DEPARTMENT OF TRANSPORTATION  

Pipeline and Hazardous Materials Safety Administration  

49 CFR Part 192  

[RIN 2137–AE26  


AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA); DOT.  

ACTION: Final rule.  

SUMMARY: This final rule amends the design factor and design pressure limits for natural gas pipelines made from new Polyamide–11 (PA–11) thermoplastic pipe. Together, these two changes in the regulations allow pipeline operators to operate certain pipelines constructed of new PA–11 pipe at higher operating pressures than is currently allowed for other plastic pipe materials.  

DATES: This final rule takes effect January 23, 2009.  

FOR FURTHER INFORMATION CONTACT: Richard Sanders at (405) 954–7214, or by e-mail at Richard.Sanders@dot.gov.  

SUPPLEMENTARY INFORMATION:  

Background  

PHMSA published a Notice of Proposed Rulemaking (NPRM) (73 FR 1307; January 8, 2008) proposing to increase the design factor and corresponding operating pressure limitations for natural gas pipelines made from new Polyamide–11 (PA–11) thermoplastic pipe. PHMSA initiated this rulemaking in response to several petitions submitted by Arkema, Inc. (Arkema), a manufacturer of PA–11 pipe. In October 2004, Arkema submitted two petitions to PHMSA requesting we revise 49 CFR 192.121 and 192.123. The first petition requested an increase in the design factor from 0.32 to 0.40 in the plastic pipe design formula in § 192.121 for new PA–11 plastic pipe. The second petition requested an increase in the design pressure limitation in § 192.123 from 100 psig (689 kPa) to 200 psig (1379 kPa) for new 2-inch IPS PA–11 plastic pipe. The design factor and design pressure limitations for all other plastic pipe would remain unchanged.  

On June 22, 2005, PHMSA published a notice in the Federal Register (70 FR 36093) seeking comments on the Arkema petitions. Following public comments and recommendations from PHMSA staff, on April 6, 2006, Arkema submitted amended petitions proposing various additional requirements and safety controls on the use of PA–11 pipe. Arkema again proposed an increase in the design factor in § 192.121 from 0.32 to 0.40 for new PA–11 pipe, but proposed two new conditions: (1) The minimum wall thickness for pipe of a given diameter must be SDR 2–11 or thicker; and (2) the rapid crack propagation (RCP) characteristics of each new pipe design involving a new diameter or thicker wall must be measured using accepted industry standard test methods.  

Likewise, Arkema proposed that we amend § 192.123 to allow the use of PA–11 pipe at a maximum design pressure of up to 200 psig (1379 kPa) for SDR–11 pipe, but broadened its request to include pipe at diameters of up to 4-inch IPS. This request was based on the availability of complete PA–11 piping systems; results from a three-year research program by the Gas Technology Institute; and the successful testing of exhumed samples of PA–11 pipe that had been installed and operated under Federal and State waivers. Finally, Arkema supported a commenter’s recommendation to reduce the risk of excavation-related damage by requiring that PA–11 pipe be buried with warning tapes or other devices designed to alert excavators to the presence of a high pressure gas line.  

PHMSA is adopting the amendments as proposed in the NPRM with four exceptions:  

(1) We are adding the term “copper tubing size (CTS)” to clarify that pipeline operators may use copper tube size pipe as well as iron pipe size pipe.  

(2) We are adding the term “thicker pipe wall” to clarify that “SDR–11 or greater” means pipe with thicker pipe wall.  

(3) We are clarifying that the use of arithmetic interpolation to determine a design pressure rating at a specified temperature (i.e., “S” in the plastic pipe design formula in § 192.121) will not be allowed for PA–11 pipe. Arkema did not request that we permit such an

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1 IPS means Iron Pipe Size, while CTS means copper tube size. These are recognized pipe size standards that refer to a nominal pipe diameter, not to the actual inside diameter (ID) or outside diameter (OD) of a pipe. IPS is generally used for pipe sizes 2 inches or greater; CTS is generally used for pipe sizes 2 inches or less.  

2 SDR (standard dimension ratio) means the ratio of a pipe’s average specified outside diameter to the minimum specified wall thickness of the pipe. For any given pipe diameter, the higher the SDR, the thinner the pipe wall. Typical SDRs are specified in industry standards developed by the American National Standards Institute (ANSI).
interpolation for PA–11, and nothing in the record would support it.

(4) Finally, for reasons set forth in the following sections, we are not requiring that pipe with design pressures above 100 psig (689 kPa) be buried with a warning tape or other device designed to warn an excavator of the presence of a high pressure gas line.

