Regulatory Assessment
with
Regulatory Flexibility Analysis
and
Paperwork Reduction Act Analysis

Draft Regulatory Evaluation

Notice of Proposed Rulemaking--Pipeline Safety: Polyamide-11 (PA-11) Plastic Pipe Design Pressures

[Docket No. PHMSA-2005-21305]

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1. INTRODUCTION

The Pipeline and Hazardous Materials Safety Administration (PHMSA) is proposing changes to the Federal pipeline safety regulations in 49 CFR Part 192, which cover the transportation of natural gas by pipeline. Specifically, PHMSA is proposing to change the design pressure limits in Sections 192.121 and 192.123 for certain pipes made of Polyaminde-11 (PA-11), a thermoplastic material. The changes would allow new PA-11 pipelines with a nominal pipe size (IPS) of 4 inches or less and a standard dimension ratio[1] (SDR) of 11 to be designed using a design factor of 0.40 (in lieu of the currently stipulated 0.32) in the plastic pipe design formulas in Section 192.121. The design pressure limit in Section 192.123 would be raised from 100 psig to 200 psig for new 4-inch IPS or less, SDR-11, PA-11 pipelines in distribution systems and in class 3 and 4 locations. This would allow design pressures up to those calculated using the formulas in Section 192.121, but not greater than 200 psig. All other design pressure limitations would remain unchanged.

In this report, the benefits and costs of the proposed regulatory changes are examined. Additionally, the report includes the analyses required by the Regulatory Flexibility Act and the Paperwork Reduction Act.

2. BACKGROUND

Thermoplastic pipe is currently used in natural gas transportation in the United States. PA-11 is one of a number of thermoplastics used to make pipe for gas pipeline operations. More commonly used thermoplastics are polyethylene (PE) and polyvinyl chloride (PVC).

For plastic pipe used in the transportation of natural gas, the allowable design pressure is limited by the Federal pipeline safety regulations in two ways. First, the plastic design pressure formula in Section 192.121 limits the allowable pressure to 32 percent of the theoretical design pressure. Second, a design pressure calculated using the design formula in Section 192.121 cannot exceed the design pressure limitations specified in Section 192.123. For plastic pipes produced before July 14, 2004, the design pressure cannot exceed 100 psig in distribution systems and in class 3 and 4 locations. For PE 2406 and PE 3408 thermoplastic pipe produced after July 14, 2004, the design pressure cannot exceed 125 psig for 12-inch IPS or less.

Beginning in the late 1990s, research into the ability of PA-11 pipe to perform successfully and safely at higher pressures than currently allowed by Federal pipeline safety regulations was undertaken by Nicor Technologies (Nicor) for the Gas Research Institute (GRI) and its successor, the Gas Technology Institute (GTI). That research included laboratory studies of the physical, mechanical, and chemical properties of PA-11 pipe materials, as well as laboratory and field evaluations of the "economic feasibility

[1] Standard dimension ratio: The ratio of the average specified outside diameter of a pipe to the minimum specified wall thickness, corresponding to a value from a common numbering system that was derived from the American National Standards Institute preferred number series 10.

for the use of Polyamide 11 (PA-11) gas distribution piping systems at higher operating pressures and temperatures than currently permitted for plastic materials." [2] Final reports on the research performed by Nicor were published by GRI and are available in the docket (see PHMSA-2005-21305-13, -14, and -15).

Subsequent to the completion of the laboratory and field research, a waiver was requested by Nicor Gas for a trial system of PA-11 pipe to be operated in Woodstock, Illinois, at higher pressures than currently allowed. The Illinois Commerce Commission and PHMSA approved the waiver. The following additional PA-11 trial systems were subsequently installed:

- Atmos Energy – Louisiana
- Nashville Gas –Tennessee
- Questar Gas – Utah
- City of Mesa Gas Utilities – Arizona
- Public Service Company of New Mexico – New Mexico

Three of the trial systems were designed using a design factor of 0.40. One system was designed using a hydrostatic design basis of 1600 psig at a temperature of 140º F. All of the trial systems operate between 60 psig and 200 psig, with half operating above 175 psig. A GTI final report summarizing the results of the trial tests, "Utility Participation in PA-11 Evaluation Project," March 2005, was published and is available in the docket (see PHMSA-2005-21305-12).

