators must file but reduce the reporting burden to industry because they no longer have to file semi-annual IM reports. These changes will enhance PHMSA's ability to monitor the pipeline.

Currently, PHMSA requires gas pipeline operators to prepare and submit semi-annual IM reports and annual reports (49 CFR § 192.945 and § 192.951). This proposed reporting change would eliminate the semi-annual reports. Operators would then incorporate semi-annual report information into a single IM annual report. Moving from semi-annual reporting to annual reporting would facilitate reporting by State for transmission operators.

PHMSA estimates that there may be some additional reporting costs and additional paperwork burdens to operators by changing these requirements. The change eliminates the semi-annual report, thereby decreasing the amount of paperwork and the time to process that paperwork, but also may increase the cost and paperwork burden for operators with interstate pipeline, since they would have to file a state-specific annual report for the interstate pipelines. State-specific reporting allows PHMSA to identify the location of the inspection, repair, leaks, failure, and incidents in HCAs.

By eliminating the semi-annual report and replacing it with the annual report, some savings accrue to operators. By requiring some operators to file multiple annual reports, some operators will accrue additional costs. PHMSA does not expect that cost increases and savings will cancel each other out. This is based on the following factors:

- PHMSA assumes that 50 percent of the 950 NG operators, or 475 pipeline operators, have interstate pipelines and will need to file multiple annual reports, whereas the other 50 percent, or 475 pipeline operators, are intrastate operators and will need to file one annual report (rather than a report semi-annually). PHMSA assumes intrastate operators' costs will decrease by 50 percent, since they no longer have to report semi-annually because they will be filing one instead of two reports annually.
- The 475 interstate operators will file multiple annual reports, one for each state in which they operate, under our assumptions. The calculations below are subject to rounding.
 1. Approximately 50 percent of the 475 operators or 238 will file two reports for a total of 475 reports. Their costs will remain the same because they are filing two reports annually; the same number of reports they filed in previous years when they filed semi-annually.
 2. Thirty percent of the 475 operators or approximately 143 will file five reports, for a total of 713 reports. They will file approximately 427 [$713 - (2*143)$] additional reports annually.
 3. Approximately 20 percent of the 475 operators or 95 will file 10 reports for a total of 950 reports. They will file approximately 760 [$950 - (2*95)$] additional reports annually.
- Operators will spend 12 hours completing the required annual report. PHMSA assumes that operators took 12 hours to file each of their semi-annual reports in past years.
- Representative fully loaded average hourly wage rates for gas operators are between \$55.82 ($\$37.21*1.50$) and \$90.00 ($\$60.00*1.50$).

Recurring costs are expected to be at the same level as the first-year costs.

Table 9. Estimated Costs to Gas Transmission Operators

\$195.49 Components	Number of Hours per Report	Average Hourly Wage Rates (includes 50 percent overhead)	Total Number of Operators Affected	Total Number of State-specific Reports	Costs per Year
First-year State-specific annual report	12	\$55.82 to \$90.00 per hour	950	713	\$477,596 to \$770,040
Annual recurring State- specific costs	12	\$55.82 to \$90.00 per hour	950	713	\$477,596 to \$770,040

PHMSA estimates that a total of 950 NG transmission pipeline operators will be affected. Previously operators filed an estimated 1,900 reports semi-annually (2 * 950) and now they will file 2,613 reports annually. Operators will now file an additional 713 reports (2,613 - 1,900) annually. PHMSA estimates that the cost incurred will range from \$477,596 (713*12*\$55.82) to \$770,040 (713*12*\$90.00) annually.

2.5.8. Requirement Eight - Require a Safety-Related Condition Report

Currently HL or NG pipeline operators report the existence of a safety-related condition (SRC) within 5 working days (but not later than 10 working days) by facsimile (49 CFR §191.25). PHMSA is proposing to amend § 191.25 to require operators to submit a standardized SRC form electronically.

This requirement will: Ensure that PHMSA obtains all the pertinent information it needs to perform its assessments and safety analyses; ensure that operators report all the required data, and to do so consistently across the regulated community; reduce the data management burden on PHMSA; and reduce the reporting burden on operators.

No additional costs to operators will result from this requirement.

2.5.9 Requirement Nine – Modify HL Operator Telephonic Notification of Accident Reporting Requirement

This is in response to the NTSB recommendation to modify 49 CFR § 195.52 of the hazardous liquid regulations to require pipeline operators to have a procedure to calculate and provide a reasonable initial estimate of released product in the telephonic report to the National Response Center (NTSB Safety Recommendation P-07-07). This also responds to the NTSB recommendation to modify the hazardous liquid telephonic notice regulation section to require pipeline operators to provide an additional telephonic report to the National Response Center, if significant new information becomes available during the emergency response phase of a reported event (NTSB Safety Recommendation P-07-

08). PHMSA estimates that there would be no appreciable additional costs to operators from this requirement.

2.5.10. Total Costs Associated with the Proposed Rule

The table below summarizes the costs to operators from the changes proposed. Additional information on costs by pipeline segment is included in Appendix A, Table A-2.

Table 10. Summary of Costs to Pipeline Operators (\$ Thousand)

Costs	HL Operators		NG Operators		LNG Facility Operators		Total Costs	
	Low	High	Low	High	Low	High	Low	High
First year	\$716	\$1,063	\$528	\$851	\$52	\$84	\$1,296	\$1,997
Annual recurring	\$715	\$1,062	\$511	\$823	\$52	\$84	\$1,278	\$1,969

2.6. Benefits of the Proposed Rule

Implementing the proposed rule will enhance PHMSA’s ability to:

- Understand, measure, and assess the performance of individual operators and industry as a whole.
- Integrate pipeline safety data in a way that will allow a more thorough, rigorous, and comprehensive understanding and assessment of risk.
- Expand and simplify existing electronic reporting by operators.
- Improve the data and analyses PHMSA relies on to make critical, safety-related decisions.
- Facilitate PHMSA’s allocation of inspection and other resources based on a more accurate accounting of risk.

Also, if the rule is effective there will be fewer incidents and accidents, resulting in fewer associated deaths, injuries, and property damage. The societal costs of those deaths, injuries, and property damage will also be reduced.

2.6.1. Average Number of Significant Pipeline Incidents

PHMSA uses specific criteria to identify which incidents are significant from a pipeline safety viewpoint. PHMSA defines Significant Incidents as those incidents reported by pipeline operators when any of the following conditions are met:

- Fatality or injury requiring in-patient hospitalization.
- \$50,000 or more in total costs, measured in 1984 dollars.
- Highly volatile liquid releases of five barrels or more or other liquid releases of 50 barrels or more.
- Liquid releases resulting in an unintentional fire or explosion.

Over the past 10 years, pipeline operators have reported, on average, approximately 287 significant incidents per year. HL operators have reported 125, including 64 gas transmission pipeline significant incidents, 90 gas distribution pipeline significant incidents, and eight gathering lines significant incidents per year.³⁴ One major LNG incident in 1979 has been associated with LNG facilities in the U.S.³⁵ There are far more abnormal events or near misses that occur on pipelines than those that are reported. Some events involve off-normal conditions for which controllers or automated safety systems intercede to prevent serious consequences, or the events do not progress to the point of needing controller or safety-system involvement. Some near misses, but not all, are documented by pipeline operators. PHMSA surmised there are probably also a number of low-order events or near misses that occur but go unobserved.

On average, over the past 10 years, 19 fatalities, 64 injuries, and approximately \$245 million in annual damages were associated with pipelines. This includes two fatalities, eight injuries, and approximately \$91.3 million in property damage for HL pipelines systems; three fatalities, seven injuries, and \$55.1 million in damages for gas transmission pipeline systems; and 14 fatalities, 49 injuries, and \$75.6 million in property damage for gas distribution pipeline systems.³⁶ In addition, the 1979 LNG facility accident adds one fatality, one injury, and \$3 million dollars to the total. The following table summarizes the number of deaths, injuries, and property damages for the pipelines and LNG facilities.

³⁴ PHMSA Stakeholder Communications. See Significant Incidents, <http://primis.phmsa.dot.gov/comm/reports/safety/SigPSI.html>. Accessed in April 2008.

³⁵ See http://www.beg.utexas.edu/energyecon/lng/documents/CEE_LNG_Safety_and_Security.pdf, p.79.

³⁶ Approximately 94% of the Property Damage for Gas Distribution Incidents in 2005 was caused by flooding in New Orleans. The amount of property damage represents lost gas and operator property damage, but does not include flood damage to public and private property.