This final rule amends our existing plastic pipe design formula in §192.121 to cover pipelines made from new 4-

\text{inch IPS (or CTS) or less, SDR–11 or greater (i.e., thicker pipe wall) PA–11 pipe with a design factor of up to 0.40 and increases the design pressure limitation in §192.123 to 200 psig (1379 kPa) for these same pipelines. The design factor for all other plastic pipes remains as prescribed in the existing regulations. These rule changes are effective January 23, 2009.}

\textbf{Disposition of Public Comments}

On June 22, 2005, PHMSA published a notice in the Federal Register (70 FR 36093) seeking comments on the Arkema petitions. We received comments from two operators of PA–11 trial systems, one local gas distribution company, the Gas Piping Technology Committee, the American Gas Association (AGA), the Illinois Commerce Commission, two plastic pipe fitting manufacturers and a plastics pipe consultant. These comments are discussed in full in the NPRM for this rule published in the Federal Register on January 8, 2008.

PHMSA received 13 sets of comments on the NPRM from 10 commenters, including industry trade groups, natural gas distribution utility companies, plastic pipe consultants, and the original petitioner. Of the 10 commenters, all but one expressed support for the proposed increases in design pressure limit and design factor. Of the nine commenters in support of the proposed amendments, four supported increases in the design factor and design pressure limit but opposed the proposed amendment to §192.123(f)(4) regarding the mandatory burial of a warning tape. The single commenter opposed to all of the proposed amendments sent two separate comments, one of which does not pertain to the rulemaking in question.

The supporting comments cited laboratory tests results from the Gas Research Institute (formerly the Gas Technology Institute) and performance during field tests under waivers as evidence that PA–11 pipe can be operated at the proposed limits without compromising safety. Two of the supporting commenters noted they were currently operating PA–11 pipelines under waivers. Supporting commenters also cited cost advantages, including efficiencies in installation and maintenance, in using PA–11 material rather than metal for gas distribution pipelines.

Four commenters that otherwise supported the proposed changes in design factor and design pressure limits objected to the proposal to require buried warning tapes or other devices. In general, opposing comments characterized the requirements as unnecessary, impractical, or overly burdensome. Commenters cited the technical difficulty of burying the warning tape and expressed concern that confusion over the rule’s application could undermine the effectiveness of any new warning. These commenters contended that the amendment would cause confusion because the regulation would apply to PA–11 pipe operating above 100 psig (689 kPa) but not to other plastic and metallic pipe operating above 100 psig (689 kPa). Others urged the strengthening of existing requirements for damage prevention programs and excavator awareness training as a better alternative for reducing excavation-related risk. One commenter also suggested the proposed warning tape requirement should be included in §192.321(e) “Installation of Plastic Pipe,” and that it should not apply to a pipeline installed within a casing or a sleeve. Because we are not adopting the proposed requirement in any form, we need not consider whether the operative text would better fit in a different section of the regulations. One commenter, Sempra Energy Utilities (Sempra), representing Southern California Gas Company and San Diego Gas and Electric, opposed all of the proposed amendments. Sempra cited four reasons for its opposition, as follows:

1. **Discrepancies between Resin Formulations, Hydrostatic Design Basis (HDB) and Field Performance Data.** During the field trials Arkema discovered its new formula for the PA–11 pipe, which was designed to reduce heavy metals in its products and waste streams, caused an unexpected oxidation problem. Once Arkema identified the cause of the problem, it eliminated the problematic element, moving the formula closer to an earlier one with a proven track record. Arkema also performed analyses and studies, including tests of the Nicor Gas pipeline operated under a waiver, to determine if the same plastic “accelerated degradation mechanism” was at work in the newest formula and determined it was not.

Sempra argued this new information should require additional testing to establish the HDB of the material. Arkema responded that it received the PPI TR4 HDB [Plastics Pipe Institute, Technical Report, TR–4, Recommended Hydrostatic Strengths and Design Stresses for Thermoplastic Pipe and Fittings Compounds] listing after due consideration of the data by the Hydrostatic Stress Board and that this data included HDB equivalency testing at an independent International Organization for Standardization certified laboratory. Two respected plastic pipe consultants also responded that HDB testing is not intended to find issues such as the oxidation problem and that changes to the pigment formulation have no effect on the HDB as determined by ASTM D2837 [ASTM International Standard D2837, Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products.] PHMSA is satisfied that Arkema has resolved the oxidation problem and that the HDB of the PA–11 material has been properly established.

2. **Advanced Approach for Determining Design Factor for Plastic Materials.** Sempra stated that there is research underway to develop a technically sound approach to increase the design factor from 0.32 to 0.40 for PE [polyethylene] pipes without adversely compromising system integrity and overall safety. Sempra stated that a material must demonstrate a safe balance between its long-term strength and long-term in-service stresses acting on the piping system Sempra added that testing must be performed to simulate additional stresses acting on the pipe (such as point loads, excessive bending strain, compaction, earth loading, etc.) to validate safe operations at increased pressures and that no test or field trial data has been provided to demonstrate that this is true for PA–11. Arkema responded that combined loading tests are not relevant to PA–11 because extensive laboratory testing intended to identify slow crack growth (SCG) has shown that PA–11 is highly resistant to SCG. Arkema added that SCG has never been observed in PA–11. A respected plastic pipe consultant also responded that the testing suggested by Sempra is appropriate for PE material but not for PA–11 materials because PA–11 does not fail by SCG. Based on the extensive laboratory research, field research and the field trial experience, and the opinions of plastic pipe experts, PHMSA accepts that PA–11 is not likely to fail due to SCG and that additional
combined leak testing is not warranted.

