



# What Are the Challenges and How Are We Addressing Them?

## Department of Transportation National Pipeline Safety Forum

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Monday, April 18, 2011



# 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.

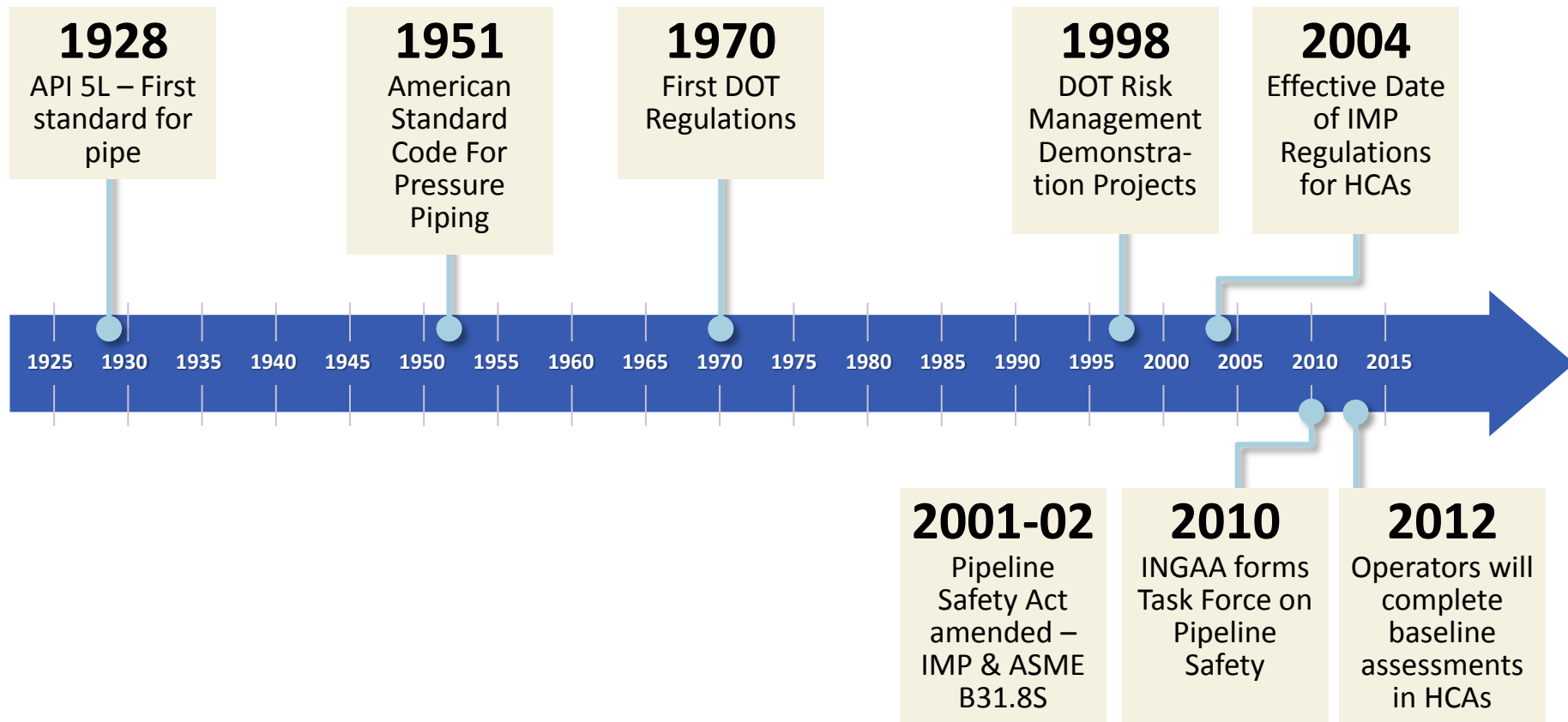
4

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



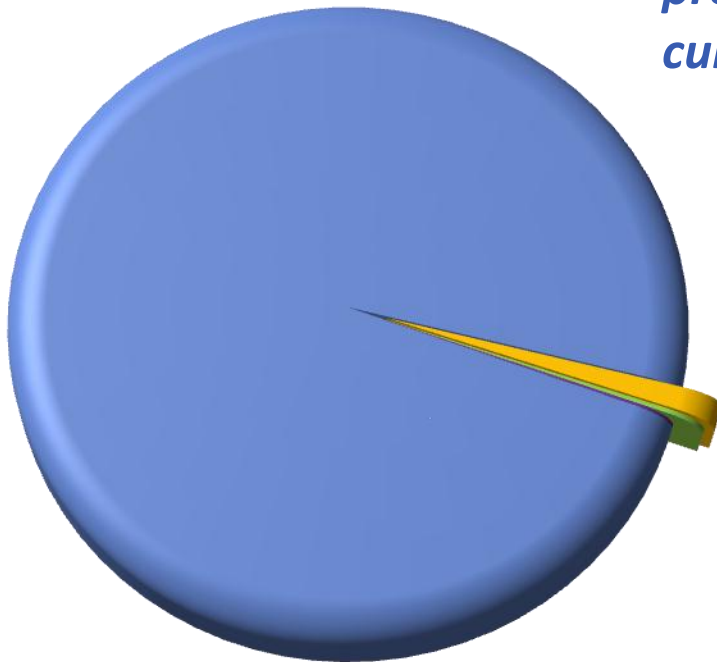
## *Age alone is not a significant indicator of transmission pipeline fitness for service*

- 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

# IMCI

## IMCI Action Plans



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