U.S. DOT
Pipeline and Hazardous Materials Safety Administration
Office of Pipeline Safety

Hazardous Liquid
High Consequence Areas and Integrity Management

Chris McLaren, PHMSA
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US DOT Building
9:30–10:00 am

High Consequence Ares (HCAs)

- As defined in 49 CFR 195.450, HCA means:

  - A ***commercially navigable waterway (CNW)***, which means a waterway where a substantial likelihood of commercial navigation exists;

  - A ***high population area (HPA)***, which means an urbanized area, as defined and delineated by the Census Bureau, that contains 50,000 or more people and has a population density of at least 1,000 people per square mile;

  - An ***other populated area (OPA)***, which means a place, as defined and delineated by the Census Bureau, that contains a concentrated population, such as an incorporated or unincorporated city, town, village, or other designated residential or commercial area;

  - An ***unusually sensitive area (USA)***, as defined in § 195.6.

Unusually sensitive area (USA)

- Pursuant to 49 CFR 195.6, USA means a drinking water or ecological resource area that is unusually sensitive to environmental damage from a hazardous liquid pipeline release.

  - Drinking water sources (DW USAs) include those supplied by surface water or wells and where a secondary source of water supply is not available. The land area in which spilled hazardous liquid could affect the water supply is also treated as an HCA.

  - Unusually sensitive ecological areas (Eco USAs) include locations where critically imperiled species can be found, areas where multiple examples of federally listed threatened and endangered species are found, and areas where migratory waterbirds concentrate.

Where are HCAs located?

- The National Pipeline Mapping System (NPMS) was initiated in 1999 to support the implementation of the HL IM Rule.
- As part of the NPMS, the Office of Pipeline Safety (OPS) has developed GIS datasets showing the locations of HCAs nationwide.
  - CNW, HPA and OPA: Download publicly available GIS datasets from the NPMS website, or view maps in the Pipeline. Information Management Mapping Application (PIMMA)
  - DW and ECO USA GIS datasets are only available by request to verified pipeline operators for states with hazardous liquid. operations.

Integrity Management (IM) Regulations protects HCAs

- Releases from pipelines can adversely affect human health and safety, cause environmental damage, and damage personal or commercial property.

- HCAs are specific areas where a release could have the most significant consequences.

- Pipelines in HCAs and that could affect HCAs must be operated and maintained in accordance with the Operator's IM Program.

- The IM Regulation requires Operators to devote additional focus, efforts, and analysis to ensure pipeline integrity.

Objectives of IM Regulations

1. Set Minimum Standards for Operator IM Systems
2. Review Operators' IM Program
3. Increase Public Assurance in Pipeline Safety
4. Accelerate Integrity Assessments of Pipelines Affecting HCAs

IM for Hazardous Liquid Pipeline

- Applicable to pipeline segments and facilities that “could affect” HCAs
- Performance based requirements with some prescriptive elements
- Requires operators to identify and address risks unique to their systems to avoid failures

IM Requirements

- Perform baseline assessments
- Perform ongoing integrity assessments
- Apply repair criteria and remediate anomalies within required timeframes
- Implement additional preventive measures and mitigative measures to reduce risks

Identifying Pipeline Segments that "Could Affect" HCAs

- OPS has mapped HCAs in NPMS
- NPMS data is available for Operators to compare to its own pipeline location and local terrain
- To determine which pipeline segments and facilities could affect an HCA, operators must analyze where hazardous liquid could flow in the event of a pipeline release
- Documentation of "could affect" analysis and results

Appendix C to Part 195—Guidance for Implementation of an IM Program

- Gives guidance to help an Operator implement the requirements of the IM program rule in §§195.450 and 195.452.
  - Information an Operator may use to identify a HCA and factors an Operator can use to consider in determining whether a pipeline release could affect an HCA

§195.452 Pipeline IM in HCA.

(d) *When must operators complete baseline assessments?*
Operators must complete baseline assessments as follows: . . .
(3) *Newly-identified areas*. (i) . . .
(ii) An operator must incorporate a new unusually sensitive area into its baseline assessment plan within one year from the date the area is identified. An operator must complete the baseline assessment of any line pipe that could affect the newly-identified high consequence area within five years from the date the area is identified.

