

## **Pipeline and Hazardous Materials Safety Administration**

### **49 CFR Part 192**

**[Docket No. PHMSA- 2005-22642; Notice 1]**

**RIN 2137-AE09**

### **Pipeline Safety: Design and Construction Standards to Reduce Internal Corrosion in Gas Transmission Pipelines**

**AGENCY:** Pipeline and Hazardous Materials Safety Administration (PHMSA),  
Department of Transportation

**ACTION:** Notice of proposed rulemaking.

**SUMMARY:** This document proposes regulations on the control of internal corrosion when designing and constructing new and replaced gas transmission pipelines. The proposed rule would require an operator to take steps in design and construction to reduce the risk that liquids collecting within the pipeline could result in failures because of internal corrosion. These changes would ease steps an operator must take in operating and maintaining the pipeline to minimize internal corrosion.

**DATES:** Anyone interested in filing written comments on the rule proposed in this document must do so by [Insert 60 days from date of publication in the FEDERAL REGISTER]. PHMSA will consider late filed comments so far as practicable.

**ADDRESSES:** Comments should reference Docket No. PHMSA-2005-22642 and may be submitted in the following ways:

- DOT Web Site: <http://dms.dot.gov>. To submit comments on the DOT electronic docket site, click “Comment/Submissions,” click “Continue,” fill in the requested information, click “Continue,” enter your comment, then click “Submit.”
- Fax: 1-202-493-2251.

- Mail: Docket Management System: U.S. Department of Transportation, 400 Seventh Street, SW, Nassif Building, Room PL-401, Washington, DC 20590-0001.
- Hand Delivery: DOT Docket Management System; Room PL-401 on the plaza level of the Nassif Building, 400 Seventh Street, SW, Washington, DC between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.
- E-Gov Web Site: <http://www.Regulations.gov>. This site allows the public to enter comments on any Federal Register notice issued by any agency.

Instructions: You should identify the docket number, PHMSA-2005-22642, at the beginning of your comments. If you submit your comments by mail, you should submit two copies. If you wish to receive confirmation that PHMSA received your comments, you should include a self-addressed stamped postcard. Internet users may submit comments at <http://www.regulations.gov>, and may access all comments received by DOT at <http://dms.dot.gov> by performing a simple search for the docket number. Note: All comments will be posted without changes or edits to <http://dms.dot.gov> including any personal information provided. Please see the Privacy Act heading in the Regulatory Analyses and Notices section of the Supplemental Information.

**FOR FURTHER INFORMATION CONTACT:** Barbara Betsock by phone at (202) 366-4361 or by fax at (202) 366-4566, or by e-mail at [barbara.betsock@dot.gov](mailto:barbara.betsock@dot.gov).

**SUPPLEMENTARY INFORMATION:**

Background

*Internal corrosion*

Corrosion can occur on the interior wall of a steel pipeline when liquid gathers within the pipeline. Whether corrosion occurs in these circumstances depends on the nature and amount of contaminants inside the pipeline and the operating conditions of the pipeline.

#### *Current regulations*

Current pipeline safety regulations found in 49 CFR Part 192 require an operator to take actions to address internal corrosion in operating and maintaining a gas transmission pipeline. An operator must include the details of its corrosion program in procedural manuals and carry out the program. Among the actions that an operator must take to prevent corrosion are the use of inhibitors in the gas, the use of cleaning pigs, the removal of liquids and solids from drips, and monitoring the contaminants. When an operator discovers internal corrosion, an operator must take extra steps such as using coupons to check for corrosion to prevent internal corrosion-induced failure. Besides these operation and maintenance (O&M) requirements, an operator must design and construct pipe installed since 1994 to allow the passage of internal inspection tools, commonly known as “pigs”. Therefore, all pipeline installed since 1994 allow the use of cleaning pigs.

On December 15, 2003, we issued regulations on integrity management programs for gas transmission pipelines. These regulations are found at 68 FR 69816. Specifically, an operator must include within its integrity management program a means to discover whether internal corrosion impacts the integrity of its pipeline. The means may include internal inspection or hydrostatic testing. Where pipeline design does not

allow the use of pigs, internal corrosion direct assessment (ICDA) is the likely choice. The operator must then address any corrosion found.

