

## DIMP Frequently Asked Questions

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### General

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#### **1. Why is PHMSA proposing integrity management requirements for distribution pipeline systems?**

The prescriptive regulations that historically have been used by PHMSA have contributed to producing an admirable safety record. Nevertheless, accidents continue to occur, some of which involve significant consequences, including death and injury. These accidents often involve unique circumstances or weaknesses of a particular pipeline system/ segment or its operation. PHMSA concluded that it was not practical to impose prescriptive requirements on the entire pipeline industry that would further minimize the likelihood of future accidents in a cost-effective manner. Instead, PHMSA concluded that it was necessary to require that pipeline operators analyze their particular pipeline systems, circumstances and programs to identify potential weaknesses that could result in high consequence accidents and to address those weaknesses before accidents could occur. PHMSA implemented this approach through its integrity management regulations, beginning first with hazardous liquid pipelines and next with gas transmission pipelines.

Distribution pipelines are different, and PHMSA recognizes that the integrity management regulations to which other types of pipelines are subject cannot be applied to distribution pipelines without some change. At the same time, more high-consequence accidents occur each year on distribution pipelines than on all other types of pipelines combined. PHMSA recognizes that this higher number of accidents is, in large part, a reflection of the greater amount of distribution pipeline mileage in service. Still, the American Gas Foundation concluded in 2004 that the rate of significant accidents per mile of distribution pipeline is similar to that of gas transmission pipelines.

It is not possible to reduce significantly the expected number of future pipeline accidents with high consequences without reducing the likelihood of such accidents occurring on distribution pipelines. PHMSA proposes to use an integrity management approach similar to that used for other pipelines, with appropriate modification to reflect the different nature of distribution pipelines, to accomplish this safety improvement. The modifications include eliminating requirements for periodic integrity inspections, because physical differences between distribution pipeline systems and those affected by existing integrity management regulations make the inspection approaches used elsewhere impractical. This change, however, makes thorough analysis of the risks associated with each pipeline system, and actions to address those risks, even more important for distribution pipelines.

#### **3. Why aren't distribution pipeline operators required to physically inspect their pipelines as are operators of other types of pipelines?**

Distribution pipelines are generally complex, interconnected networks of smaller diameter pipe and branches, unlike other pipelines. In addition, approximately half of distribution pipelines are made of plastic, which is seldom used in other pipelines. The assessment techniques used on hazardous liquid and gas transmission pipelines (e.g., in-line inspection, pressure testing, direct assessment) cannot be used on smaller diameter and non-metallic pipe. In-line testing cannot be used to assess pipe with many branching connections, operating at relatively low pressures, typical of distribution pipelines. Pressure testing could be applied to distribution pipelines, but would require that service to customers be interrupted periodically, probably for many hours. Such interruptions are undesirable, especially when they are not needed.

Since distribution pipelines operate at low pressures, they are not subject to the same forces as other pipelines and thus tend to leak rather than rupture. Thus, it is important that distribution integrity management programs be focused on identifying the conditions that can cause leaks and addressing them before the failures occur, and on managing leaks.

Existing regulations require that operators examine the condition of entire pipe that is excavated for other reasons, including distribution pipelines. Those requirements are not being changed.

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**11. Must an operator follow the Gas Piping Technology Committee (GPTC) DIMP guidelines?**

No. The GPTC DIMP guidelines provide options that operators can use in implementing the high-level requirements of the proposed rule. The GPTC DIMP guidelines are not incorporated into the proposed rule, and thus do not have the weight of requirements. Operators may use other approaches, to meet the high-level requirements of the proposed rule. Operators will need to demonstrate to their regulators that their actions meet the proposed rule requirements. PHMSA and State pipeline safety regulators participated in the development of the GPTC guidelines and have confidence that operators who follow them will comply with the requirements of the proposed rule.

**22. Why has PHMSA selected the performance measures that it has for periodic reporting?**

It is important for PHMSA (and States) to measure the safety improvement (i.e., performance) achieved by this new regulation. Ultimately, a decrease in the number and consequences of distribution pipeline accidents will be the true measure, but it will take many years of accumulating data to determine with confidence that there is a declining trend in accidents/consequences. PHMSA needs data that will be useful in a shorter time frame to show whether improvements are being realized or further adjustments to requirements are needed.

PHMSA has concluded it would be most useful for operators to report a few performance measures.

The first is number of hazardous leaks repaired by cause. Leaks represent potential incidents, and PHMSA would expect robust integrity management programs to produce a reduction in the number of leaks. This information is already part of the annual report submitted by distribution operators.

The second is number of excavation damages and the number of one-call "tickets." Excavation damage is the leading cause of distribution pipeline accidents. The number of "tickets" is an indicator of the total amount of excavation activity in an area. PHMSA would expect robust integrity management programs to produce a reduction in the number of damages per ticket (or per 1000 tickets).