In October 2004, Arkema, Inc. (Arkema), a manufacturer of PA-11 pipe, submitted two petitions to PHMSA requesting certain revisions of 49 CFR 192.121 and 192.123 relating to new PA-11 pipe. On April 6, 2006, Arkema submitted two amended petitions to PHMSA to replace the original petitions. Those amended petitions addressed public comments received by PHMSA and recommendations made by PHMSA staff. In its petitions, Arkema argued that new PA-11 material would pose less risk to the public at a design factor of 0.40 than older thermoplastic piping materials used with a 0.32 design factor (the current design factor). Furthermore, Arkema argued that allowing an increased design pressure for PA-11 pipe would allow gas pipeline operators to replace some steel pipe, with its risk of corrosion failure, with plastic pipe.

3. STATEMENT OF THE PROBLEM

PHMSA is concerned with maintaining the safety of all pipe installed by gas pipeline operators, including thermoplastic pipe. PHMSA does not, however, want to continue with rules that have been overtaken by technological improvements in the production of pipe. This would appear to be the case for PA-11 pipe, based on (1) Arkema's rulemaking petitions, (2) the research for GRI/GTS relating to the use of PA-11 pipe at

[2] Hitesh V. Patadia and Greg Konwinski, "Final Report II, Evaluation of PA11 Piping for Use in Gas Distribution Systems Operating at High Pressures and Temperatures," Prepared by Nicor Technologies for GRI, GRI report GRI-00/0050, February 2000, p. iv. For a copy of this report, see PHMSA-2005-21305-14.

higher pressures than currently allowed, and (3) the positive public comments relating to Arkema's petitions received by PHMSA in response to a notice published in the *Federal Register* (70 FR 36093) on June 22, 2005. PHMSA wants to ensure the safety of the U.S. pipeline system, but does not want to impede industry behavior if that behavior is fully consistent with PHMSA's safety mandate.

4. RATIONALE FOR REGULATORY ASSESSMENT

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 must be conducted. Furthermore, the Regulatory Flexibility Act of 1980, as amended, requires Federal agencies to conduct a separate analysis of the economic impact of proposed rules on small entities, and the Unfunded Mandates Act also requires economic impact analysis.

In accordance with the above directives, PHMSA has performed a preliminary evaluation of the potential compliance costs of the proposed rule and other feasible regulatory options and identified those benefits that can be expressed in monetary terms. To the extent possible, this is based on the available data and information from a range of sources including PHMSA's Incident Reporting Database and comments received from stakeholders. PHMSA estimates that the impact of implementing the proposed rule will not be greater than $100 million annually. PHMSA does not expect the rule to 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. PHMSA has also determined, as required by the Regulatory Flexibility Act, that the proposed rule will not have a significant economic impact on a substantial number of small entities in the United States. Additionally, it was determined that the rule will not impose annual expenditures of $120.7 million or more on State, local, or tribal governments or the private sector (and thus will not require an Unfunded Mandates Act analysis).

5. ALTERNATIVES CONSIDERED

PHMSA considered the following three alternatives with respect to PA-11 pipe:

- Take no action.
- Implement Arkema's amended rulemaking petitions.
- Implement Arkema's amended rulemaking petitions with modifications.

Each of these alternatives is evaluated below.

5.1 Take No Action

Regulatory analyses typically consider an alternative in which the agency would not take any action. No regulatory changes would be made, no costs would be incurred, and no benefits would result.

PHMSA believes that taking no action would ignore the potential improvement in pipeline safety that allowing the gas pipeline operators to use PA-11 pipe would permit. PA-11 pipe can be used in certain circumstances as a substitute for steel pipe. While their costs are reported to be comparable, steel pipe is subject to corrosion and corrosion leaks, but PA-11 pipe is not. For this reason, the "no action" alternative was not considered further.