To prepare for ICDA, an operator must evaluate whether the design and construction of the pipeline contributes to the risk of internal corrosion. These design and construction features include low points in which liquids may gather, such as sags, drips, inclines, valves, manifolds, dead-legs, and traps; elevation profile; and pipe diameter. An operator combines information about design and construction with O&M history such as places where cleaning pigs have not been used, patterns of gas quality, and the range of expected gas velocities. An operator uses this analysis to decide where to excavate and examine the line for internal corrosion.

#### *Reasons for regulation*

Internal corrosion has been one of the three leading causes of reportable incidents in gas transmission pipelines for the past five years, both in percentage of incidents and their consequences. In fact, in 2003 and 2004, internal corrosion caused more property damage than the other two most frequent causes, third-party excavation damage and external corrosion, combined. Specifically, internal corrosion caused \$14.9 million in property damage in 2003 versus \$11.9 million in damage attributable to external corrosion or third-party excavation damage. In 2004, internal corrosion caused \$4.9 million in damage versus \$4.0 for the other two causes combined.

There is an increasing demand for natural gas. As producers tap new sources, there is a possibility the nature and amount of contaminants in the gas will vary. To ensure safe and reliable delivery of gas, pipeline operators must be vigilant in preventing internal corrosion and monitoring its impact when it occurs. Early planning for

corrosion control at the design and construction stage would simplify the O&M actions needed later for corrosion control.

The integrity management regulations require added O&M steps to control internal corrosion. Designing and constructing pipelines with internal corrosion control in mind would ease integrity management assessments whether done by internal inspection or ICDA. Planning at the design and construction stage would also simplify actions needed to address internal corrosion during O&M. There are two industry standards for considering internal corrosion control during design and construction. These are the American Society of Mechanical Engineers (ASME) code for gas piping (ASME B31.8, Gas Transmission and Distribution Piping Systems) and the American Gas Association's Guide for Gas Transmission and Distribution Piping Systems. These standards already provide guidance to operators. However, clear performance-based design and construction standards for internal corrosion control will aid operators in complying with the recent integrity management regulations as well as the existing O&M requirements.

Finally, in its report on the gas transmission pipeline accident that occurred in 2000 near Carlsbad, New Mexico, the National Transportation Safety Board (NTSB) described physical features that promoted internal corrosion of the line. There were low points just upstream of where the pipeline crossed the Pecos River. The original construction of the line included a drip installed upstream of these low points to prevent liquid from gathering in the low points. At some point, the operator modified the line to allow the use of cleaning pigs upstream of the Pecos River. The operator placed the equipment used to remove cleaning pigs at the valve upstream of the drip. The NTSB

concluded residue clogged the drip allowing liquids to flow past the drip and settle in the low points at the river crossing. The NTSB investigation after the pipeline ruptured at the low points revealed severe internal corrosion at the site. The line where the cleaning pigs had been used upstream did not experience internal corrosion needing repair.

Noting the lack of Federal design and construction standards aimed at internal corrosion, the NTSB recommended the Department change its regulations:

Revise 49 Code of Federal Regulations Part 192 to require that new or replaced pipelines be designed and constructed with features to mitigate internal corrosion. At a minimum, such pipelines should (1) be configured to reduce the opportunity for liquids to accumulate, (2) be equipped with effective liquid removal features, and (3) be able to accommodate corrosion monitoring devices at locations with the greatest potential for internal corrosion. (P-03-1).

We agree there should be Federal standards to address internal corrosion at the design and construction stage.

#### *Statutory considerations*

PHMSA has broad authority to issue safety standards on the design, construction, operation, replacement, and maintenance of gas transmission pipelines. This authority is in 49 U.S.C. 60102(a). Under 49 U.S.C. 60104, a design and construction standard may not apply to a pipeline existing when we issue the standard. Therefore, this proposal imposes design and construction requirements only on new and replaced pipe and components. The proposal does require an operator to evaluate the potential impact on existing pipelines by upstream changes made to the pipeline and take actions to address the impact. However, evaluating and addressing impacts is an O&M need rather than a

design and construction standard. The statute allows PHMSA to regulate O&M for existing pipelines.