The last is the number of EFVs installed. The total number of installed EFVs should rise with time, since installation will be mandatory for all new and replaced residential services where EFVs are feasible. The number of valves installed will provide an indicator of the penetration of this mitigation device. PHMSA will seek to correlate this data with the data on excavation damages to try to better quantify the safety benefit of EFVs.

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## Proposed Rule Scope

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### **2. Why aren't the proposed distribution integrity management requirements focused on high consequence areas?**

The integrity management requirements for other kinds of pipelines are focused on portions of the pipeline where significant consequences could result if an accident occurs — so-called high consequence areas. This is a reasonable approach for gas transmission pipelines that traverse long distances. Much of that pipeline is in uninhabited or sparsely populated areas where accident consequences would not be significant, and it makes sense to focus safety-improvement efforts on other areas where consequences could be worse. The same cannot be said of distribution pipelines.

Distribution pipelines, by their nature, exist in populated areas, since they exist to deliver gas to those populations. In addition, distribution pipelines operate at low pressures where gas releases tend to occur as leaks rather than ruptures. These differences make it impractical to focus on certain portions of a distribution pipeline where the likelihood of an accident with significant consequences is greater. For distribution pipelines, PHMSA concludes it is more appropriate that operators consider their entire pipelines under their integrity management programs.

### **4. Why are master meter and LPG system operators proposed to be subject to different requirements?**

These systems are generally small, and cover limited geographic areas. The operators often have more direct control over excavation in the area in which they operate, providing more positive control over what is the greatest risk to a distribution pipeline system. These systems are also simpler, usually involving only pipe, meters, and service regulators. There have been few significant accidents on master meter and LPG distribution systems. This justifies a reduced set of integrity management requirements.

PHMSA is interested in public comment regarding whether these limited requirements are appropriate or if further limitations should be made. PHMSA specifically seeks public comment on whether these integrity management limitations are appropriate for master meter and LPG system operators; whether we should further limit the integrity management requirements for these operators; or whether we should exempt these operators from integrity management requirements.

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### **12. The proposed rule requires that an operator know its system. Must an operator excavate simply to gather information about parts of its system where it may not now have complete knowledge?**

No. Operators should gather the information that they have available, and which may now reside in different locations or be the responsibility of different groups within the company, to develop an understanding of their pipeline systems. Part of this development should include identifying information that is not now known, but which could be useful in understanding the performance of the pipeline and in analyzing its risk. Operators should then use opportunities that arise, such as where pipelines must be excavated for other reasons, to collect additional information to complete their understanding of the pipeline system. Operators should also assure that records are maintained for any future additions or changes to the system. Over time, PHMSA expects that operator understanding of their pipeline systems will improve, and the quality of their risk analyses will improve along with their understanding.

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## Mitigating Risks

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### **5. Why not simply require distribution operators to replace old, risky pipe?**

It is difficult to determine, on a general basis, what types of pipe pose the greatest risk. Older pipe has been exposed to environmental and service conditions for longer and it would seem logical that this would have led to more degradation, but much older pipe operates safely and has not been involved in accidents. At the same time, some newer pipe, including particular kinds of plastic pipe, has proven problematic in service and has been involved in accidents. State regulators often have required distribution operators to implement pipe replacement programs, but these have been targeted to specific problematic pipe based on the local circumstances facing particular operators. A general requirement to replace entire pipe in distribution pipeline systems after it has served for a given number of years would be very costly and would not necessarily produce an improvement in safety. Such a requirement would miss, and could distract operators from dealing with, material problems that may arise in other vintages of pipe. Additionally, excavation damage is the leading cause of distribution pipeline accidents, for which mandated pipe replacements offer no solution. The proposed rule will require distribution operators to analyze the risk of their pipeline, given their unique circumstances, including the age of their pipeline system. Operators can use these risk analyses to determine if some pipe should be replaced, and regulators can oversee operator decisions to help assure that they make appropriate decisions concerning pipe replacement.

The proposed rule requires that operators analyze their pipeline systems to determine the hazards that particularly affect them and the risks that the pipelines pose as a result. Operators must take actions, as appropriate, to address these areas, i.e., they must manage their existing pipeline. PHMSA concludes that this approach will result in a more efficient and effective improvement in safety than arbitrary replacement requirements.

### **14. Must an operator implement new actions to reduce risk from its pipeline?**

Not necessarily. Operators are already taking actions to control risks, some of which are required by regulation and some of which are implemented by operators voluntarily. It is possible that these ongoing actions already adequately address the risks that are significant to some pipeline systems. Operators must perform a risk analysis to understand the factors that are important to their risk and should compare the results of this analysis to the actions now being taken to assure pipeline safety. If gaps are identified, i.e., instances in which some factor important to risk is not now being adequately addressed, then appropriate risk control practices should be implemented. Operators may find it appropriate to reduce some actions now being taken (e.g., which address risks of lower importance) and to shift those resources to address higher priority risks. Operators must still comply with all the prescriptive requirements of the regulations.