5.2 Implement Arkema's amended rulemaking petitions

On April 6, 2006, Arkema submitted two amended petitions to PHMSA to replace the original petitions. Those new petitions addressed public comments received by PHMSA and recommendations made by PHMSA's staff. In the executive summary of the first, Arkema requests an increase in the design factor in Section 192.121 for new PA-11 piping from 0.32 to 0.40 for "all pipe diameters" with two conditions: (1) the minimum wall thickness shall be SDR-11 and (2) the rapid crack propagation (RCP) characteristics at each new larger pipe diameter, or new increased wall thickness for an already tested diameter, shall be measured in accordance with accepted industry test standard methods. The language proposed for the new rule, however, is inconsistent with the executive summary. Arkema's proposed rule only addresses new PA-11 pipe with wall thickness SDR-11 and does not address RCP. The proposed rule in Arkema's second petition also does not address RCP, although it is covered in the discussion leading up to the rule. Furthermore, in the second petition, Arkema talks of limiting the PA-11 covered by the proposed change to 4-inch IPS and smaller, but the wording of the proposed rule does not include any wording regarding pipe diameters. Because of these flaws in Arkema's amended petitions, this alternative was not considered viable and no further consideration was given to it.

5.3 Implement Arkema's amended rulemaking petitions with modifications

Finally, PHMSA considered implementing Arkema's amended rulemaking petitions with modifications. This modified alternative would not include any RCP provisions. Furthermore, it would focus exclusively on new PA-11 pipe that is SDR-11. Additionally, based on comments received from the Illinois Commerce Commission, the modified alternative would include a requirement that pipes with design pressures above 100 psig be buried with a warning tape or other suitable device to alert excavators of the presence of a high pressure gas line prior to reaching the burial depth of the pipeline. This modification of Arkema's amended rulemaking petitions would allow new PA-11 pipe to be used without compromising safety where (1) the design pressure does not exceed 200 psig, (2) the pipe is 4-inch IPS, (3) the pipe has a standard dimension ratio of

SDR-11, and (4) a warning tape or other suitable device is present to warn excavators of a buried high-pressure gas line. This alternative was selected by PHMSA.

6. ECONOMIC ANALYSIS

PHMSA proposes to revise the Federal pipeline safety regulations in 49 CFR Part 192 to allow certain plastic pipelines made from new PA-11 thermoplastic to be designed using a higher design factor. PHMSA also proposes to raise the design pressure limit for the same PA-11 pipelines to allow them to operate up to their calculated design pressure, but not greater than 200 psig. Design pressure calculations and limitations for all other plastic pipes would remain unchanged.

In the remainder of this section, the impacted industry is identified and the affected mileage is estimated, and then the benefits and costs of the proposed rule are considered.

6.1 Impacted Industry

The proposed rule will apply to all operators of gas distribution systems, as well as to the operators of gas transmission and gathering lines in Class 3 and 4 locations. PHMSA assumes that all operators will eventually replace old pipe or add new pipe to their systems.

PHMSA estimates that approximately 1,450 gas distribution systems would be affected by the proposed rule. Those systems operate approximately 1.2 million miles of gas distribution mains, and connect to approximately 63 million services. PHMSA also estimates that approximately 1,450 gas transmission and gathering systems would be affected by the proposed rule. Those systems have approximately 35 thousand miles of pipeline in Class 3 locations and approximately 1,400 miles of pipeline in Class 4 locations.[3]

Not every transmission pipeline operator has pipeline in Class 3 or 4 locations, it should be noted. In 2005, 417 transmission systems and 155 gas gathering systems had pipeline in Class 3 locations, while 69 transmission systems and 9 gathering systems had pipeline in Class 4 locations.[4] For this analysis, every transmission pipeline operator is assumed to have the potential to have pipeline in Class 3 or 4 locations. That is, every transmission pipeline operator is assumed to have either pipeline in Class 3 or 4 locations currently, or the potential to expand its pipeline system into Class 3 or 4 locations.