Summary

- §195.450 Defines HCAs, which includes USAs
  - §195.6 Defines USAs
- §195.452 establishes pipeline IM requirements to protect HCAs
- Appendix C provides additional guidance and information to implement IM requirements such as identifying HCAs, establishing assessment frequency, internal inspection tool selection, etc.

Direct Impact

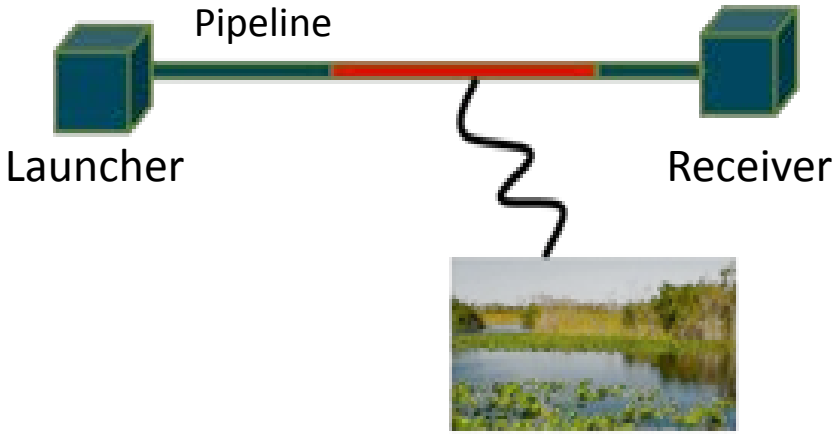
Direct Analysis – Determines locations at which the pipeline exists within (intersects with) an HCA. This analysis identifies points at which a pipeline enters and exits an HCA through GIS comparison with pipeline centerlines to HCA polygons.

Direct Watershed Impact Analysis

Identifies the intersection of a waterway using the National Hydrography Dataset and the potential that oil/hazardous liquid could flow to an HCA.

“Could affect” Analysis

This analysis involves calculating a rupture volume based on through-put, valve locations, and valve closure times. Rupture volume determinations are based on conservative worst case release (full guillotine rupture) scenarios.

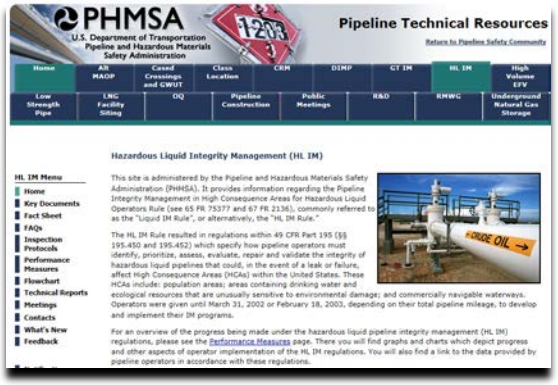


Inspection and Enforcement

- OPS (and States) inspects the Operator's IM Program, including any activities conducted by the Operator and / or contractors
  - Inspection Assistant Question Set

- Noncompliance or inadequate procedure will result in an enforcement action directed to the Operator, owner, or both

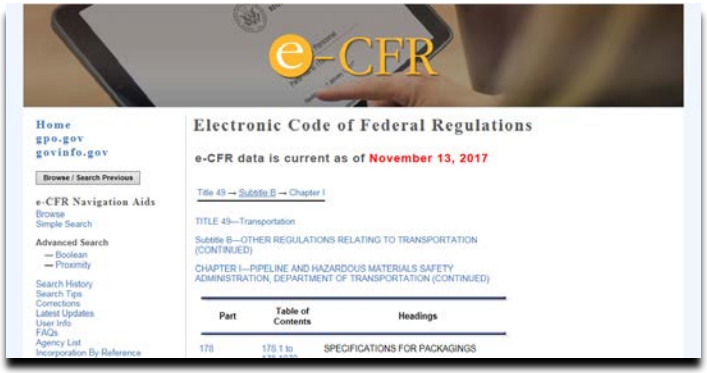
Available Resources



PRIMIS Pipeline Technical Resources

NPMS

PHMSA – Pipeline Enforcement



Electronic Code of Federal Regulations

Thank you for your Participation in Pipeline Safety