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### **18. If an operator already has a leak management program, do they have to implement a new program in response to this proposed rule?**

Not necessarily. Operators may not need to implement new leak management programs. Rather, operators should review their current programs to assure that they include the elements required by the proposed rule and should adjust their programs as needed to comply. Leak management is an important factor in managing the risk from distribution pipeline systems. PHMSA recognizes that distribution pipeline operators currently implement leak management programs and that these programs are generally effective. For example, corrosion is a dominant cause of distribution pipeline leaks, but it causes only four percent of distribution accidents; PHMSA considers that effective leak management is the reason for this – operators identify and address these leaks before incidents occur.

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## Excess Flow Valves

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### **6. Why are Excess Flow Valves included in integrity management requirements?**

Excess flow valves (EFV) are one means to reduce the consequences of a potential accident. The valves automatically shut off the flow of gas in a service line when the gas flow in the line exceeds the rate normally experienced. Such significant increases in gas flow rate are most often caused by excavation damage that ruptures the service line downstream of the valve. Without an EFV, such damage can result in rapid accumulation of released gas and potential explosion and fire. Integrity management involves analyzing and managing risk, likelihood and consequences of an accident. It is therefore appropriate that EFVs be included as part of IM requirements.

The Pipeline Inspection, Protection, Enforcement and Safety Act (PIPES Act) of 2006 mandated that PHMSA require distribution pipeline operators to include EFVs in all new and replaced single family residential gas services for which they are feasible. This requirement has been incorporated in the proposed IM rule.

### **8. Will an operator have to retrofit excess flow valves into existing service lines?**

No. Excess flow valves (EFV) must only be installed where single family residential service lines are newly installed or are replaced for other reasons. The principal cost for installing the valves is the cost to excavate the service line. The valves, themselves, are inexpensive. Retrofitting valves into existing service lines could, therefore, be a costly proposition, while installing an EFV into a service line which has been excavated for another reason adds only a nominal cost.

### **9. Will excess flow valves provide protection for gas line breaks inside a residence?**

No. EFVs required by this regulation will not protect against breaks/leaks of piping inside a home.

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### **10. Will an operator still have to notify customers of the availability of excess flow valves after the final rule becomes effective?**

No. The requirement to install an EFV in proposed §192.1011 will render the existing customer notification requirement (§192.383) moot. The notification requirement is being repealed.

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## Threat/Risk Analysis

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### **13. Must an operator use a computer-based risk analysis model?**

No. Risk analysis is a process of understanding what factors affect the risk posed by a pipeline system and where they are relatively more important than others. For a complex system, use of a computer-based risk model could make this process easier. For a simple distribution pipeline system, it is possible to do a credible analysis that leads to an understanding of factors/areas that are important to risk without use of such a model. The Gas Piping Technology Committee (GPTC) DIMP guidelines will provide guidance on methods that can be used to conduct such non-computer-based analyses.

### **17. How will small operators, with limited staff, be able to implement the requirements for risk analysis and selection of risk control measures?**

The level of analysis required and risk control measures to be implemented are related to the complexity of a distribution pipeline system and the variability across a system in the threats it faces. Operators with small staffs typically operate smaller, simpler systems, so that the effort required to conduct risk analysis and to select risk control measures should be less than that required of operators of more-complex systems. The Gas Piping Technology Committee (GPTC) DIMP guidelines will provide guidance on relatively-simple approaches to risk analysis. The American Public Gas Association (APGA) Security and Integrity Foundation, with partial funding from PHMSA, is also developing the Simple, Handy, Risk-Based, Integrity Management Plan (SHRIMP), a computer-based program that is intended to assist small operators in meeting the analytical requirements of the proposed rule. SHRIMP is intended to be similar to Turbo-tax™, providing for input of important facts about a pipeline system and leading to outputs that direct an operator to appropriate risk control actions. SHRIMP development is still in progress.

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## Reducing Intervals for Periodic Requirements

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### **15. May an operator reduce activities now being undertaken to comply with regulations if it finds that other actions would have a greater effect on reducing risk?**

Potentially yes. The proposed rule provides that operators may propose an alternate frequency for periodic inspections and tests required by existing Part 192 regulations based on the results of its risk analysis. The alternatives can only be for activities that affect threats and/or portions of an operator's system found to be at low risk from the threats the activities are intended to address. This provision is intended to allow operators to shift resources that would be saved by modifying actions that address low risks in order to implement additional actions that affect higher risks. Operators would need to submit their proposed alternatives to the jurisdictional regulator (usually the State) and obtain approval before they can be implemented. PHMSA expects that States will consider the quality and thoroughness of an operator's risk analysis and any additional actions that an operator proposes to implement (if required by States) in considering operator proposals to modify inspection/test frequencies.