Table 11. Average (1998-2007) Annual HL and NG Fatalities, Injuries, and Property Damage

Pipeline System	Fatalities	Injuries	Property Damage (\$ Millions)
HL	2	8	91
NG transmission	3	7	55
NG distribution	14	49	76
LNG (1979)	1	1	3
Total	20	65	248

The benefit of preventing a fatality can be measured by the Value of Statistical Life (VSL), defined as the value that society would place on the prevention of death for one unidentified person. On February 5, 2008, the Department issued a memorandum, "Treatment of the Economic Value of a Statistical Life in the Departmental Analyses," directing DOT analysts to use \$5.8 million as the best estimate for the economic value of preventing a human fatality. However the Department also requested that a supplementary analysis be conducted using values of \$3.2 million and \$8.4 million for each life saved. The analyses for the latter can be found in Appendix A of this document. In all three cases, we will use \$238,000 as the average cost of an injury requiring hospitalization.³⁷

2.6.2. Calculated Annual Societal Costs Using a VSL of \$5.8 Million

Given a VSL of \$5.8 million and the cost per injury at \$238,000, total annual societal costs of pipeline incidents are approximately \$356 million (20 * \$5.8 million + 65 * \$238,000 + \$225 million). This figure represents the *potential* benefits of remedial actions. That is, if there were a set of actions that could eliminate all the deaths, injuries, and property damages associated with pipeline incidents, it would be in the public interest to pursue those remedial actions, if they were to cost less than \$356 million per year.

Table 12 summarizes the societal costs for all pipeline systems, as well as the societal costs for HL, total NG pipelines, including transmission and distribution pipeline systems, and LNG facilities using a value of statistical life of \$5.8 million.

Table 12. Annual Societal Costs (Potential Benefits) of the Proposed Rule

³⁷ About half of the pipeline incident injuries requiring hospitalization are burns. A Consumer Product Safety Commission report on Injury Costs, "Revised Injury Cost Model," December 2000, reports that the average total costs associated with a thermal burn injury that results in hospitalization were \$200,479 (1995 \$) compared to \$149,142 (1995 \$) average total costs for all injuries that resulted in hospitalization. The latter figure overestimates somewhat the costs on non-burn injuries because it includes burn injuries. Using the BLS inflator to revise for 2007 dollars, results in \$272,754 for the average cost of burn injuries and \$202,909 for all injuries. Since about half the injuries are burns, we averaged the costs and rounded to \$238,000.

Pipeline System	Using a VSL of \$5.8 Million (\$ Million)
Total Annual Societal Costs — All Pipeline Incidents ³⁸	356
Annual Societal Costs of HL	105
Annual Societal Costs of NG Distribution	168
Annual Societal Costs NG Transmission	74
Annual Societal Costs of all NG	243
Annual Societal Costs of LNG	9

The *actual* benefits of the proposed rule will depend on how effective the rule is in eliminating deaths, injuries, and property damage. For example, if the proposed rule were deemed to be 1 percent effective, annual benefits would be approximately \$3.6 million ($\$356 \text{ million} * 0.01$). Similarly if the proposed rule were 5 percent effective, annual benefits would be approximately \$17.8 million ($\$356 \text{ million} * 0.05$). Since most requirements (with the exception of the National OPID Registry) in the proposed rule apply to some, but not all pipeline systems, annual benefits will differ depending on the pipeline system.

2.6.3. Comparison of the Costs and Benefits

One approach to evaluating regulation is to compare the projected benefits expected to result from the action to the estimated cost of complying with the action. This analysis compares the present value of costs to the present value of benefits as described below. In a previous section, the costs were presented as a total of first-year, or initial, costs that occur once and as costs that will be incurred every year.

The first-year costs range approximately from a low of \$1.3 million to a high of \$2.0 million. The stream of recurring annual costs ranges from a low of \$1.3 million to a high of \$2.0 million. Discounting the initial and recurring costs over 10 years at 3 percent and 7 percent (only the first year includes the initial costs) yields a range of present values of cost from \$12.1 million to \$18.7 million at 3 percent, and \$10.2 million to \$15.7 million at 7 percent. Thus, the range of the present value of compliance costs is from a low of approximately \$10.2 million to a high of \$18.7 million. Table 13 summarizes these costs. Appendix A contains the costs by requirement area for each of the pipelines affected.

³⁸ Does not add up due to rounding

Table 13. Present Value (over 10 Years) of Compliance Costs for All Pipelines (\$ Million)

	Low Costs	High Costs
First Year Costs	1.296	1.997
Recurring Costs	1.278	1.969
Total Costs	2.574(1 st year only)	3.966 (1 st year only)
Discounted at 3 percent	12.160	18.735
Discounted at 7 percent	10.187	15.696

2.6.3.1 Benefits of Reduced Societal Costs Using a Value of Statistical Life of \$5.8 Million

The benefits of reduced societal costs will be spread over the range of years for which the remedial action (the proposed rule) is carried out by the affected firms and enforced by the Agency. For a *low estimate* of benefits, the analysis assumes that 1 percent of societal costs are avoided each year owing to improvements in data collection. For a *high estimate*, the analysis assumes that 5 percent of the societal costs are reduced each year due to data collection improvements.

Using a VSL of \$5.8 million, annual benefits for HL pipeline systems would be approximately between \$1.1 million (\$105 million * 0.01) and \$5.2 million (\$105 million * 0.05); NG pipeline systems would be approximately between \$2.4 million (\$243 million * 0.01) and \$12.2 million (\$243 million * 0.05); and benefits for LNG facilities would be approximately between \$90,000 (\$9 million * 0.01) and \$450,000 (\$9 million * 0.05). For all systems the annual benefits would be approximately between \$3.6 million (\$356 million * 0.01) and \$17.8 million (\$356 million * 0.05) million. Table 14 summarizes the benefit streams with a value of statistical life of \$5.8 million.

Table 14. Annual Benefit Stream Using a VSL of \$5.8 Million

Pipeline Segments	Societal Costs (\$ million)	Benefits Stream (1 percent reduction in incidents – \$ million)	Benefits Stream (5 percent reduction in incidents – \$ million)
HL	105	1.1	5.2
NG	243	2.4	12.1
LNG	9	0.09	0.45
All Systems	356	3.6	17.8

2.6.3.2 Present Value of Benefits (over 10 Years) Using a VSL of \$5.8 Million

PHMSA estimates a high and low range of the present value of benefits and discounts the benefits over a 10 year period by 3 and 7 percent, respectively. The range of present value for all pipeline systems is from a low of \$25 million (low level of benefits discounted at 7 percent) to a high of \$152 million (high level of benefits discounted at 3 percent). See Table 15 below.

Table 15. Present Value of Benefits (over 10 Years) Using a VSL of \$5.8 Million

Pipeline Segment	Present Value of Benefits (discounted at 3 percent – \$ million)		Present Value of Benefits (discounted at 7 percent – \$ million)	
	Low	High	Low	High
HL	9	45	7	37
NG	21	103	17	85
LNG	.8	4	.6	3
All Systems	30	152	25	125

2.6.3.3 Comparison of Present Value of Benefits and Present Value of Costs

From Table 14, the benefits resulting from the proposed rule are estimated to be between \$3.6 million and \$17.8 million per year. The aggregate cost of the proposed rule to all pipeline operators is between \$1.3 million and \$2.0 million (Table 10), an average of less than \$800 per operator. Table 16 gives the present values for these estimated benefits and costs over 10 years at 3 percent and 7 percent discount rates. Low net benefits are the difference between the low benefits and high cost and high net benefits are the difference between high benefits and low cost.

TABLE 16. Present Values of Benefits, Costs, and Net Benefits of the Proposed Rule Calculated Over 10 Years (\$ million)

Discount Rate	Benefits		Costs		Net Benefits	
	Low	High	Low	High	Low	High
3%	30	152	12	19	12	140
7%	25	125	10	16	9	115

As can be seen from Table 16, the estimated present value of net benefits of the proposed rule is positive at each discount rate. At the 3 percent discount rate there appears to be approximately between \$12 million and \$140 million in net benefits over the 10-year period and at 7 percent approximately between \$9 million and \$115 million over 10 years. (Note – Low net benefits equal low benefits minus high costs at each discount rate, and high net benefits equal high benefits minus low costs at each discount rate.)

The average of the present value of net benefits at a 3 percent discount rate is approximately \$76 million ($[\$12 \text{ million} + \$140 \text{ million}]/2$) and approximately \$62 million ($[\$9 \text{ million} + \$115 \text{ million}]/2$) at 7 percent. The analysis concludes that the present value of net benefits ranges from about \$62 million to \$76 million.