Under 49 U.S.C. 60102(b), a gas pipeline safety standard must be practicable and designed to meet the need for gas pipeline safety and for protection of the environment. To do this, PHMSA must consider several factors in issuing a safety standard. These factors include the relevant available pipeline safety and environmental information, the appropriateness of the standard for the type of pipeline, the reasonableness of the standard, and reasonably identifiable or estimated costs and benefits. PHMSA has considered these factors in developing this proposed rule and provides its analysis in the preamble. PHMSA must also consider any comments received from the public and any comments and recommendations of the Technical Pipeline Safety Standards Committee (Committee). The Committee discussed the ideas for this proposal following a briefing at its meeting on June 15, 2005. The transcript of, and briefing materials for, the meeting are in the DOT DMS Docket RSPA-98-4470. PHMSA considered the Committee discussion in developing this proposed rule. This document seeks public comment on the proposed rule; the Committee will formally consider it in a future meeting. PHMSA will address the public comments and the Committee's recommendations when the agency prepares a final rule.

#### The Proposed Rule

The proposed rule would add a new section to Subpart I - Requirements for Corrosion Control in 49 CFR Part 192. The new section, §192.476 would require an operator to address internal corrosion risk when designing and constructing gas transmission pipelines.

Proposed paragraph (a) provides a performance test for internal corrosion prevention measures in design and construction. The test is whether the design and construction choices include measures to reduce the risk that liquid will collect inside the pipe. The proposed rule would require an operator to use measures that include, at the least, arrangement to avoid collection of liquids and the use of effective liquid removal equipment. If an operator is unable to avoid low spots, an operator would explain why and identify the alternative measures to reduce the risk. There may be cases in which the design avoids low spots, but during construction the operator finds that it cannot avoid low spots. In this case, the operator would document the “as built” condition and the alternative measures used.

Proposed paragraph (b) provides a performance test for design and construction measures to check any internal corrosion that occurs. The test is whether the design and construction choices include measures to reduce the risk of internal corrosion. The design must allow for use of corrosion detection equipment.

These design and construction requirements would apply to all new construction and to replaced pipe and components. With one limited exception, application to replaced pipe would be the same as the rule on designing to allow the passage of instrumented internal inspection tools. PHMSA clarified the meaning of replaced pipe in the final rule published in the **Federal Register** on June 28, 2004 (69 FR 36024). The exception occurs when replaced pipe changes the physical features of an existing downstream pipeline. Proposed paragraph (c) clarifies that an operator must consider the impact of line changes on internal corrosion risks and plan for these. Proposed paragraph (c) would not require an operator to rebuild the downstream pipeline to remove

low points, but would require an operator to consider whether it should install liquid removal equipment or tools to monitor corrosion. After analysis, an operator may decide O&M measures would adequately address the impacts of the changes upstream.

Paragraph (d) would require an operator to record the decisions it makes about internal corrosion control when designing and constructing pipelines. The operator would have to explain its reasons for the decisions and justify variance. For example, if an operator did not use equipment to remove liquids in designing a pipeline, the operator would have to explain why the use of the equipment would be impracticable. Recording reasons for decisions fosters better decisionmaking and will provide needed information about safety features of the line in the future.

#### Regulatory Analyses and Notices

##### *Privacy Act Statement*

Anyone may search the electronic form of all comments received for any of our dockets. You may review DOT's complete Privacy Act Statement in the Federal Register published on April 11, 2000 (65 FR19477) or you may visit <http://dms.dot.gov>.

##### *Executive Order 12866 and DOT Policies and Procedures*

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

##### *Regulatory Flexibility Act*

Under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*), PHMSA must consider whether rulemaking actions would have a significant economic impact on a substantial number of small entities. This proposed rule would affect operators of gas transmission pipelines and onshore gas gathering pipelines. There is not a substantial number of small entities which operate these lines. PHMSA expects the costs of compliance with the proposed rule would be small. PHMSA concludes that this proposed rule would not have a significant economic impact on any small entity.