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### **16. How can operators use their DIMP programs to justify reductions in other periodic requirements?**

Part 192 includes requirements to perform certain tests and inspections periodically. For example, cathodic protection rectifiers must be inspected six times per year, leak surveys must be conducted annually in business districts, and pressure limiting devices must be tested at least annually. Each of these activities is intended to address a potential threat to distribution pipeline integrity. As operators complete risk analyses and implement measures directed at addressing threats of particular importance to their pipeline systems, the relative value of these required periodic activities could decrease.

The proposed rule includes a provision that would allow operators to submit proposed adjustments to the frequency of periodic actions now required in Part 192, based on the results of their risk assessment and the activities in their integrity management programs. Proposed changes will be reviewed by jurisdictional safety authorities and can be approved if the authority agrees that the risk reduction potential of the affected activities justifies the proposed change. This proposal is intended to allow operators to shift resources from generically-required periodic risk control activities to activities that are more specifically focused on the issues of importance to their particular pipeline systems. The NPRM poses a number of questions for public comment that are intended to help PHMSA determine whether this proposal is workable and provides the benefit that PHMSA thinks it will provide.

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## Plastic Pipe

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### **20. Why is PHMSA proposing to require that plastic pipe failures be reported to PHMSA?**

Approximately half of distribution pipeline is comprised of plastic pipe. It is important that operators with plastic pipe have complete information about potential problems with various types of plastic pipe in order to be able to analyze their risk accurately. The Plastic Pipe Data Committee (PPDC), a voluntary group, currently collects and analyzes plastic pipe failure data. The information available to the group for analysis is limited to that provided by participating members. Information resulting from PPDC analyses is only shared with members of the group. Thus, distribution pipeline operators who most need this information – small operators who lack the technical staff to seek out plastic pipe failure information on their own and whose resource constraints preclude their participation in PPDC – are not provided information they need to analyze their risk properly. PHMSA has included a requirement in this proposed rule that operators report all plastic pipe failures so that the information can be analyzed and results can be provided to all distribution pipeline operators.

PHMSA intends to discuss with PPDC changes to its processes that could make PPDC failure information available more broadly. If PPDC makes such changes, PHMSA would likely not include the failure reporting requirement in the final DIMP rule. PHMSA cannot dictate actions that PPDC will take, and has proposed the failure reporting requirement to assure availability of data that PHMSA or a new independent third party can analyze and provide to all distribution pipeline operators if PPDC elects not to do so.

### **21. Why is PHMSA seeking comments on marking of plastic pipe?**

Experience has shown that problems with plastic pipe are often limited to specific types of plastic, often to a single manufacturer or lot of material. Operators need to know the particulars of plastic pipe installed in their systems to apply new information concerning potential issues with plastic pipe. Complete records have not always been kept or are not retrievable. Turnover of information during acquisition and divestiture of pipeline systems has not always been complete. As a result, operators are often unable to determine what specific types of plastic pipe are installed in various locations within their systems. PHMSA therefore concludes that it would be desirable for information important to identifying a specific plastic pipe material to be retrievable from an examination of the pipe itself. PHMSA considers that marking of plastic pipe, as part of its manufacturing process, can be a low-cost means of providing information that could be useful to operators in the future. PHMSA is inviting public comment on the desirability of requiring permanent marking of plastic pipe and on related technical and logistical issues.

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## **Performance through People (PTP)**

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### **23. What is PTP, as referred to in the preamble to the proposed rule?**

PTP is an acronym for Prevention through People. The actions of people, errors of omission and commission, represent a portion of the risk to pipeline systems. At the same time, positive actions of people (operator personnel, excavators, and others) can help reduce the risk posed by pipelines. Historically, PHMSA has established regulations governing specific aspects of the interactions of people with pipeline systems. These include drug and alcohol requirements, personnel qualification, damage prevention programs, etc. To date, operators have not been required to conduct a holistic evaluation of the potential for the actions of people to affect their pipelines, positively or negatively. Much as the rest of integrity management involves a holistic evaluation to reach beyond the level of safety afforded by specific technical regulations, PTP involves an integrated evaluation of the effects of people to identify actions that will help improve safety from people-related issues more than the individual requirements have been able to achieve.

### **24. What is PTP's relationship with DIMP?**

Evaluating the effects that people can have on a pipeline is inherently a part of an overall evaluation of risk. Similarly, PTP is inherently a part of an integrated approach to evaluating and addressing risk, which is at the heart of integrity management program for gas distribution pipeline.