3. Clarification of Regulatory Requirements at Increased Operating Pressures

Sempra suggested that PHMSA provide additional clarification regarding the integrity management (IM) requirements that would apply to a PA–11 pipeline at the proposed higher operating pressures and stresses. PHMSA does not agree that such a clarification is necessary. The IM regulations in 49 CFR part 192, subpart O are not based on the type of plastic material. While PHMSA acknowledges that operators of PA–11 pipelines must address specific IM requirements, the same can be said of PE and other plastic pipelines. We expect pipeline operators to consider all relevant risk factors, including pipe materials and operating pressures, in developing and implementing their IM plans. Among other resources, PHMSA’s IM Web site and frequently asked questions (FAQ) are available to assist operators in addressing PA–11-specific IM issues that may arise. We also offer written interpretations of the code to help clarify specific issues. In any case, Sempra or any other interested person could petition PHMSA for a change of the IM regulations in accordance with 49 CFR 190.331, if it believes the IM regulations are insufficient to address PA–11 pipelines. On the current record, no such showing has been offered.

4. Possible Misapplication of Stresses to HDB Ratio

Sempra pointed out an incorrect mathematical correlation in the NPRM and believed that it undermined the rational for the rulemaking. We acknowledge the error but do not agree that it undermines the rationale for this rulemaking. The simplified correlation was not offered or relied upon by Arkema. PHMSA did not intend this correlation to establish the maximum pressure limitation for plastic pipe as Sempra asserts, and our analysis in this rulemaking does not depend on the comparison. The final rule is amply supported by the data and analysis offered by the petitioner and other commenters and by PHMSA’s technical review, and is reinforced by the overwhelming support for this rule in the plastic pipe industry.

Technical Advisory Committee

The proposal adopted in this final rule was presented and approved by PHMSA’s Technical Pipeline Safety Standards Committee (TPSSC) at its June 10, 2008 public meeting in Washington, DC. At this meeting, PHMSA briefed the TPSSC on the proposed PA–11 rule and explained the extensive laboratory and field testing that the manufacturer had undertaken. Moreover, PHMSA discussed the NPRM comments, including the opposition to the proposed requirement to bury a warning tape. Several of the TPSSC members expressed support for the proposed rule without the requirement for the warning tape. The committee members expressed the same concerns with warning tape as the public commenters, particularly with respect to the possible confusion such a requirement could cause excavators because the regulation would only apply to PA–11 pipe operating above 110 psig (689 kPa). After careful consideration, the TPSSC voted unanimously to find the NPRM and supporting regulatory evaluation, with the elimination of the proposed warning tape requirement, technically feasible, reasonable, practicable, and cost-effective. A transcript of the meeting is available in Docket ID PHMSA–2005–21305.

Regulatory Analyses and Notices

Executive Order 12866 and DOT Policies and Procedures

This final rule is not a significant regulatory action under section 3(f) of Executive Order 12866 (58 FR 51735) and, therefore, was not reviewed by the Office of Management and Budget. The final rule is also not significant under the Regulatory Policies and Procedures of the Department of Transportation (44 FR 11034).

Installing PA–11 is not mandated; it is optional. PHMSA believes operators may choose to install PA–11 pipe, rather than some other type of pipe, only if it is the most cost-effective alternative available. Consequently, PHMSA anticipates that the benefits of this final rule will equal or exceed its costs. Any gas transmission operators with (or installing) pipelines in class 3 or 4 locations could potentially be affected by this final rule. Furthermore, all gas distribution operators could potentially be affected by this final rule. In total, PHMSA estimates that the rule could potentially affect 1,450 gas transmission and gas gathering operators and 1,450 gas distribution system operators.

Regulatory Flexibility Act

Under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.), PHMSA must consider whether this rulemaking action would have a significant economic impact on a substantial number of small entities. PHMSA estimates that this final rule could potentially affect as many as 479 transmission system and gas gathering operators and 1,131 gas distribution system operators that qualify as small businesses under the criteria established for these industries by the Small Business Administration.