6.2 Benefits

[3] These estimates are based on information provided to PHMSA in the gas distribution and transmission system annual reports submitted for 2005. In 2005, gas transmission systems had 32,737 miles of pipeline in Class 3 locations and 1,391 miles of pipeline in Class 4 locations. Gas gathering systems had 2,477 miles of pipeline in Class 3 locations and 12 miles of pipeline in Class 4 locations.

[4] Gas transmission system annual reports for 2005 submitted by operators to PHMSA.

The proposed rule does not require operators of gas pipelines to use PA-11 pipe in their pipeline systems. Rather, it provides operators with the option of using PA-11 pipe in certain circumstances. The choice of whether to use PA-11 pipe, therefore, is left to the operators.

PHMSA expects the most significant benefits of PA-11 pipe to result from the following:

- The cathodic protection of steel pipe that is not needed if PA-11 pipe is used in lieu of that steel pipe.
- The corrosion leaks avoided if PA-11 pipe is used in lieu of metal pipe.
- The installation and operation and maintenance (O&M) costs of the metal and plastic pipe that PA-11 pipe is used in lieu of.

To quantify these benefits, at a minimum, the following is needed:

- The expected demand for PA-11 pipe.
- The costs of cathodic protection.
- The net number of leaks avoided if PA-11 pipe is used in lieu of some other type.
- The installation and O&M costs of the pipe that PA-11 pipe is used in lieu of.

Industry sources argue that the use of PA-11 pipe

> …at elevated pressures greater than 100 psig would lead to reductions in total installation and maintenance costs for the industry and the public being served.[5]

Specifically, PA-11 pipe could be used in certain circumstances as a replacement or alternative to steel pipe in some higher-pressure pipelines (i.e., pipelines operating at greater than 100 psig and less than or equal to 200 psig). One of the advantages of PA-11 pipe in this situation is that it does not require the cathodic protection that the steel pipe requires.[6] Unlike steel pipe, thermoplastic pipe is not subject to corrosion leaks.

It is unlikely that significant quantities of steel pipe would be ripped up and replaced with PA-11 should the proposed rule be implemented. A number of operators, however, do have programs underway to replace their steel pipe.[7] PA-11 pipe might be used for some of this replacement, should the proposed rule be implemented. Additionally, the gas pipeline industry is constantly expanding and replacing its pipelines.[8] Should the proposed rule be implemented, PA-11 pipe might be used for some of this, as well. This would be in lieu of some other type of thermoplastic or metallic pipe, of course.

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[5] Hitesh V. Patadia and Greg Konwinski, p. 29.
[6] Hitesh V. Patadia and Greg Konwinski, pp. 39-40.
[7] For estimates of the annual mileage of bare steel and cast iron mains and services that are being replaced annually by gas distribution systems, see "Draft Regulatory Evaluation, Notice of Proposed Rulemaking--Pipeline Safety: Integrity Management Program for Gas Distribution Pipelines," Docket PHMSA-04-19854.
[8] Hitesh V. Patadia and Greg Konwinski, p. 29.

The demand for PA-11 pipe that would be experienced if the proposed rule were implemented is unknown. The decision by gas pipeline operators to install PA-11 pipe would be a standard business decision based, presumably, on (1) the need to install new pipe or replace old pipe and (2) the costs and benefits of PA-11 pipe and its alternatives.

Nicor estimates that gas distribution system operators might install between 156.92 and 681.17 miles of 2-inch IPS SDR-11 PA-11 pipe in the first 11 years after introduction of the pipe.[9] Those estimates are not based on based on a comparison of the costs and benefits of PA-11 pipe versus its alternatives, however. No such comparisons are readily available. Just how realistic Nicor's estimates are is an open question.

Additionally, it is unknown how much PA-11 pipe might be used to replace steel pipe, how much might be used in lieu of steel pipe, how much might be used to replace other types of plastic or metal pipe, and how much would be used in lieu of other types of plastic or metal pipe.