Another way to evaluate the proposed rule is to ask how effective the reporting requirements need to be in reducing societal costs associated with pipeline incidents to

cover the costs of the rule. Even at the highest level of costs, about \$19 million present value over 10 years, the rule only needs to reduce societal costs by about one percent (\$19 million /\$3,041 million, which is the present value of societal costs, \$356.47 million, over a 10-year period discounted at 3 percent, or \$19 million/\$2,504 million present value of societal costs at 7 percent) to be cost effective.

A third approach to the proposed rule is to assume the highest total annual cost estimate to all pipeline operators, approximately \$2 million (from Table 10), is accurate. Since the average cost of an incident is roughly \$1,240,056 (\$356 million annual societal costs / 287 incidents), if the rule leads to only one fewer incident approximately every 19 months (\$2 million/ [\$1,240,056/12]) then it will be cost effective.

All of the above analyses of costs and benefits suggest that the rule is in the public interest.

Appendix A— Analyses Using VSLs of \$3.2 and \$8.4 Million

A.1. Significant Incidents in the Pipeline System

Table A.1 below shows the annual HL and NG fatalities, injuries, and property damage associated with significant incidents averaged over the 10-year period from 1998 through 2007. The table also reflects the lone incident reported in 1979 from an LNG accident.

Table A-1. Average (1998-2007) Annual HL and NG Fatalities, Injuries, and Property Damage

Pipeline System	Fatalities	Injuries	Property Damage (\$ Millions)
HL	2	8	91.3
NG transmission	3	7	55.1
NG distribution	14	49	75.6
LNG	1	1	3
Total	20	65	225

A.2. Comparison of the Costs and Benefits

One approach to evaluating regulation is to compare the projected benefits expected to result from the action to the estimated cost of complying with the action. This analysis compares the present value of costs to the present value of benefits as described below.

Table A.2 shows the range of annual and recurring costs discounted over 10 years by requirement area and pipeline segment.

Table A.2. Present Value (over 10 Years) of Compliance Costs by Requirement Area

Requirement Area	First-Year Costs \$ Thous.	Annual Recing. Costs \$ Thous.	Discount Rate	HL Low Estimate (\$)	HL High Estimate (\$)	NG low Estimate (\$)	NG High Estimate (\$)	LNG Low Estimate (\$)	LNG High Estimate (\$)
Changing the definition of incident	17 to 28	2 to 3	3%			33,565	52,775	Negligible	Negligible
			7%			29,935	47,239	Negligible	Negligible
Reporting State-specific Information	712 to 1,057	712 to 1,057	3%	6,764,767	10,042,638				
			7%	5,666,211	8,411,776				
Submitting LNG Reports	52 to 83	52 to 83	3%					494,588	789,444
			7%					414,270	661,244
National OPID Registry	37 to 59	35 to 56	3%	29,608	43,973	299,635	483,039	329,243	527,012
			7%	24,829	36,875	251,228	404,995	276,057	441,870
NG Annual Reports	478 to 770	478 to 770	3%	4,537,676	7,316,209				
			7%	3,800,786	6,128,102				

Table A.3 shows the total first-year and recurring costs by pipeline segment.

Table A.3. Summary of Costs to Pipeline Operators (\$ Thousand)

Costs	HL Operators		NG Operators		LNG Facility Operators		Total Costs	
	Low	High	Low	High	Low	High	Low	High
First year	716	1,063	528	851	52	84	1,296	1,997
Annual recurring	715	1,062	511	823	52	84	1,278	1,969

Table A.4. Present Value (over 10 years) of Compliance Costs by Pipeline Segment

Discounted Costs	Discounted at 3 percent (\$ Million)	Discounted at 7 percent (\$ Million)
HL Low	6.8	5.7
HL High	10.0	8.4
NG Low	4.8	4.1
NG High	7.9	6.6
LNG Low	.8	.7
LNG High	1.3	1.1
All Segments Low	12.1	10.2
All Segments High	18.7	15.7

Table A.5 summarizes the societal costs for all pipeline systems, as well as the societal costs for HL, NG (including NG transmission and distribution pipeline systems), and LNG facilities using VSLs of \$3.2 million and \$8.4 million, respectively.

Table A.5. Annual Societal Costs (Potential Benefits) of the Proposed Rule Using VSLs of \$3.2 and \$8.4 Million

Pipeline Segment	VSL of \$3.2 Million (\$ Millions)	VSL of \$8.4 Million (\$ Millions)
All Pipeline Segments	304	408
HL	100	110
NG Distribution	132	205
NG Transmission	66	82
All NG Pipelines	198	287
LNG	6	12

Given a VSL of \$3.2 million and the cost per injury at \$238,000, total annual societal costs of pipeline incidents are approximately \$304 million ($20 * \$3.2 \text{ million} + 65 * \$238,000 + \$225 \text{ million}$). Given a VSL of \$8.4 total annual costs of pipeline incidents are approximately \$408 million. These figures represent the *potential* benefits of remedial

actions. If there is a set of actions that could eliminate all the deaths, injuries, and property damages associated with pipeline incidents at a cost of less than \$304 or \$408 million per year respectively, it would be in the public interest to pursue those remedial actions.

The *actual* benefits of the proposed rule will depend on how effective the rule is in eliminating deaths, injuries, and property damages. Tables A-6 and A-7 present the benefits of the proposed rule using VSLs of \$3.2 and \$8.4 million, given the level of effectiveness, herein assumed to be 1 percent and 5 percent, respectively. Numbers may not add up due to rounding.

Table A.6. Annual Benefits (\$ millions) of Reduced Societal Costs Using a VSL of \$3.2 Million

Pipeline System	At 1 percent Effective	At 5 percent Effective
HL	1	5
NG	2	10
LNG	0.064	0.322
All Systems	3	15

Table A.7. Annual Benefits (\$ millions) of Reduced Societal Costs Using a VSL of \$8.4 Million

Pipeline System	At 1 percent Effective	At 5 percent Effective
HL	1	6
NG	3	14
LNG	0.116	0.582
All Systems	4	20

Since most requirements (with the exception of the National OPID Registry) in the proposed rule apply to some, but not all pipeline systems, annual benefits will differ depending on the pipeline system.

PHMSA estimates a high and low range of the present value of benefits by discounting the 10-year annual benefit streams by 3 and 7 percent, respectively. Tables A-8 and A-9 summarize the benefits using VSLs of \$3.2 million and \$8.4 million, respectively. Numbers may not add up due to rounding.

Table A.8. Present Value of Benefits (over 10 years) Using a VSL of \$3.2 Million

Pipeline Segment	Incidents Cut by 1 Percent (\$ Million)	Incidents Cut by 5 Percent (\$ Million)	Low Benefits Discounted at 3 and 7 Percent (\$ Million)		High Benefits Discounted at 3 and 7 Percent (\$ Million)	
HL	1	5	8	7	42	35
NG	2	10	17	14	85	70
LNG	.062	0.322	0.549	0.452	3	2
All Systems	3	15	26	21	130	107

Table A.9. Present Value of Benefits (over 10 years) Using a VSL of \$8.4 Million

Pipeline Segment	Incidents Cut by 1 Percent (\$ Million)	Incidents Cut by 5 Percent (\$ Million)	Low Benefits Discounted at 3 and 7 Percent (\$ Million)		High Benefits Discounted at 3 and 7 Percent (\$ Million)	
HL	1	6	9	8	47	39
NG	3	14	24	20	122	101
LNG	0.116	0.582	0.993	0.817	4	4
All Systems	4	20	35	29	174	143

The present values of benefits in Tables A.8 and A.9 are higher than the present value of costs of the rule at the corresponding discount rates (see Table 16 in the report).

Appendix B — Regulatory Flexibility Analysis

Regulatory Flexibility Act (P.L. 96-354)

DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Parts 192

[Docket ID PHMSA-08-0291]

RIN 2137-AE33

Pipeline Safety: Pipeline and Natural Gas Reporting Requirements

Action: Notice of Proposed Rule Making

Initial Regulatory Flexibility Analysis

The Regulatory Flexibility Act of 1980, as amended, requires Federal agencies to conduct a separate analysis of the economic impact of rules on small entities. The Regulatory Flexibility Act requires that Federal agencies take small entities' concerns into account when developing, writing, publicizing, promulgating, and enforcing regulations. To this end, the Act requires that agencies detail how they have met these concerns, by including a Regulatory Flexibility Analysis (RFA). An initial RFA, which accompanies a NPRM, must include the following five elements:

- 1) A description of the reasons why action by the Agency is being considered;
- 2) A succinct statement of the objectives of, and legal basis for, the proposed rule;
- 3) A description of and, where feasible, an estimate of the number of small entities to which the proposed rule would apply;
- 4) A description of the proposed reporting, recordkeeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that would be subject to the requirements and the type of professional skills necessary for preparing the report or record; and
- 5) Identification, to the extent practicable, of all Federal rules which may duplicate, overlap, or conflict with the proposed rule.

