

New PHMSA Rulemaking Proceeding Targets Changes to Class Location Requirements

On July 31, 2018, the Pipeline and Hazardous Materials Safety Administration (PHMSA or the Agency) published an [advance notice of proposed rulemaking \(ANPRM\)](#) in the *Federal Register* asking for public comment on whether the Agency should change its class location requirements for gas pipeline facilities. Specifically, PHMSA is seeking comment on alternatives to pipe replacements driven by class location changes. Adopted nearly five decades ago, PHMSA's class location requirements use population density and surrounding land uses to categorize the potential risk that gas pipeline facilities pose to public safety.

The Agency is asking the public to comment on whether the class location requirements should be updated to account for recent developments in the pipeline industry, particularly the widespread use of integrity management (IM) principles and new technologies. The current regulations require operators to reduce pressure, replace pipe, or conduct hydrostatic pressure testing in response to class location changes, and PHMSA is considering whether other alternatives should be available. Comments must be submitted to the Agency on or before October 1, 2018.

The ANPRM is PHMSA's first new pipeline safety rulemaking proceeding in the Trump era. The Agency began examining the need to modernize the class location regulations several years ago in response to a mandate that Congress included in the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, and PHMSA is framing the ANPRM as an extension of that earlier effort. The Agency's decision to issue the ANPRM sends a strong signal about its commitment to President Donald Trump's regulatory reform agenda and willingness to address an issue of longstanding concern to the pipeline industry.

As the pipeline industry indicated in previous comments to PHMSA, the class location concept predates the extension of IM principles to the pipeline industry by several decades, and public safety could be improved if IM measures are implemented as an alternative to pressure reductions, pipe replacements, or hydrostatic pressure testing. PHMSA has identified several topics that should be considered in responding to the ANPRM, including whether pipelines with certain integrity or recordkeeping issues should be excluded from any potential changes to the class location regulations. In commenting on the ANPRM, the pipeline industry may wish to focus on these specific areas, in support of the broader goal of ensuring that PHMSA does not pursue regulatory changes that are unnecessarily restrictive, unduly burdensome, or overly complex.

Where Did Class Locations Come From?

The class location concept first appeared in the 1955 edition of Section 8 of American Standard Code for Pressure Piping (B31.1.8-1955). The B31.1.8-1955 required



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operators to use one-mile and 10-mile population density indexes, as measured along a half-mile-wide zone laid out along the centerline, to determine the class location of a pipeline segment at the time of construction.

Four class location categories were originally recognized in the B31.1.8-1955:

- Class 1 locations, which included unpopulated areas such as “waste lands, deserts, rugged mountains, grazing land, and farm land”.
- Class 2 locations, which included “[f]ringe areas around cities and towns” and other “farm and industrial areas”.
- Class 3 locations, which included more developed residential or commercial areas with buildings that did not exceed three stories in height.
- Class 4 locations, which included areas with buildings of four or more stories in height, heavy traffic, and other underground utilities.

The B31.1.8-1955 applied a design factor to the construction and testing of a pipeline within each class location. That design factor served to provide a higher margin of safety for pipelines in more densely populated areas and other at-risk locations, like road or highway crossings.

The 1968 edition of B31.8 (B31.8-1968) included new provisions to address class location changes that occurred after pipeline construction. The B31.8-1968 required operators to conduct periodic inspections of higher stress pipelines operating at pressures above 40 percent of specified minimum yield strength (SMYS) to detect potential changes in class location. If an increase in population density indicated that hoop stress of the pipeline was no longer commensurate with the current class location, an operator also had to conduct a study and take appropriate action to confirm or revise the pipeline’s maximum allowable operating pressure (MAOP).

PHMSA incorporated the B31.8-1968’s class location concept in the 1970 final rule that established the original minimum federal safety standards for gas pipeline facilities. In so doing, the Agency eliminated the 10-mile population density index; narrowed the zone that operators had to evaluate for human occupancy purposes to one-eighth mile on either side of the centerline; reduced the number of buildings that served as the limiting factor for Class 1 and Class 2 locations; modified the definitions of a Class 3 and Class 4 location; and introduced the “sliding mile” approach for conducting class location surveys. That sliding mile approach required operators to consider the number of buildings intended for human occupancy within a 1-mile-long “class location unit” that moves continuously along a pipeline’s centerline.