While a number of sources indicate that PA-11 pipe might be used in lieu of or to replace steel pipe, no one has indicated how much might be saved if steel pipe, which requires corrosion control measures, were to be replaced by PA-11 pipe. Nicor appears to have considered developing an estimate of the cost of cathodic protection. With respect to that cost, Nicor noted that

> Because these costs [i.e., contributors to the overall costs of cathodic protection] vary significantly from company to company, it is very difficult to arrive at an overall installed cost per foot basis. Furthermore, subtle differences among organizations in classifying 'maintenance dollars' and 'capital investment dollars' complicate the analysis.[10]

Nicor developed no estimate for the cost of cathodic protection.

Some information on the installed cost of other pipe is available. For instance, it is reported that the full installed cost of steel pipe ranged between $14 and $41 per foot (in 2001-2002 dollars).[11] Information on the installed cost for the other types of pipe that PA-11 pipe might be used in lieu of is not readily available, however. Neither are the O&M costs of the other pipe that PA-11 might be used in lieu of.

No one has estimated how many leaks might be avoided if steel pipe were to be replaced by PA-11 pipe. Leaks from steel pipe could be estimated using information provided in

[9] Hitesh V. Patadia and Greg Konwinski, pp. 34-37.
[10] Hitesh V. Patadia and Greg Konwinski, pp. 39-40.
[11] Jim Mason, Dennis Jarnecke, Bobby Garner, Troy Sorensen, and Jon Jones, "Coiled Polyamide-11 High Pressure Gas Pipe Costs Less to Install and Operate Than Steel Stick Pipe," http://www.arkema-inc.com/pdf/techpoly/Coiled_RILSAN_Polyamide-11_Pipe_Paper-May_2005.pdf.

the annual reports to PHMSA, of course. What is lacking is comparable information on PA-11 pipe.

As a consequence of a lack of readily available information, quantified benefits for the proposed rule cannot be estimated. Although they cannot be quantified, benefits attributable to a reduction in the need for corrosion control measures on steel pipe might result from implementation of the proposed rule. Furthermore, the number of leaks per mile due to corrosion on steel pipe might decline if the proposed rule were to be implemented and PA-11 pipe replaced some steel pipe. It has been reported, however, that historically the incidence of leaks per mile in plastic pipe has been comparable to that of metal pipe.[12] This particular benefit, therefore, might not be significant. Finally, if PA-11 pipe is used in lieu of pipe made of another thermoplastic or a metal, such as steel, the full cost of installing that other pipe would be a cost savings accruing to pipeline operators. Additionally, the O&M costs associated with the other pipe would also be a cost savings accruing to pipeline operators. Depending on the amount of pipe replaced with PA-11, the cost savings resulting from the foregone installation and O&M expenses of other types of pipe could be significant. It should be recognized, however, that they will be offset, at least in part, by the installation and O&M costs associated with PA-11, which are discussed in the next subsection of this report.

6.3 Costs

The proposed rule does not require operators to use PA-11 pipe in their pipeline systems. Rather, it provides operators with the option of using PA-11 pipe in certain circumstances. Consequently, the proposed rule will cost operators only if they choose to use PA-11 pipe in the new ways the proposed rule allows.

The costs of PA-11 pipe include (1) the costs of installation and (2) the costs of operation and maintenance. The costs of installation include (1) the cost of the pipe, (2) excavation, (3) burial, (4) inspection, and (5) other activities relating to gas pipeline construction.[13]

Based on information from the PA-11 trial systems installed by Nashville Gas, Questar Gas, and the Public Service Company of New Mexico, it is reported that the total cost of installation for coiled 2-inch IPS SDR-11 PA-11 pipe was in the $11 to $17 per foot range. The cost of the new PA-11 pipe itself was reported to be $10 per foot for Nashville and Questar, and $8 per foot for the Public Service Company of New Mexico.[14] No estimates are readily available for the installed cost of new 4-inch IPS pipe. Also, no estimates are readily available for the installed cost of PA-11 pipe when it is installed as sticks, rather than from coils. The installed cost of PA-11 pipe sticks