A discussion of these requirements follows.

1. *A description of the reasons why action by the agency is being considered.*

PHMSA recognized the need to revise several components of the rules relating to data reporting, including those relating to Section 191.3 and 195 subpart B (to modify reporting requirements for operators of hazardous liquid pipelines); to Section 191 references to LNG operators; to creating a National Pipelines Owner/Operator Registry; and to facilitating electronic data collection.

As the nation's repository for pipeline data, PHMSA's data are used by many entities for many reasons, including planning purposes, safety-related research, public critical-safety information, and statistical analysis. The NPRM is intended to address recognized needed improvements and enhance safety by ensuring that PHMSA has accurate safety data to manage and reduce risks associated with natural gas transmission and hazardous liquid pipeline systems and LNG facilities.

The modifications noted in the proposed rule will affect hazardous liquid and gas pipelines (distribution and transmission), and liquefied natural gas (LNG) facility operators.

2. *A succinct statement of the objectives of, and legal basis for, the proposed rule.*

The Natural Gas Pipeline Safety Act of 1968 and the Hazardous Liquid Pipeline Safety Act of 1979 require the reporting of incidents on natural gas transmission and distribution pipelines. These reporting requirements, as defined in 49 CFR Section 191.15, mandate that operators report any incident that meets certain specific conditions.

PHMSA proposes the following regulatory amendments and changes to the 49 CFR to enhance general data and data management improvements for pipelines: (1) Modify the scope of part 191 addressed in 49 CFR Section 191.1, to reflect the changes made in the scope of part 192 of the changes to the definition of gas gathering lines; (2) Change the definition of an "incident" to require an operator to report a fire not intentionally set by the operator, or an explosion, and establish a volumetric basis for reporting unexpected or unintentional gas loss; (3) Require operators of hazardous liquid pipelines to submit pipeline information by state on the annual report for hazardous liquid pipelines; (4) Require operators of Liquefied Natural Gas (LNG) facilities to submit incident and annual reports; (5) Create and require participation in a National Pipeline Operator Registry; (6) Require operators to report and file data electronically whenever possible; (7) Merge the natural gas transmission IM Semi-Annual Performance Measures Report with the annual reports; (8) Require operators to use a standard form in submitting Safety-Related Condition Reports; and (9) Require additional telephonic notification of accidents.

These revisions will result in improvements not only to the data but also to the analyses PHMSA relies on to make critical safety-related decisions and to more properly allocate scarce agency resources based on risk.

3. *A description of and, where feasible, an estimate of the number of small entities to which the proposed rule would apply.*

The Small Business Administration criteria for defining a small entity in the hazardous liquid pipeline industry is 1,500 employees, as specified in the North American Industry Classification System (NAICS) codes. The NAICS codes relevant to hazardous liquid pipelines are code 486110, Pipeline Transportation of Crude Oil; and code 486910, Pipeline Transportation of Refined Petroleum Products. PHMSA does not collect information on number of employees or revenues for pipeline operators. Such a collection would require OMB approval. Nevertheless, PHMSA continues to seek information about the number of small pipeline operators to more fully determine impact on small entities, that is, the companies with less than 1,500 employees, including employees of parent corporations.

PHMSA has reviewed the data it collects from the hazardous liquid (HL) pipeline industry and has estimated there are probably 10 to 20 small entities in this industry. Several of the operators do not transport petroleum products, but rather transport carbon dioxide, ammonia, or chlorine and may not be indirect competition with large pipeline operators. Other small operators remain competitive, as they have developed niche markets and may serve only a small number of customers.

For the Natural Gas Transmission pipeline industry (NAICS 486210), the size standard for a small business is \$6.5 million in annual revenues. The size standard for Natural Gas Distribution is 500 employees. PHMSA estimates that about 480 of the gas transmission and gathering firms have less than \$6.5 million in revenues and about 1,000 gas distribution firms have fewer than 500 employees. PHMSA assumes that no more than 61 percent will be affected by the proposed rule.

Information on the market structure of the LNG Industry is scarce; however the Energy Information Administration indicates that the LNG Industry is expanding to the point that the LNG operators are at full capacity, facing increasing demand. In addition, they report costs are decreasing in the LNG industry.³⁹ The estimated reporting cost to LNG facilities operators is very low, and thus, PHMSA assumes that LNG facilities operators will not be adversely affected by the requirements in the proposed rule.

³⁹ <http://www.eia.doe.gov/oiaf/analysispaper/global/lngindustry.html>.

4. *A description of the proposed reporting, recordkeeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which would be subject to the requirements and the type of professional skills necessary for preparation of the report or record.*

The proposed rule contains the following information collection requirements. PHMSA assumes that an engineer would be responsible for collecting and providing the information required under the proposed rule. Engineers in the oil and gas transportation industry earn on average fully loaded hourly wage rate of between \$55.82 ($\37.21×1.50 overhead) and \$90.00 ($\60.00×1.50 overhead).⁴⁰

1. PHMSA is proposing to change the definition of an "incident" for Natural Gas pipelines and LNG facilities (49 CFR Part 191.3): (a) to include fires not intentionally set and explosions as categories into the definition of reportable incidents; and (b) to establish a volumetric basis for unplanned gas loss for reporting an incident.

There is an added information collection burden on NG and LNG operators resulting from this increased reporting requirement. Reports are expected to increase by 308 the first year and by 34 reports in subsequent years. PHMSA estimates that approximately 1,349 ($0.61 \times 2,212$) NG operators could be considered small and 9 LNG operators. Based on PHMSA's estimated cost to 2,212 NG operators and 77 LNG operators of between \$17,000 and \$28,000, (about \$7.42 to \$12.79 per operator) the total first-year cost to the 2,189 small operators will range between \$10,546 and \$17,370 (about the same average cost per firm as for all operators). Based on PHMSA's estimate of annual recurring cost of between approximately \$2,000 and \$3,000 for NG operators, the annual recurring costs to all small firms combined would be between \$1,241 and \$1,861.

2. PHMSA is proposing to require HL operators to submit state-specific annual reports.

Based on PHMSA's estimates of first-year costs to the 188 interstate HL operators of between approximately \$712,000 and \$1,057,000 (about \$3,787 to \$5,622 per firm), PHMSA estimates that first year costs to the 15 small operators would be approximately between \$56,809 (about the same cost per firm as the average for all operators) and \$84,335. PHMSA estimates the recurring costs in successive years would be in the same magnitude each year (year 2 to 10).

3. PHMSA is requiring LNG operators to submit additional information on their annual reports and submit incident reports.

⁴⁰ The lower range is from BLS and the upper range is an industry estimate.

PHMSA estimates that the first-year costs to the 77 LNG operators would range between approximately \$52,000 and \$83,000.⁴¹ PHMSA estimates the recurring costs in successive years would be in the same magnitude each year. Although there is scarce information about the LNG industry market structure, based on Energy Information Administration data, PHMSA assumes that only a small fraction of the LNG operators are small, and that the cost to small operators may be negligible. It would be approximately between \$675 and \$1,078 per LNG operator.

4. PHMSA is proposing to require HL operators, NG operators, and LNG facility operators to use the National Pipeline Operator Identification registry to submit all reports. In addition PHMSA is requiring operators to notify PHMSA at least 30 days in advance of certain profile and other changes in their facilities. Changes that require reporting include the following:
 - A change in the operating entity responsible for operating an existing pipeline, pipeline segment, or facility.
 - A change in the operating entity responsible for managing or administering a safety program (such as an Integrity Management or Corrosion Protection Program) covering an existing pipeline, pipeline segment, or facility.
 - The acquisition or divestiture of 50 or more miles of an existing pipeline or pipeline segment.
 - The rehabilitation or replacement of pipe or other system modifications to upgrade or update an existing pipeline, pipeline segment, or facility costing \$5 million or more.
 - The construction of 10 or more miles of a new hazardous liquid or gas transmission pipeline facility, or other construction project costing \$5 million or more.
 - The construction of a new LNG facility, or the sale or purchase of an existing LNG facility.

