



What Are the Challenges and How Are We Addressing Them?

Department of Transportation National Pipeline Safety Forum

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IMCI

Integrity Management Continuous Improvement

1

Our goal is zero incidents *a perfect record of safety and reliability for the national pipeline system.*
We will work toward this goal every day.

2

We are committed to a safety culture as a critical dimension to **continuously improve** our industry's performance.

3

We will be relentless in our pursuit of **improving by learning** from the past and anticipating the future.

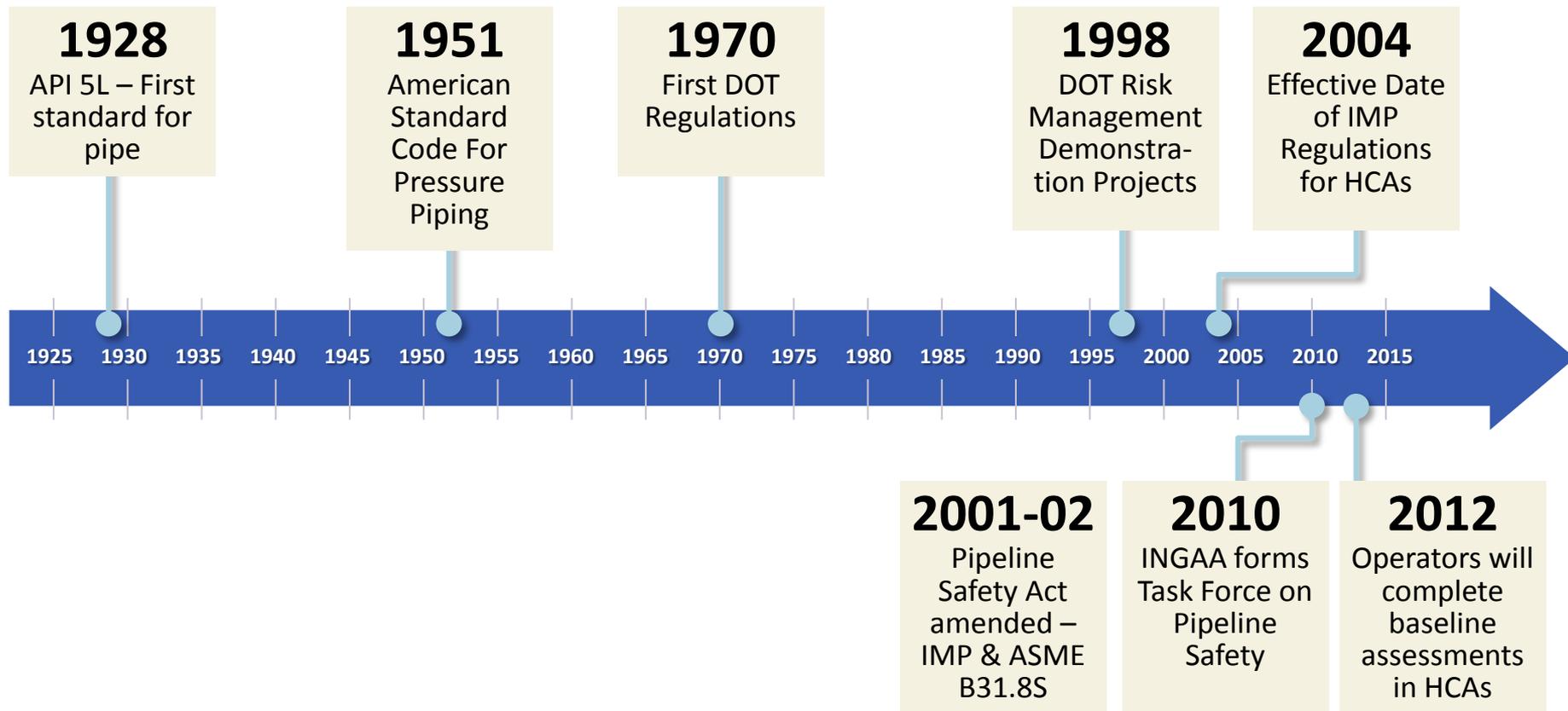
4

We are committed to **apply integrity management principles** on a **system-wide** basis.