[12] Cost of Corrosion, Appendix J - Gas Distribution by Neil G. Thompson, http://www.corrosioncost.com/pdf/gas.pdf, p. J6.
[13] Jim Mason, et al.
[14] Jim Mason, et al. No date was given for the dollar figures, but they appear to be relevant for 2003-2004.

should be higher than the installed cost of PA-11 pipe from coils because of the labor and time needed to butt fuse the sticks.[15]

No information is readily available on the O&M cost of PA-11 pipe. Industry sources imply that the O&M costs PA-11 pipe will not be comparable to that of PE pipe. Rather, because of higher operating pressures, PA-11 pipe O&M costs will be comparable to those associated with steel pipe.[16] No information on the O&M costs of steel pipe is readily available.

The total costs of the proposed rule for any given year would be the costs of installation incurred during the year multiplied by the number of miles of PA-11 pipe installed during that year plus the costs of O&M incurred during the year multiplied by the number of miles of PA-11 pipe previously installed as a consequence of the proposed rule.

8. SUMMARY AND CONCLUSIONS

PHMSA proposes to revise the Federal pipeline safety regulations in 49 CFR Part 192 to (1) allow certain plastic pipelines made from new PA-11 thermoplastic to be designed using a higher design factor and (2) raise the design pressure limit for the same PA-11 pipelines to allow them to operate up to their calculated design pressure, but not greater than 200 psig. Design pressure calculations and limitations for all other plastic pipes would remain not be changed.

Quantified benefits could not be calculated for the proposed rule. Non-quantified benefits of the proposed rule include (1) a reduction in the need for cathodic protection when PA-11 pipe replaces steel pipe, (2) a reduction in the number of leaks due to corrosion when PA-11 pipe replaces steel pipe, and (3) the installation and O&M costs of the pipe that PA-11 pipe would be used in lieu of. Historically, plastic pipe has generally experienced nearly the same leak rate as steel pipe, so the second potential benefit may prove to be extremely limited, if it exists at all.

The costs of the propose rule include (1) the costs of PA-11 pipe installation and (2) the costs of PA-11 pipe operations and maintenance. Installation cost estimates were only available for 2-inch IPS SDR-11 PA-11 pipe from coils. Those estimates, based on the experience of the PA-11 trial systems installed by Nashville Gas, Questar Gas, and the Public Service Company of New Mexico, are $11 to $17 per foot (presumably in 2003-2004 dollars). No information was available for the installed cost of (1) 2-inch IPS SDR-11 PA-11 pipe from sticks or (2) 4-inch IPS SDR-11 PA-11 pipe. Furthermore, no information was available for the operation and maintenance costs of PA-11 pipe.

The installation of PA-11 is not mandated; it is optional. Operators need not install PA-11 pipe if it does not make good business sense to do so. PHMSA expects operators to install PA-11 pipe only if installation makes good business sense. That is, PHMSA expects operators to install PA-11 pipe, rather than some other type of pipe, only if it is

[15] Jim Mason, et al.
[16] Hitesh V. Patadia and Greg Konwinski, p. 31.

the most cost-effective option. Consequently, PHMSA anticipates that the benefits of the proposed rule will equal or exceed its costs.

Regulatory Flexibility Analysis
Polyamide-11 (PA-11) Plastic Pipe Design Pressures

The Regulatory Flexibility Act (5 U.S.C. 601 et seq.) requires an agency to review regulations to assess their impact on small entities unless the agency determines that a rule is not expected to have a significant impact on a substantial number of small entities.

Need for the Notice of Proposed Rulemaking: PHMSA is concerned with maintaining the safety of all pipe installed by gas pipeline operators, including thermoplastic pipe. PHMSA does not, however, want to continue with rules that have been overtaken by technological improvements in the production of pipe. Based on (1) rulemaking petitions submitted by Arkema, Inc., a manufacturer of PA-11 pipe, (2) research for GRI/GTS relating to the use of PA-11 pipe at higher pressures than currently allowed, and (3) positive public comments relating to Arkema's petitions received by PHMSA in response to a notice published in the *Federal Register* (70 FR 36093) on June 22, 2005, this would appear to be the case with PA-11 pipe. PHMSA wants to ensure the safety of the U.S. pipeline system, but does not want to impede industry behavior if that behavior is fully consistent with PHMSA's safety mandate.