The following assumptions were made to calculate the increased burden on operators:

- All pipeline operators will be required to use the National OPID Registry when reporting. PHMSA estimates that 15 percent of the HL pipeline operators and 23 percent of the NG operators will be impacted. This translates to 47 HL operators

⁴¹ We use different average hourly wage rates for the low range based on information from BLS. For the low range, we use an average wage rate (including overhead) for an engineer in the HL industry of \$60.59, and in the NG industry the wage rate is \$55.82. For the high range we use an industry determined wage rate of \$90.00 per hour.

and 509 NG transmission operators.⁴² In addition, approximately nine LNG facility operators will be impacted.⁴³

- Operators will need an estimated additional 10 minutes for entering registration information for the first year and 5 minutes in future years.⁴⁴
- Operators will need 1 additional hour for submitting advance notice of new pipeline construction.

PHMSA estimates that only a small percentage of operators will be affected, approximately 565. Based on PHMSA's estimate of first-year costs for all operators ranging between \$37,000 and \$59,000 (about \$65.49 to \$104.42 per operator), PHMSA estimates that the first-year costs to small operators would range between approximately \$8,524 and \$13,642. Recurring costs in successive years would be between \$8,046 and \$12,872.

5. PHMSA is proposing to require NG operators to submit performance measures through the annual report required in §191.15.

Operators must submit a separate report for each State the pipeline traverses. Thus, operators of interstate pipelines must submit one report per State. This change will increase the number of annual reports that interstate pipeline operators must file but reduce the reporting burden to industry because they no longer have to file semi-annual IM reports. By eliminating the semi-annual report and replacing it with the annual report, some savings accrue to operators. By requiring some operators to file multiple annual reports, some operators will accrue additional costs. PHMSA does not expect that cost increases and savings will cancel each other out. This is based on the following factors:

PHMSA estimates that few, if any, small operators will be affected since small transmission operators' pipelines rarely cross State lines. PHMSA estimates that fewer than (or at least 10) small operators may be affected. Their aggregate cost is approximately between \$2,161 and \$3,481 (about \$216 to \$348 per firm) the first year and in the same range in successive years.

⁴² This estimate is based on the number of operators who reported more pipe miles installed during 2000 to 2009, compared to previous annual PHMSA filings.

⁴³ This estimate is based on an LNG global growth rate of 50 percent in 4 years. This translates to approximately 13 percent per year. See <http://www.upstreamonline.com/live/article150318.ece>. Another estimate is based on the industry tripling in the next 20 years. This translates to approximately a 12 percent per year.

See <http://www.petroleum-economist.com/default.asp?page=14&PubID=46&ISS=8648&SID=325632>.

⁴⁴ This paperwork compliance burden information is based on the experience of the Federal Motor Carrier Safety Administration (FMCSA) in conducting registration of trucking carriers who have a DOT identification number in the FMCSA Trucking Registry. The agency found that it took trucking carriers 7 minutes to enter required data in the Registry for the first time and 5 minutes for subsequent years. Source: Vivian Oliver, FMCSA, in a telephone interview with Adam Klauber, the Volpe Center, June 28, 2007.

6. PHMSA is modifying HL operator telephonic notification of accident reporting requirement if significant information becomes available during the emergency.

PHMSA does not foresee any undue impact to small operators resulting from this requirement.

The table below summarizes the average cost to small operators by pipeline sector.

	Average Cost to HL Operators - Low	Average Cost to HL Operators - High	Average Cost to NG Operators - Low	Average Cost to NG Operators - High	Average Cost to LNG Operators - Low	Average Cost to LNG Operators - High
First Year	\$3,805	\$5,649	\$239	\$385	\$691	\$1,103
Recurring	\$3,804	\$5,647	\$231	\$349	\$683	\$1,091

5. *An identification, to the extent practicable, of all Federal rules that may duplicate, overlap, or conflict with the proposed rule.*

No Federal rules would duplicate, overlap, or conflict with the proposed rule.

PHMSA prepared a Regulatory Impact Analysis (RIA). A copy of the RIA was placed in the Docket (Document No. PHMSA-08-0291).

Appendix C — Paperwork Reduction Act Analysis (44 U.S.C. 3501 et seq.)

DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Parts 191,192, 193 and 195

[Docket No. PHMSA-08-0291]

Rin 2137-AE33

Action Name: Pipeline Safety: Pipeline and Liquefied Natural Gas Reporting Requirements

Agency: Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (DOT)

Category: Notice of Proposed Rulemaking

C.1 Paperwork Reduction

This NPRM proposes additional information collection requirements. Those requirements will affect natural gas (NG) and hazardous liquid (HL) pipeline operators and liquefied natural gas (LNG) facility operators. HL operators will submit separate annual reports for each state the pipeline traverses and they will provide a telephonic report if significant information becomes available during an emergency response.. LNG operators will be required to submit annual and incident reports. NG Transmission operators will submit IM performance measures through the annual reports. NG, HL and LNG operators will participate in a National Pipeline Identification Registry and will use a standard form in submitting safety related condition reports.

As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), PHMSA will present a separate paperwork analysis to the Office of Management and Budget for review. A copy of the analysis will be placed in the docket.

The proposed rule contains information collection requirements.

PHMSA is proposing to revise the Pipeline Safety Regulations to improve the reliability and utility of data collections from operators of NG pipelines, HL pipelines, and LNG pipeline facilities. These revisions will enhance PHMSA's ability to: Understand, measure, and assess the performance of individual operators and industry as a whole; integrate pipeline safety data in a way that will allow a more thorough, rigorous, and comprehensive understanding and assessment of risk; and expand and simplify existing electronic reporting by operators. These revisions will result in improvements to both the

data and the analyses PHMSA relies on to make critical, safety-related decisions, and they will facilitate PHMSA's allocation of inspection and other resources based on a more accurate accounting of risk.

C.2 Burden Hours and Cost of PHMSA Proposed Rule to HL, NG Pipeline Operators and LNG Facility Operators

1. PHMSA is proposing to change the definition of an "Incident" for NG pipelines and LNG facilities (49 CFR Part 191.3): (a) to include fires not intentionally set and explosions as categories into the definition of reportable incidents; and (b) to establish a volumetric basis for unplanned gas loss for reporting an incident.

There is added information collection burden on LNG and NG operators resulting from this increased reporting requirement. Reports are expected to increase from 154 to 308 the first year and then increase by 34 reports each successive year.

The following assumptions were made to calculate the information collection burden for the preparation of reports:

- A total of 2,289 NG operators and LNG facility operators are impacted, consisting of 950 transmission operators, 1,262 distribution operators, and 77 LNG facility operators.⁴⁵
- Reports are expected to increase from an annual average of 154 per year in a 10-year period (1998 to 2007) to 462 in the first year, a net increase of 308 reports.
- Representative wage rates in the NG industry are between \$55.82 and \$90.00 per hour.
- Based on previous years' trends, there will be an 11 percent increase (of 34 additional reports, $308 \times .11$) in successive years.
- LNG and NG operators will be required to spend 1 additional hour to complete reports.

PHMSA estimates that the first-year costs to the 2,289 operators (950 NG transmission operators, 1,262 distribution operators, and 77 LNG facility operators) will range between \$17,000 and \$28,000 ($308 \times$ burdened, average hourly wage rate of \$55.00 and \$90.00). PHMSA estimates annual recurring cost would be between approximately \$2,000 and \$3,000 for NG operators ($34 \times$ burdened, average hourly wage rate of \$55.82 and \$90.00).

The change in definition of an "incident" for NG pipelines in 49 CFR Part 191.3 to: (a) include fires not intentionally set and explosions as categories into the definition of reportable incidents; and (b) establish a volumetric basis for unplanned gas loss for reporting an incident which would result in added information collection burden. PHMSA

⁴⁵ <http://ops.dot.gov/stats/DT98.htm>.

estimates the PRA burden for NG operators would increase by 308 hours the first-year and 34 hours each successive year.

2. PHMSA is proposing to require HL operators to submit State-specific annual reports. To estimate costs and burden hours to HL operators, PHMSA assumes:

- All 314 HL pipeline operators (intrastate and interstate) will have to submit state-specific information on their annual reports.
- Approximately 40 percent of the pipeline operators or 126 pipeline operators ($.40 \times 314$) are intrastate and 60 percent or 188 ($.60 \times 314$) are interstate.⁴⁶
- The 126 intrastate HL pipeline operators will have to file one annual report, while the 188 interstate HL pipeline operators must file multiple times as needed for the designated System Type for each State in which pipeline facilities exist.
- Approximately 50 percent of the 188 interstate pipeline operators, or 94 operators ($.50 \times 188$) will file, on average, two annual reports for a total of 188 (94×2) reports.
- Approximately 30 percent of the 188 interstate operators or 56 operators ($.30 \times 188$) will file, on average, five annual reports for a total of 283 (56×5).
- Approximately 20 percent of the 188 interstate operators or 38 operators ($.20 \times 188$) will file, on average, 10 annual reports for a total of 377 reports.
- Representative fully loaded average hourly wage rates for HL operators are between \$60.59 (40.39×1.50) and \$90.00 ($\$60.00 \times 1.50$).
- HL operators will be required to spend 12 additional hours filing each State-specific annual report.

