

**Class Location Methodology****Advisory Committee Action: Discussion**

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The Pipeline Safety, Regulatory Certainty, and Job Creation Act, Section 5, requires that the Secretary of Transportation complete an evaluation and issue a report on whether integrity management requirements should be expanded beyond high consequence areas (HCAs) and whether such expansion would mitigate the need for class location requirements.

In the August 25, 2011, ANPRM on Safety of Gas transmission pipelines, PHMSA sought public comment whether the integrity management program (IMP) requirements should be strengthened or expanded beyond current HCAs.

In the August 1, 2013 Notice of Inquiry, PHMSA sought public comment on whether applying IMP requirements, or elements of IMP, to areas beyond current HCAs, would mitigate the need for class location requirements for gas transmission pipelines.

A public workshop, scheduled for April 16, 2014 in DC, would provide additional opportunity for stakeholders to discuss this subject.

Based on these findings PHMSA would evaluate and issue a Report to Congress.

**Background**

- Class locations were an early method of differentiating risk along gas pipelines. It was previously included in the ASME B31.8 consensus standard from which initial regulations were derived. Class location is still an integral part of the latest version of B31.8 and is used to establish the design factor (safety margin) when designing pipelines.
- Class location is determined by counting the number of dwellings within 660 feet of the pipeline for 1 mile (for classes 1-3) or by determining that 4-story buildings are prevalent along the pipeline (class 4).
- Design factors, which generally reflect the maximum allowable percentage of SMYS, are: 0.72 for class 1, 0.60 for class 2, 0.50 for class 3, and 0.40 for class 4.
- Pipelines are designed based on population along their route. When class location changes, operators must reduce pressure to reduce stress levels in the pipe or replace pipe with pipe having thicker walls to yield lower stress at the same operating pressure.
- Operators have applied for special permits to avoid pipe replacement or pressure reduction after class location changes. PHMSA has approved numerous such permits.

**Integrity Management (IM) Approach**

- Gas IM requirements use a different approach to identify areas of higher risk along pipelines – high consequence areas (HCAs).
- HCAs are identified by counting the number of dwellings or areas people congregate within a calculated circle representing the area of likely consequences should a rupture/explosion occur.
- Operators must periodically inspect the condition of pipelines in HCA and repair any degradation that might affect pipeline integrity.

### ***Comparison of Class Location and IM Approaches***

- Class location requirements provide additional safety margin initially for more densely populated areas but do not address potential reductions in that safety margin due to corrosion or other types of degradation over time. As population increases in the vicinity of the pipeline, the class location regulation requires either pressure tests (at higher pressures than previously tested) or new pipe with updated safety margins to re-establish (revalidate) MAOP.
- IM requirements, and HCAs, provide additional safety for more densely populated areas by periodic inspection of pipe and repair to assure adequate safety margin.
- Substituting an HCA approach for class locations would not allow operation of existing pipeline at higher pressures, but could allow the operation of new pipelines at higher pressures by reducing the required safety margin. This possible reduced safety margin would be compensated for by requiring that periodic inspections/repairs assure that the safety margin is not excessively degraded.

### **Comments on ANPRM**

Industry: Suggested applying IM principles to non-HCA areas should be left to industry as a voluntary effort.

NAPSR: PHMSA should eliminate IM requirements and instead require all transmission pipelines to meet Class 3 and 4 requirements.

The Jersey City Mayor's office petitioned that the current Class Location system does not sufficiently reflect high density urban areas, and suggested, PHMSA should add three (3) new class locations.

Public: suggested that PHMSA revise the IM requirements to potentially include more mileage and critical infrastructure, and do not eliminate class locations.

### **Comments on Notice of Inquiry**

INGAA: Integrity Management should be extended beyond HCAs.

Recommends bifurcated approach. Allow either existing class locations or potential impact radius (PIR) method – calculated circle based upon pipeline size and pressure where a failure could have significant impact on people or property.

AGA: Allow operators to choose method, either existing class locations or PIRs.

API: Without Class locations it is not possible to determine regulatory status of gathering lines.

APGA: Should limit any gas rule to pipelines operating  $\geq 30\%$  SMYS.

Revise definition of a transmission pipeline. Small diameter, low stress pipelines operating under 20% SMYS currently classified as transmission lines should be classified as distribution lines.

Iowa Utilities Board: Keep existing class locations. Add additional safety to buildings outside small radius PIRs.

Pipeline Safety Trust: Supports applying integrity management beyond HCAs.

Expand class location definitions. Strengthen existing IM rule.