



Pipeline and Hazardous
Materials Safety Administration

Class Location Requirements for Gas Pipelines

Alan Mayberry

February 25, 2014



Today's Objectives

- **Update committee on status of Section 5, statutory mandate**
- **Provide overview and status**
- **Review comments received so far**
- **Conclusion**



Timeline

- **August 25, 2011: ANPRM Gas** (outside HCAs)
- **January 3, 2012, Program Reauthorized**
- **August 1, 2013: Notice of Inquiry** (class locations)
- **February 25, 2014: Update to PAC**
- **April 16, 2014: Class Location Workshop**
- **Early Summer: Complete Report**



Statutory Mandate

- **Section 5 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011**
 - requires PHMSA to evaluate and issue a *report* on whether Integrity Management Program (IMP) requirements, or elements of IMP, should be expanded beyond high consequence areas (HCAs), and
 - with respect to **gas transmission pipeline facilities**, whether applying IMP requirements to additional areas would mitigate the need for class location requirements.



Pipeline and Hazardous Materials Safety Administration

Overview

- **Where do we go?**

- Class location (No Change)
- New Class location definition
- HCAs modified
- Other Methods

- **How should it apply?**

- Gas Transmission, Distribution, and/or Gas Gathering
- Interstate and/or Intrastate
- Operating Stress Level
- Diameter and/or MAOP





Class Location

- **Class locations:**
 - provide a safety margin based on population density;
 - drive design, construction, operations and maintenance requirements for gas transmission pipelines;
 - are classes from 1 (rural) to 4 (densely populated).
 - determined by counting the number of buildings suitable for human occupancy within 660 feet;
 - derived from the ASME, “Gas Transmission and Distribution Pipeline Systems,” (ASME B31.8); and
 - is not determined based upon pipe diameter, operating pressure, or potential impact radius.



Class Location

- **Class locations:**
 - designate more stringent requirements on those higher classes as population density grows.
 - uses more stringent factors for :
 - Maximum Allowable Operating Pressure
 - O&M inspection intervals
 - Test pressures
 - Girth weld non-destructive testing (NDE)
 - design factors used are 0.72 for Class 1, 0.60 for Class 2, 0.50 for Class 3, and 0.40 for Class 4.



Class Location

- **As population grows** and more people live or work near the pipeline a class change may occur.
- **Class location change – operator options:**
 - reduce the pipeline segment MAOP;
 - replace the existing pipe; or
 - conduct a pressure test to establish MAOP for a class change (1-class change bump).



Integrity Management Approach

- **Gas Integrity Management:**
 - Uses high consequence areas (HCAs) to identify areas of higher risk along pipelines.
 - HCAs are defined by number of buildings or an identified sites, where people congregate or where they are confined within a calculated potential impact radius (PIR).
 - PIRs are calculated based on pipe diameter, MAOP, and heat of combustion for natural gas.



Integrity Management Approach

- **Pipeline segments in HCAs are:**
 - subject to ongoing integrity/threat assessments and remediation of anomalies.
- **HCAs require an operator to:**
 - assess and remediate the pipeline segment, but are **not used to establish MAOP or perform operational inspections.**



Pipeline and Hazardous Materials Safety Administration

Purpose of Class Locations and IM

- **Class locations:**
 - Used for design, MAOP determination, construction, testing and operational inspection and remediation activities.
 - **HCAs:**
 - Designed to determine if a pipeline segment is included in an integrity management program for risk and consequences
 - Used in making designations of areas requiring on-going threat assessments.
-
-



Pipeline and Hazardous
Materials Safety Administration

Part 192 Impacted by Class Location

Subpart A – General

Subpart B – Materials – *Pipe Wall Thickness or Grade/Strength*

Subpart C - Pipe Design – *Operating Pressures*

Subpart D - Design of Pipeline Component- *Operating Pressures*

Subpart E - Welding of Steel in Pipelines – *Non-destructive Tests*

Subpart G - General Construction Reqts. – *Depth of Cover*

Subpart I – Reqts. for Corrosion Control – *Corrosion Repairs*

Subpart J - Test Requirements – *Pressure Test Factor*

Subpart K – Uprating – *MAOP, Test Pressure, Class Loc., & Repair*

Subpart L—Operations – *Class Location and MAOP*

Subpart M—Maintenance – *Inspection Intervals*

Subpart O—Gas Transmission Pipeline IM - *HCA's – Method 1*



Overview of Comments on IM Expansion (ANPRM)

- **Public Comments:**

- Revise the IM to include more mileage (e.g., include entire Class 3 and 4 area in lieu of only the potentially impacted area inside Class 3 & 4) and critical infrastructure.
- IM plans for densely populated areas (Class 4) and for a new Class 5 encompassing cities with population greater than 100,000, be developed in consultation with local emergency responders.



Overview of Comments on IM Expansion (ANPRM)

- **Industry:** Application of IM principles to non-HCA areas should be left to industry as a voluntary effort.
- **NAPSR:** Prefer the current class location system
- **The Jersey City Mayor's office:** Current class system does not sufficiently reflect high density urban areas, and petitioned PHMSA to add three (3) new class locations.



Comments on Class Location - Notice of Inquiry

- **Industry Overview of Comments:**
 - Keep class locations intact for existing pipelines.
 - Allow a PIR approach to be used for new pipelines and when Class locations change.
 - Class locations imbedded in regulations and adopting a single design factor approach would be too complicated to implement.
 - Stakeholders need to be involved before any rulemaking is made.



Comments on Class Location - Notice of Inquiry

- **AGA:**
 - Allow operators to choose method for design factors, existing class locations or PIR (HCA method).
- **API:**
 - Without Class locations it is not possible to determine regulatory status of gathering lines.
- **APGA:**
 - Limit to pipelines operating $\geq 30\%$ SMYS.
 - Revise definition of a transmission pipeline.



Comments on Class Location - Notice of Inquiry

- **INGAA:**
 - IM should be extended beyond HCAs.
 - Allow either existing class locations or PIR method.
 - Revise certain operation and maintenance requirements that may no longer be necessary given new technology and integrity management activities.



Comments on Class Location - Notice of Inquiry

- **Iowa Utilities Board**
 - Keep existing class locations.
 - Add additional safety to buildings outside small radius PIRs.
- **Iowa Assoc. of Municipal Utilities**
 - New regulations would impose new and significant costs to operators of small diameter, low pressure pipelines.
 - Revise definition of transmission pipeline.



Pipeline and Hazardous Materials Safety Administration

Comments on Class Location - Notice of Inquiry

Pipeline Safety Trust:

- Supports applying IM beyond HCAs.
- Expand class location definitions.
- Strengthen existing Integrity Management rule.





Pipeline and Hazardous Materials Safety Administration

Conclusion