PHMSA estimates that HL operators will file approximately 979 reports per year with state specific information included. PHMSA estimates that the first-year costs to HL operators would range between approximately \$712,000 (979 reports * \$60.59 * 12 hours) and \$1,057,000 (979 reports * \$90.00 * 12 hours). PHMSA estimates the recurring costs in successive years would be in the same magnitude each year after the first year (i.e., year 2 to 10). PHMSA estimates that requiring HL operators to submit state-specific annual reports will increase the reporting burden by 11,748 hours (12×979) the first-year and each successive year. This may be an overestimation, since operators that are required to file multiple reports may only need a fraction of this time to complete the parts of the report required by 49 CFR Part 195 that pertain to information on pipelines that traverse State lines. PHMSA invites comments on this.

3. PHMSA is requiring LNG operators to submit additional information on their annual reports and submit incident reports. The following assumptions were made to estimate the burden on LNG operators:

⁴⁶ The estimate is based on an analysis of MPMS data, which shows that 40 percent operate in one state, 34 percent operate in two or more states and 25 percent of the operators that filings could not be matched in NPMS, but which PHMSA estimates could possibly operate in more than one state and therefore includes them under this requirement.

- A total of 77 operators are expected to prepare annual reports.⁴⁷
- Average hourly wage rates are between \$55.82 and \$90.00.
- Between 1944 and 2004, three major LNG accidents occurred with some 130 fatalities and injuries (not including those resulting from the Staten Island construction-related accident), so PHMSA estimates that at most there may be no more than one incident reported per year overall.
- LNG operators will need to spend 13 additional hours to complete both reports.

PHMSA estimates that the first-year costs to the 77 LNG operators would range between approximately \$52,000 and \$83,000 (77 * hourly wage rate * number of hours). PHMSA estimates the recurring costs in successive years would be in the same magnitude each year. Both the first-year and annual recurring cost totals include opportunity costs. PHMSA estimates that requiring LNG operators to submit incident and annual reports will increase the reporting burden by 13 hours the first year and each successive year.

4. PHMSA is proposing to require HL, NG, and LNG operators to use the National Pipeline Operator Identification registry to submit all reports. In addition PHMSA is requiring operators to notify PHMSA at least 30 days in advance of certain profile and other changes in their facilities. Changes include the following:
 - A change in the operating entity responsible for operating an existing pipeline, pipeline segment, or facility.
 - A change in the operating entity responsible for managing or administering a safety program (such as an Integrity Management or Corrosion Protection Program) covering an existing pipeline, pipeline segment, or facility.
 - The acquisition or divestiture of 50 or more miles of an existing pipeline or pipeline segment.
 - The rehabilitation or replacement of pipe or other system modifications to upgrade or update an existing pipeline, pipeline segment, or facility costing \$5 million or more.
 - The construction of 10 or more miles of a new hazardous liquid or gas transmission pipeline facility, or other construction project costing \$5 million or more.
 - The construction of a new LNG facility or the sale or purchase of an existing LNG facility.

The following assumptions were made to calculate the increased burden on operators:

- All pipeline operators will be required to use the National OPID Registry when reporting. PHMSA estimates that 15 percent of the HL pipeline operators and 23 percent of the NG operators will be impacted. This translates to 47 HL operators

⁴⁷ <http://ops.dot.gov/stats/DT98.htm>.

and 509 NG transmission operators.⁴⁸ In addition, approximately nine LNG facility operators will be impacted.⁴⁹

- Operators will need an estimated additional 10 minutes for entering registration information for the first year, and 5 minutes in future years.⁵⁰
- Operators will need an additional hour for submitting advance notice of new pipeline construction.

PHMSA estimates that the first-year costs to the operators that are expected to report under this requirement would range between approximately \$37,000 and \$59,000 (number of operators * hourly wage rate * time). Because operators are expected to be more familiar with the filing procedures in successive years, PHMSA estimates the recurring costs in successive years would be slightly lower. The recurring annual costs would range approximately between \$32,000 and \$51,000 (number of operators * hourly wage rate * time).

PHMSA estimates that requiring HL, NG, and LNG operators to abide by the National OPID Registry requirements will increase the reporting burden by 1 hour and 10 minutes the first-year and 1 hour and 5 minutes each successive year.

5. PHMSA is proposing to require NG operators to submit performance measures through the annual report required in §191.15. Operators must submit a separate report for each State the pipeline traverses. Thus, operators of interstate pipelines must submit one report per State. This change will increase the number of annual reports that interstate pipeline operators must file but reduce the reporting burden to industry because they no longer have to file semi-annual IM reports.

By eliminating the semi-annual report and replacing it with the annual report, some savings accrue to operators. By requiring some operators to file multiple annual reports, some operators will accrue additional costs. PHMSA does not expect that cost increases and savings will cancel each other out. This is based on the following factors:

- PHMSA assumes that 50 percent of the 950 NG operators, or 475 pipeline operators, have interstate pipelines and will need to file multiple annual reports,

⁴⁸ This estimate is based on the number of operators who reported more pipe miles installed during 2000 to 2009, compared to previous annual PHMSA filings.

⁴⁹ This estimate is based on an LNG global growth rate of 50 percent in 4 years. This translates to approximately 13 percent per year. See <http://www.upstreamonline.com/live/article150318.ece>. Another estimate is based on the industry tripling in the next 20 years. This translates to approximately 12 percent per year. See <http://www.petroleum-economist.com/default.asp?page=14&PubID=46&ISS=8648&SID=325632>.

⁵⁰ This paperwork compliance burden information is based on the experience of the Federal Motor Carrier Safety Administration (FMCSA) in conducting registration of carriers who have a DOT identification number in the FMCSA Trucking Registry. The agency found that it took trucking carriers 7 minutes to enter required data in the Registry for the first time and 5 minutes for subsequent years. Source: Vivian Oliver, FMCSA, in a telephone interview with Adam Klauber, the Volpe Center, June 28, 2007.

whereas the other 50 percent, or 475 pipeline operators, are intrastate operators and will need to file one annual report (rather than a report semi-annually). PHMSA assumes intrastate operators' costs will decrease by 50 percent, since they will be filing one annual report instead of two semi-annual reports annually.

- The 475 interstate operators will file multiple annual reports, one for each state in which they operate. The calculations below are subject to rounding under our assumptions.
 1. Approximately 50 percent of the 475 operators or 238 will file two reports for a total of 475 reports. Their costs will remain the same because they are filing two reports annually; the same number of reports they filed in previous years when they filed semi-annually.
 2. Thirty percent of the 475 operators or approximately 143 will file five reports, for a total of 713 reports. They will file approximately 427 [713 - (2*143)] additional reports annually.
 3. Approximately 20 percent of the 475 operators or 95 will file 10 reports for a total of 950 reports. They will file approximately 760 [950 - (2*95)] additional reports annually.
- Operators will spend 12 hours completing the required annual report. PHMSA assumes that operators took 12 hours to file each of their semi-annual reports in past years.
- Representative fully loaded average hourly wage rates for gas operators are between \$55.82 ($\$37.21 * 1.50$) and \$90.00 ($\$60.00 * 1.50$).

Recurring costs are expected to be at the same level as the first-year costs.

PHMSA estimates that a total of 950 NG transmission pipeline operators will be affected. Previously operators filed an estimated 1,900 (2 * 950) reports semi-annually and now they will file 2,613 (475 + 950 + 713 + 475) reports annually. Operators will now file an additional 713 reports (2,613 - 1,900) annually. PHMSA estimates that the cost incurred will range from \$477,596 ($713 * 12 * \55.82) to \$770,040 ($713 * 12 * \90.00) annually.

Appendix D —PHMSA/OPS Environmental Checklist and Assessment

DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Parts 191, 192, 193, and 195

[Docket No. PHMSA-08-0291]

RIN 2137–AE33

Action Name: Pipeline Safety: Pipeline and Liquefied Natural Gas Reporting Requirements

Location: Nationwide

Description: The Notice of Proposed Rulemaking seeks to revise the Pipeline Safety Regulations to improve the reliability and utility of data collections from operators of natural gas pipelines, hazardous liquid pipelines, and liquefied natural gas (LNG) facilities.