PHMSA also added a provision allowing operators to adjust the boundaries of a pipeline’s class location to accommodate clusters of buildings intended for human occupancy. Without that provision, the presence of a cluster of buildings in a defined area, such as a road crossing, would increase the class location for the entire sliding mile. To avoid that result, PHMSA allowed operators to end the class location designation 220 yards from the nearest building in the cluster.

How Are Class Locations Used Today?

The original class location regulations have remained largely intact since PHMSA issued the 1970 final rule.

Four class locations are recognized in the current regulations:

- Class 1, which includes an offshore location, or a class location unit with 10 or fewer buildings.
- Class 2, which includes a class location unit with more than 10, but fewer than 46 buildings.
- Class 3, which includes a class location unit with 46 or more buildings, or an area where the pipeline lies within 100 yards of either a building or a small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other such place of public assembly) that is occupied by 20 or more people on at least five days a week for 10 weeks in any 12-month period.
- Class 4, which includes a class location unit where buildings with four or more stories above the ground are prevalent.

Operators have the option of using “the cluster rule” to limit a pipeline’s class location to 220 yards in either direction from the nearest building in the cluster.

Class location affects the design and construction requirements and operation and maintenance activities that must be performed on a pipeline. Class location also plays an important role in establishing MAOP, the highest pressure that a pipeline may experience under PHMSA’s regulations. MAOP is typically based on the pipeline’s design pressure, a percentage of the post-construction test pressure, or the maximum safe operating pressure, whichever is lower. A more conservative safety factor is applied in determining MAOP as the class location increases.

An operator must take certain actions to review and confirm that the MAOP for a pipeline remains commensurate if a segment experiences a change in class location. These actions, which must be completed within two years of the class location change, include (1) reducing the MAOP of the affected pipeline segment, (2) replacing the existing pipe, (3) reconfirming the current MAOP based on existing records, or (4) conducting a new pressure test to re-establish the MAOP.

While occurring with less frequency in recent years, some operators have asked PHMSA for special permits when class location changes occur. A special permit is an order waiving an operator’s obligation to comply with a requirement in the pipeline safety laws or regulations. PHMSA only issues a special permit if the operator demonstrates that granting the waiver would not be inconsistent with pipeline safety. Special permits also include additional terms, conditions, and limitations where necessary to maintain safety, protect the environment, or serve the public interest.

What’s in the ANPRM?

The Agency asked for public comments on ten different questions in the ANPRM, including whether an IM alternative should be available for multi-level class location changes, *i.e.*, from Class 1 to Class 3 or Class 2 to Class 4, and class location changes due to additional structures built outside of clustered areas. PHMSA also asked whether there should be any situations or conditions that would make a pipeline segment ineligible for an IM alternative, *e.g.*, if the pipe is grandfathered, operates above 72 percent SMYS, has been manufactured with material or seam welding processes known to have integrity issues, has failure or leak history, has significant corrosion, has been damaged or lost ground cover, or has a history of seam failures.

In addition, PHMSA asked whether there should be maximum diameter, pressure, or potential impact radius limits on an operator’s ability to use integrity management measurements, and whether the IM alternative should only be available to operators that have traceable, verifiable, and complete records. The Agency raised

other topics as well, including whether the conditions from class location change special permits should be incorporated into the regulations and whether operators consult growth and development plans to avoid costly pipeline change-outs. Finally, PHMSA asked for more detailed information about the amount of pipe currently being replaced due to class location change-outs and the total costs associated with class location compliance.

What's Next?

The ANPRM is the first step in what is likely to be a lengthy rulemaking process. After reviewing the initial round of public comments, PHMSA may issue a notice of proposed rulemaking (NPRM) proposing regulatory changes. PHMSA would need to provide an opportunity for public comment and present the proposal to the Gas Pipeline Advisory Committee (GPAC), the federal advisory committee that reviews the Agency's proposed changes to the gas pipeline safety regulations. Once the GPAC process is complete, PHMSA may issue a final rule. While the exact course and timing cannot be predicted with certainty, it is likely that the Agency will need several years to complete this rulemaking process.



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Led by three former Pipeline and Hazardous Materials Safety Administration (PHMSA) attorneys, our Pipeline and Hazardous Materials Safety practice group counsels pipeline and midstream companies, gas utilities, terminal operators, investors, trade associations, and other stakeholders, throughout the United States. James Curry, Keith Coyle and Brianne Kurdock together have more than 25 years of experience with a multitude of pipeline safety issues. They partner with client engineering and legal personnel to address day-to-day compliance questions and develop business and regulatory strategies.