Description of Actions: PHMSA proposes to revise the Federal pipeline safety regulations in 49 CFR Part 192 to allow certain plastic pipelines made from new PA-11 thermoplastic to be designed using a higher design factor. PHMSA also proposes to raise the design pressure limit for the same PA-11 pipelines to allow them to operate up to their calculated design pressure, but not greater than 200 psig. Design pressure calculations and limitations for all other plastic pipes would remain unchanged.

Identification of potentially affected small entities: The proposed rule would affect operators of (1) local gas distribution utilities and (2) gas transmission and gathering pipelines. Based on submissions of annual reports, PHMSA estimates that approximately 1,450 local gas distribution utilities and 1,450 gas transmission and gathering systems potentially would be affected by the proposed rule. The size distribution of these operators is unknown and must be estimated.

The impacted gas distribution operators all belong to North American Industry Classification System (NAICS) 221210, Natural Gas Distribution. In accordance with size standards published by the Small Business Administration (SBA), a business with 500 or fewer employees is considered a small entity in this NAICS.[17]

Based on information from Dun & Bradstreet for August 2006 on firms in NAICS 221210, PHMSA estimates that 78% of the local gas distribution utilities have 500 or fewer employees. Thus, PHMSA estimates that 1,131 (= 1,450 x 78%) of the local gas distribution utilities affected by the proposed rule will have 500 or fewer employees.

[17] http://www.sba.gov/size/sizetable2002.pdf.

The impacted gas transmission and gathering systems all belong to NAICS 486210, Pipeline Transportation of Natural Gas. In accordance with the size standards published by the SBA, a business with $6.5 million or less in annual revenue is considered a small business in this NAICS.

Based on information from Dun & Bradstreet for August 2006 on firms in NAICS 486210, PHMSA estimates that 33% of the gas transmission and gathering systems have $6.5 million or less in revenue. Thus, PHMSA estimates that 479 (= 1,450 x 33%) of the gas transmission and gathering systems affected by the proposed rule will have $6.5 million or less in annual revenue.

The proposed rule mandates no action by gas pipeline operators. Rather, it provides those operators with the option of using PA-11 pipe in certain circumstances, should that appear to be a solid and cost-effective business decision to the operators. Consequently, it imposes no economic burden on the affected gas pipeline operators, large or small.

Related Federal rules and regulations: There are no related rules or regulations issued by other departments or agencies of the Federal Government.

Alternate proposals for small businesses: The Regulatory Flexibility Act directs agencies to establish exceptions and differing compliance standards for small businesses, where it is possible to do so and still meet the objectives of applicable regulatory statutes.

The proposed rule mandates no action by the gas pipeline operators. Consequently, alternative proposals for small business are unnecessary.

Conclusion: It can be concluded that this proposed rule applies to a substantial number of small entities. No small entities, however, would experience a significant adverse economic impact as a result of the proposed rule.

Paperwork Reduction Act Analysis
Polyamide-11 (PA-11) Plastic Pipe Design Pressures

PHMSA proposes to revise the Federal pipeline safety regulations in 49 CFR Part 192 to allow certain plastic pipelines made from new PA-11 thermoplastic to be designed using a higher design factor. PHMSA also proposes to raise the design pressure limit for the same PA-11 pipelines to allow them to operate up to their calculated design pressure, but not greater than 200 psig. Design pressure calculations and limitations for all other plastic pipes would remain unchanged.

This proposed rule would not require pipeline operators to keep any new information or to undertake any paperwork-related activities over and above what those operators are currently responsible for performing. Consequently, it would impose no information collection burden on the affected gas pipeline operators.