Category: Proposed Rulemaking

D.1 Environmental Checklist

Project Description

In response to various Government Accountability Office (GAO), the U.S. Department of Transportation Inspector General (DOTIG), the National Transportation Safety Board (NTSB) recommendations, PHMSA and DOT internal assessments, and industry petitions for improved data quality to evaluate the safety performance of the pipeline industry and to aid regulatory decision-making, PHMSA proposes the following regulatory amendments and changes to the 49 CFR to enhance general data and data management improvements for pipelines:

1. Modify the scope of part 191 addressed in 49 CFR Section 191.1, to reflect the changes made in the scope of part 192 of the changes to the definition of gas gathering lines.
2. Change the definition of an “incident” in 49 CFR Section 191.3 to require an operator to report a fire not intentionally set by the operator, or an explosion, and establish a volumetric basis for reporting unexpected or unintentional gas loss.
3. Require operators of hazardous liquid pipelines to submit pipeline information by state on the annual report for hazardous liquid pipelines.

4. Require operators of Liquefied Natural Gas (LNG) facilities to submit incident and annual reports.
5. Create and require participation in a National Pipeline Operator Registry.
6. Require operators to report and file data electronically whenever possible.
7. Merge the natural gas transmission IM Semi-Annual Performance Measures Report with the annual reports.
8. Require operators to use a standard form in submitting Safety-Related Condition Reports.
9. Require additional telephonic notification of accidents.

These revisions will result in both improvements not only to the data but also the analyses PHMSA relies on to make critical safety-related decisions and more properly allocate scarce agency resources based on risk.

The proposed regulatory changes are authorized by PHMSA's statutory authority to carry out pipeline safety duties under 49 U.S.C. 60101 et seq. (the pipeline safety laws), 49 U.S.C. 5101 et seq. (the hazardous material transportation laws), and the Pipeline Inspection, Protection, Enforcement and Safety Act of 2006 (PIPES) (Public Law No.109-468).

Activity Year: 2008 Forward

Part I. Checklist Analysis:		YES	NO	NEED DATA
1.	Is there greater size or scope than generally experienced for a particular category of action?		X	
2.	Is the proposed action located near a site that involves a unique characteristic of the geographic area, such as a historic or cultural resource, park land, wetland, wild and scenic river, ecologically critical area, or property requiring special consideration under 49 U.S.C. 303(c)?		X	
3.	Is there likelihood that the proposed action would be highly controversial on environmental grounds?		X	

Part I. Checklist Analysis:		YES	NO	NEED DATA
4.	Is there a potential for effects on the human environment that are highly uncertain or involve unique or unknown risks?		X	
5.	Will the action cause effects on the human or natural environment that may be precedent setting?		X	
6.	Are the action's impacts likely to create cumulatively significant impacts when considered along with other past, present, and reasonably foreseeable future actions?		X	
7.	Is the proposed action likely to have an impact on a district, site, highway, structure, or object that is listed on or eligible for listing on the National Register of Historic Places, or to cause the loss or destruction of a significant scientific, cultural, or historic resource?		X	
8.	Will the proposed action have a significant effect on species or habitats protected by the Endangered Species Act or other statute?		X	
9.	Is there a likelihood that the proposed action would be inconsistent with or cause a violation of any Federal, State, local, or tribal law or requirement imposed for the protection of the environment?		X	
10.	Is the action likely to have an impact that may be both beneficial and adverse? A significant impact may exist even if it is believed that, on balance, the effect will be beneficial such as likelihood that air emissions exceed de minimis levels or otherwise that a formal Clean Air Act conformity determination is required?		X	
11.	Are there reportable releases of hazardous or toxic substances as specified in 40 CFR Part 302, Designation, Reportable Quantities, and Notification in the vicinity of the proposed action?		X	
12.	Are there reportable releases of petroleum, oils, and lubricants, application of pesticides and herbicides, or where the proposed action results in the requirement to develop or amend a Spill Prevention, Control, or Countermeasures Plan?		X	
13.	Does the proposed action have the potential to degrade already poor environmental conditions? Does the initiation of degrading influence activity, or affect areas not already significantly modified from their natural condition?		X	

Part I. Checklist Analysis:	YES	NO	NEED DATA
14. Does the proposed action have the potential to impact minority and/or low-income populations?		X	
Other environmental considerations not included on checklist.		X	

Part II. Comments or Additional Information Related to Part I:

The following space is provided to discuss the "yes" responses to the above categories (identify by corresponding number), or to provide any supplemental information.

X None _____

Part III. Conclusions:

1. This proposed action is a Categorical Exclusion (CE) and it requires no further environmental review []

Comments:

2. This proposed action is a CE, but it is recommended for further review under one or more of the environmental authorities noted below (list). []

Comments:

3. An EA is recommended for this proposed action. [x]

Comments: The Draft Environmental Assessment follows this section.

4. An EIS is recommended for this proposed action.

Comments:

5. A SEIS is recommended for this proposed action.

Comments:

6. A FEIS is recommended for this proposed action.

Comments:

Date	Preparer/Environmental Project Manager	Title/Position
------	--	----------------

Date	Environmental Reviewer	Title/Position
------	------------------------	----------------

D.2 Environmental Assessment

Background

The National Environmental Policy Act, 42 USC §§ 4321 – 4375, requires that federal agencies analyze proposed actions to determine whether the action will have a significant impact on the human environment. The Council on Environmental Quality (CEQ) regulations order federal agencies to conduct an environmental review considering: (1) the need for the proposed action; (2) alternatives to the proposed action; (3) probable environmental impacts of the proposed action and alternatives; and (4) the agencies and persons consulted during the consideration process. 40 C.F.R. § 1508.9(b). PHMSA has recognized the need to revise several requirements in the Pipeline Safety Regulations relating to data reporting. We developed this assessment to determine the effects of this notice of proposed rulemaking on the environment and whether a more comprehensive environmental impact statement may be required.

Purpose of Action

The Nation's pipelines are a transportation system that enables the safe movement of energy products to industry and consumers. The Pipeline and Hazardous Materials Safety Administration (PHMSA) is the Federal safety authority for the Nation's natural gas and hazardous liquid pipelines. PHMSA is the Federal agency charged with the safe and secure movement of almost one million daily shipments of hazardous materials by all modes of transportation. The Agency also oversees the Nation's pipeline infrastructure, which accounts for 64 percent of the energy commodities consumed in the United States.

The Natural Gas Pipeline Safety Act of 1968 and the Hazardous Liquid Pipeline Safety Act of 1979 require the reporting of incidents on gas transmission and distribution piping. These reporting requirements, as defined in 49 CFR Section 191.15, mandate that operators report any incident that meets certain specific conditions. These requirements were revised in 1984 and again in 2002. Additionally, in 2002, OPS issued a rule that required hazardous liquid pipeline operators to file an annual report similar to the annual report already required for natural gas transmission and distribution pipeline operators.

More recently, PHMSA has recognized the need to revise several rules components relating to data reporting, including those relating to Section 191.3 and 195 subpart B (to modify reporting requirements for operators of hazardous liquid pipelines), Section 191 references to liquefied natural gas (LNG) operators, to create a National Pipelines Owner/Operator Registry, and to facilitate electronic data collection. PHMSA proposes to revise the Federal pipeline safety regulations to address human factors and other components of control room management. The proposed rules would require operators of hazardous liquid (HL) pipelines, natural gas (NG) pipelines, and LNG facilities to amend

their existing operations and maintenance procedures, operator qualification (OQ) programs, and emergency plans to incorporate lessons learned from PHMSA and National Transportation Safety Board (NTSB) studies of pipeline control rooms and pipeline controllers.

The modifications noted in the proposed rule will affect HL and NG pipelines (distribution and transmission), including LNG facilities.

In response to various Government Accountability Office (GAO), the U.S. Department of Transportation Inspector General (DOTIG), the National Transportation Safety Board (NTSB) recommendations, PHMSA and DOT internal assessments, and industry petitions for improved data quality to evaluate the safety performance of the pipeline industry and to aid regulatory decision making, these revisions will result in both improvements to the data and analyses PHMSA relies on to make critical safety-related decisions and better allocate scarce agency resources based on risk.

The proposed regulatory changes are authorized by PHMSA's statutory authority to carry out pipeline safety duties under 49 U.S.C. 60101 et seq. (the pipeline safety laws), 49 U.S.C. 5101 et seq. (the hazardous material transportation laws), and the Pipeline Inspection, Protection, Enforcement and Safety Act of 2006 (PIPES) (Public Law No.109-468).