The final rule mandates no action by gas pipeline operators. Rather, it provides operators with an option to use PA–11 pipe in certain pipeline systems. We expect operators to select among authorized pipe materials based on economic, operational, or other considerations. Consequently, the economic burden of the final rule on these potentially affected gas pipeline operators is expected to be minimal. Therefore, based on this information showing that any economic impact of this rule on small entities will be minimal, I certify under section 605 of the Regulatory Flexibility Act that this regulation will not have a significant impact on a substantial number of small entities.

Executive Order 13175

PHMSA has analyzed this final rule according to the principles and criteria in Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments.” Because this final rule will not significantly or uniquely affect the communities of the Indian tribal governments or impose substantial direct compliance costs, the funding and consultation requirements of Executive Order 13175 do not apply.

Paperwork Reduction Act

This final rule does not impose any new information collection requirements.

Unfunded Mandates Reform Act of 1995

This final rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of $100 million, adjusted for inflation, or more in any one year to either State, local, or tribal governments, in the aggregate, or to the private sector, and is the least burdensome alternative that achieves the objective of the proposed rulemaking.

National Environmental Policy Act

PHMSA has analyzed this final rule for purposes of the National Environmental Policy Act (42 U.S.C. 4321 et seq.) and has determined the final rule may produce minor beneficial impacts on the quality of the human environment due primarily to a potential reduction in corrosion-related leaks if PA–11 pipe is used instead of steel pipe. We have determined there will be no significant environmental impacts associated with this final rule.
Executive Order 13132

PHMSA has analyzed this final rule according to Executive Order 13132 ("Federalism"). The final rule does not have a substantial direct effect on the States, the relationship between the national government and the States, or the distribution of power and responsibilities among the various levels of government. This final rule does not impose substantial direct compliance costs on State and local governments. This final rule would not preempt state law for intrastate pipelines. Therefore, the consultation and funding requirements of Executive Order 13132 do not apply.

Executive Order 13211

Transporting gas impacts the nation’s available energy supply. However, this final rule is not a "significant energy action" under Executive Order 13211. It is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Further, the Administrator of the Office of Information and Regulatory Affairs has not identified this rulemaking as a significant energy action.

List of Subjects in 49 CFR Part 192

Gas, Natural gas, Pipelines, Pipeline safety.

§ 192.121 Design of plastic pipe.

Subject to the limitations of § 192.123, the design pressure for plastic pipe is determined by either of the following formulas:

\[ P = \frac{2S}{(D - t)} \]

\[ P = \frac{2S}{(SDR - 1)} \]

Where:

- \( P \) = Design pressure, gauge, psig (kPa).
- \( S \) = For thermoplastic pipe, the HDB is determined in accordance with the listed specification at a temperature equal to 73°F (23°C), 100 °F (38 °C), 120 °F (49 °C), or 140 °F (60 °C). In the absence of an HDB established at the specified temperature, the HDB of a higher temperature may be used in determining a design pressure rating at the specified temperature by arithmetic interpolation using the procedure in Part D.2 of PPI TR–3/2004, HDB/PDB/SDB/MRS Policies (incorporated by reference, see § 192.7).
- \( t \) = Specified wall thickness, inches (mm).
- \( D \) = Specified outside diameter, inches (mm).
- \( SDR \) = Standard dimension ratio, the ratio of the average specified outside diameter 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.

**DEPARTMENT OF COMMERCE**

**National Oceanic and Atmospheric Administration**

50 CFR Part 635

[Docket No. 080723890–81590–02]

RIN 0648–AX03

**Atlantic Highly Migratory Species; Atlantic Commercial Shark Management Measures**

**AGENCY:** National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

**ACTION:** Final rule; fishing season notification.

**SUMMARY:** This final rule establishes the annual quotas for the 2009 fishing season for sandbar sharks, non–sandbar large coastal sharks (LCS), small coastal sharks (SCS), and pelagic sharks managed under Amendment 2 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP). This final rule also establishes the opening date for the commercial Atlantic shark fisheries. This action is expected to have minimal negative impacts on commercial fishermen in the Atlantic commercial shark fishery as only a small overharvest occurred in the porbeagle shark fishery in 2008.

**DATES:** This final rule is effective on January 23, 2009. The 2009 Atlantic commercial shark fishing season and quotas are provided in Table 1 under SUPPLEMENTARY INFORMATION.

**ADDRESSES:** Highly Migratory Species Management Division, 1315 East–West Highway, Silver Spring, Maryland 20910.


**SUPPLEMENTARY INFORMATION:**

**Background**

The Atlantic shark fishery is managed under the authority of the Magnuson–Stevens Fishery Conservation and Management Act (Magnuson–Stevens Act). The regulations outlined in the 2006 Consolidated HMS FMP and its amendments are implemented at 50 CFR part 635.

On June 24, 2008, NMFS published a final rule (73 FR 35778, corrected at 73 FR 40658, July 15, 2008) implementing Amendment 2 to the 2006 Consolidated HMS FMP. That final rule established annual base quotas for SCS and pelagic...