PHMSA invites public comment on the number of small entities this proposed rule would impact.

#### *Executive Order 13175*

PHMSA has analyzed this proposed rulemaking according to Executive Order 13175, “Consultation and Coordination with Indian Tribal Governments.” Because the proposed rulemaking would not significantly or uniquely affect the communities of the Indian tribal governments nor impose substantial direct compliance costs, the funding and consultation requirements of Executive Order 13175 do not apply.

#### *Paperwork Reduction Act*

This proposed rule would affect information collection that OMB has approved under Control Numbers 2137-0049 (recordkeeping under 49 CFR Part 192). Operators of gas transmission pipelines must keep records to show the adequacy of corrosion control measures. In addition, they must keep construction records to make them available to individuals operating and maintaining the pipeline. The proposed rule may

require some added effort to document decisions about internal corrosion made during design and construction. Because of existing recordkeeping needs and prudent business practice, PHMSA estimates the added burden hours will be nominal. PHMSA invites comments on this estimate.

#### *Unfunded Mandates Reform Act of 1995*

This proposed rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of \$100 million or more 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 the proposed rulemaking for purposes of the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*). Because the proposed rulemaking would require limited physical change or other work that would disturb pipeline rights-of-way, PHMSA has preliminarily determined the proposed rulemaking is unlikely to affect the quality of the human environment significantly. An environmental assessment document is available for review in the docket. PHMSA will make a final determination on environmental impact after reviewing the comments to this proposal.

#### *Executive Order 13132*

PHMSA has analyzed the proposed rulemaking according to Executive Order 13132 ("Federalism"). The proposed 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. The proposed rule does not impose substantial direct compliance costs on State and local governments. The pipeline safety law prohibits State safety regulation of interstate pipelines. This proposed regulation 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 proposed rulemaking is not a "significant energy action" under Executive Order 13211. It also is not a significant regulatory action under Executive Order 12866 and 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 proposed rule as a significant energy action.

#### **List of subjects in 49 CFR Part 192:**

Internal corrosion, design and construction, pipeline safety.

For the reasons provided in the preamble, PHMSA proposes to amend 49 CFR Part 192 as follows:

**PART 192 – TRANSPORTATION OF NATURAL AND OTHER GAS BY PIPELINE:  
MINIMUM FEDERAL SAFETY STANDARDS**

1. The authority citation for part 192 continues to read as follows:

Authority: 49 U.S.C. 5103, 60102, 60104, 60108, 60109, 60110, 60113, and 60118; and 49 CFR 1.53.

2. Add § 192.476 to read as follows:

**§ 192.476 Internal corrosion control: Design and construction.**

(a) Avoiding liquids. An operator must design and construct each new transmission line and each replacement of line pipe, valve, fitting, or other line component in a transmission line to reduce the risk that liquids will collect in the line. At a minimum, unless an operator shows that it is impracticable or unnecessary to do so, an operator must –

(1) configure new pipeline or replacement of line pipe, valve, fitting, or other line component to reduce the risk that liquids will collect in the line; and

(2) equip the new pipeline or replacement pipe with effective liquid removal features.

(b) Monitoring. An operator must design and construct each new transmission line and each replacement of line pipe, valve, fitting, or other line component in a transmission line to reduce the risk of internal corrosion. At a minimum, unless an operator shows that it is impracticable or unnecessary to do so, an operator must use pipeline design and construction that allows use of corrosion monitoring devices at locations with significant potential for internal corrosion.

(c) Change to existing system. An operator must evaluate the impact that new or replaced line pipe, valve, fitting, or other line component may have on internal corrosion risk to the downstream portion of an existing pipeline and use equipment to remove liquids and to monitor corrosion as appropriate.

(d) Records. An operator must document the design and construction decisions related to internal corrosion. Documentation must include the reasons, and any engineering analysis, for each decision.

Issued in Washington, DC, on December 12, 2005.

Stacey L. Gerard,

Associate Administrator for Pipeline Safety.

This notice went on public display at the Federal Register on December 12, 2005.

This notice will publish in the Federal Register on December 15, 2005.