Description of Action

HL, NG, and LNG pipelines are affected by this proposed rule. PHMSA proposes the following regulatory amendments and changes to the 49 CFR to enhance general data and data management improvements for pipelines:

1. Modify the scope of part 191 addressed in 49 CFR Section 191.1 to reflect the changes made in the scope of part 192 of the changes to the definition of gas gathering lines.
2. Change the definition of an "incident" in 49 CFR Section 191.3 to require an operator to report a fire not intentionally set by the operator, or an explosion, and establish a volumetric basis for reporting unexpected or unintentional gas loss.
3. Require operators of hazardous liquid pipelines to submit pipeline information by state on the annual report for hazardous liquid pipelines.
4. Require operators of Liquefied Natural Gas (LNG) facilities to submit incident and annual reports.
5. Create and require participation in a National Pipeline Operator Registry.
6. Require operators to report and file data electronically whenever possible.
7. Merge the natural gas transmission IM Semi-Annual Performance Measures Report with the annual reports.

8. Require operators to use a standard form in submitting Safety-Related Condition Reports.
9. Require additional telephonic notification of accidents.

Alternatives Considered

PHMSA considered three alternatives to its data collection requirements. After reviewing the three options, PHMSA selected the proposed alternative, Option 3, given the following considerations:

Option 1. No Action

Under this option, PHMSA would continue with the existing requirements for reporting. PHMSA believes that taking no action would not effectively support the agency's safety mission. Given the magnitude of the accident risks and economic losses currently prevailing in the industry, as documented in Section 6.2 of this report, a do-nothing alternative is not an acceptable option. Taking no action would prolong the adverse conditions currently prevailing in the industry, including:

- Inability to mitigate the potential safety hazards arising from inadequate decision making capability, given the lack of needed information about the location of hazardous liquid accidents and LNG facilities.
- Inability to address the safety risks arising from poor quality of data on natural gas pipelines incident reports, and inadequate information on operators contained in the annual reports and OPID.
- Inefficiencies in, and high costs of, processing and correcting error-prone paper-based reports, inadequate information provided the OPID, and failure to meet the DOT strategic goals for E-Government.

This Option is deemed unacceptable, given the array of safety risks and data collection inefficiencies and gaps identified in this NPRM.

Option 2. Require Direct Data Submission to the NPMS

The NPMS is created by PHMSA in cooperation with other Federal and State governmental agencies and the pipeline industry. It consists of geospatial attribute data related to the natural gas transmission and HL pipelines and LNG facilities under PHMSA's jurisdiction. The NPMS is built and maintained using information supplied by firms that operate pipeline and LNG facilities.

To date, pipeline facility data in the NPMS are submitted by pipeline operators on a voluntary basis. Under Option 2, PHMSA will require all operators to adhere to NPMS data standards for all submissions that they provide. Operators will be provided with access to sample maps and submission check-lists, and information on data standards available for online review and downloading.

This option will enable PHMSA to use the NPMS as a tool for decision support, emergency response, inspection planning, community access, and regulatory compliance. PHMSA will also be able to use the risk-based pipeline IM data obtained from the NPMS for rulemaking. Through visualization, geospatial analysis, and the integration of various databases, PHMSA will be able to use the NPMS to help ensure the safe, reliable, and environmentally sound operation of the nation's pipeline transportation system.

This option is not selected as the preferred alternative, partly because the compliance cost to the industry is not known and expected to be excessively high.

Option 3. Different Reporting Requirements for Small Operators

PHMSA considered setting different requirements for large and small operators, basing the requirements on estimated differences in expected costs and benefits. PHMSA is aware that some regulations, rules, and government policies place a disproportionate burden on small firms and entrepreneurs. PHMSA is aware that to promote entrepreneurship, Government agencies have sometimes let small businesses receive special regulatory treatment, such as exemptions from legislation or extended deadlines for compliance.

These considerations were not sufficient to recommend different reporting requirements based on business size. This option was not chosen because PHMSA concluded that allowing disparate reporting would not meet its informational needs. PHMSA believes reporting must provide relevant information that is useful for the decision-making needs of those groups for whom the information is provided. PHMSA determined that not allowing for size differences ensures integrity of the data, while allowing for firm size can dampen the regulation's effectiveness or its primary purpose, and special regulatory treatment may not, in fact, help small businesses. Also PHMSA believes that although there may be a learning curve for small entities, with practice and guidance—which PHMSA is willing to provide—small operators will learn how to comply with the proposed reporting requirements.⁵¹

⁵¹ Although there is not comprehensive research on the effect of regulation on small businesses, this assumption is not without foundation. A RAND study reports that small firms that were initially adversely impacted by the reporting requirements of Sarbanes-Oxley Act (SOX - a Federal law that tightened financial reporting requirements for publicly owned companies). Although more firms, particularly smaller ones, left the public market after enactment, they note that exits may not have been due to SOX; other market forces may have precipitated that exit. There is also evidence that the impact was deemed

Option 4. Adopt Proposed NPRM Changes in Reporting Requirements

PHMSA has chosen Option 4, the proposed rule changes in this NPRM, as the most reasonable of the three options, based on the OMB criteria for regulatory evaluation. This option responds to various Government Accountability Office (GAO), DOT Inspector General (DOT IG), and National Transportation Safety Board

Environmental Consequences

If complied with, almost all of the requirements will lead to better identification of adverse impacts on the physical environment. PHMSA is currently confronted with several data-related gaps. These gaps arise from the poor quality of reported incident data, lack of consistent and risk-based information in annual reports, lack of data on LNG facilities, inconsistencies in operator registry and reporting formats, and errors and inefficiencies in paper filings. In general, systematic data collection will:

- Enhance PHMSA's ability to analyze, synthesize, and utilize the submitted data to support regulatory oversight activities.
- Further PHMSA's safety mission by providing data essential to identify high-risk areas and allocate resources in proportion to risk.
- Help PHMSA with its regulatory oversight and enforcement of compliance with pipeline inspections.

Conclusion and Finding of No Significant Impact (FONSI)

The provisions of this NPRM build in and improve current regulatory requirements related to identification of adverse impacts on the environment. Specifically, this NPRM proposes to (1) modify the scope of part 191 addressed in 49 CFR Section 191.1 to reflect the changes made in the scope of part 192 to the definition of gas gathering lines; 2) Change the definition of an "incident" in 49 CFR Section 191.3 to require an operator to report an explosion or fire not intentionally set by the operator. The proposal also establishes a volumetric basis for reporting unexpected or unintentional gas loss. These reporting changes will more accurately depict the safety performance of gas pipelines over time; 3) Require operators of hazardous liquid pipelines to submit pipeline information by state on the annual report for hazardous liquid pipelines. This data will allow PHMSA to improve its allocation of inspection and other resources through a better understanding of the infrastructure it regulates; 4) Require operators of Liquefied Natural Gas (LNG) facilities to submit incident and annual reports. This data will provide valuable

negligible after 5 quarters of reporting. See http://rand.org/pubs/research_briefs/RB9295/index1.html and http://rand.org/pubs/research_briefs/RB9298/index1.html

infrastructure information to PHMSA, and allow for a more thorough evaluation of the safety performance of LNG facilities; 5) Create and require participation in a National Pipeline and LNG Operator Registry. This data will provide PHMSA with timely updates on significant and potential safety-impacting changes occurring under its purview, and help PHMSA to better monitor and assess operator performance; 6) Require operators to report and file data electronically whenever possible. The electronic submission of data will increase the accuracy and quality of data collected which, in turn, will improve PHMSA's data integration efforts. Electronic submission will also reduce the reporting burden on operators; 7) Merge the natural gas transmission integrity management Semi-Annual Performance Measures Report with the annual reports. Revise the leak cause categories listed in the annual report to include those nine categories listed in ASME B31.8S. This change will significantly reduce the reporting burden on operators by changing the current semi-annual requirement. 8) Require operators to use a standard form in submitting Safety-Related Condition Reports. This will ensure consistency of data submitted across the pipeline industry; 9) Modify hazardous liquid operator telephonic notification of accidents to require operators to have and maintain a procedure to calculate and report a reasonable initial estimate of released product and to provide an additional telephonic report to the National Response Center if significant new information becomes available during the emergency response phase. The net environmental impact of this rule will be positive. Therefore, we believe there are no significant environmental impacts associated with this final rule.

List of Agencies and Persons Consulted

Roger Little, PHMSA, DOT
John Gale, PHMSA, DOT
Warren Prunella, Econometric