5

We will engage our stakeholders, *the local community to the national level -* so they understand and can **participate in reducing risk.**

Pipeline Safety Standards are Part of Industry History



Effective Remedies Must Embrace the Complexity of the Issues



- We must recognize differences among industry sectors
 - Rate Structure
 - Competitive Environment
 - Infrastructure Composition
 - Threats

INGAA Member Integrity Assurance Programs



- In compliance with Federal Pipeline Safety Standards and the referenced engineering standards, INGAA operators apply comprehensive operations and maintenance processes to all transmission pipelines to ensure fitness for service
- ~77% of INGAA operated transmission pipelines have readily available documentation of having been pressure tested at least once*
- ~53% of total INGAA operated transmission pipelines have been baseline assessed utilizing an integrity management process based on consensus engineering standards*
- ~4.5% of INGAA pipeline miles are classified as operating within High Consequence Areas (HCAs) subject to the PHMSA Integrity Management Program*
 - ~91% of INGAA operated pipeline mileage within HCAs have readily available documentation of having been pressure tested at least once*
 - ~87% of INGAA operated pipeline miles within HCAs have been baseline inspected utilizing the PHMSA integrity assessment process. (100% are required to be completed by December 17, 2012)*

Pipeline Safety – Fitness for Service



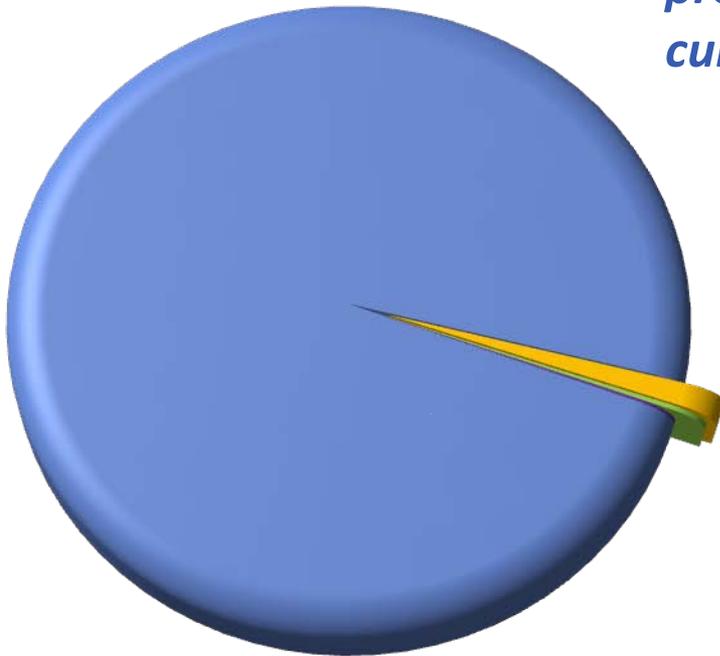
Age alone is not a significant indicator of transmission pipeline fitness for service

- More important factors for determining pipeline fitness are:
 - The material of the pipe
 - How it was constructed
 - How it has been operated
 - How it has been maintained
- Manufacturing and construction flaws in older pipelines are stable unless the operating environment changes
- Our ability to prevent and detect problems and, if necessary, repair or replace pipe has improved with risk assessment programs, pipeline testing, and advances in technology
 - The first step of pipeline safety is at the mill where manufactured pipe is inspected and tested to show pressure holding capability
 - Additional inspection and a final testing of pressure holding capability is performed after construction prior to placing a pipeline in service
 - Monitoring, testing and assessments are performed during operations to ensure ongoing safety

Vast Majority of Pipeline is at the Highest Recommended Standard



Over 98% of INGAA pipe is coated and protected from corrosion with electrical current known as cathodic protection (CP)



- Coated Pipe with Cathodic Protection
- Bare Pipe with Cathodic Protection
- Bare Pipe
- Plastic Pipe

What about the rest?

- Bare steel pipelines typically operate at lower pressures, in remote areas and can be more susceptible to external corrosion
- From 2002 to 2009, INGAA Operators removed or replaced 1,713 miles of bare transmission pipe
 - 973 miles (28%) of bare pipe with CP was removed or replaced
 - 741 miles (61%) of bare pipe with no CP was removed or replaced

1. Stakeholder Outreach	Two-way communication with meaningful performance measures. Actively promote PIPA (Pipeline and Informed Planning Alliance)
2. Risk Management	Apply risk management concepts beyond High Consequence Areas (HCAs) with comprehensive threat analysis
3. Integrity Management Tools	Enhance corrosion control methods and anomaly management protocols
4. Pipelines Built Prior to PHMSA Regulations	Develop inventory and protocols to manage integrity
5. Technology Development & Deployment	<ul style="list-style-type: none">• Improve crack-detection tools & management• Work with PHMSA to produce a R&D road map, and• Define assessment alternatives for non-piggable lines
6. Management Systems	Apply safety culture principles to drive learning across the industry
7. Emergency Preparedness Response	Update isolation valves automation and enhance public awareness
8. New Construction	Fully implement the 2010/2011 INGAA Foundation Pipe and Construction Action Plans