Pipeline Safety Trust
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Pipeline Safety in Transition

PHMSA – Office of Pipeline Safety
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History of IM Regulation, Outcomes, Concerns, and Recent Developments

Data Sources: Energy Information Administration, Census Bureau, PHMSA Annual Report Data, PHMSA Incident Data -- as of February 24, 2016.
Integrity Management Regulation

- Prescriptive elements
  - HCA Integrity assessment (primarily ILI and Pressure Testing)
  - HCA Repair criteria
- Management-based elements
  - Risk assessment
  - Preventive and mitigative measures (i.e., risk reduction)
  - Performance monitoring and continual improvement
Early IMP Experience

• Operator program weaknesses
  – Risk assessment
  – Risk reduction measures
  – Expected maturation beyond initial effort did not happen

• PHMSA weaknesses
  – Resource constrained
  – Inspectors had to adjust
  – Difficulty enforcing subjective regulations
  – Performance monitoring and continual improvement
Recent Learnings

• Simplistic risk assessment methods

• Inadequate consideration of key pipeline attributes
  – Age, design, material, coating, etc.
  – Welding and construction technique
  – Missing or questionable records
  – Lessons learned from other segments of system

• Use of tools inadequate to address some threats (e.g., Direct Assessment)
Recent Learnings

• Repair criteria and schedules allow too many sizeable and growing anomalies to remain in service for long periods

• Poor analysis of discovered defects (rationalize not excavating defects rather than aggressively seeking to investigate and discover injurious defects)

• Examples include:
  – Enbridge accident at Marshall, MI (e.g., interactive threats)
  – Plains accident at Santa Barbara, CA (e.g., significantly under called ILI indications and failure to validate tool performance)
Moving Toward Zero Accidents

- Zero Accidents Ultimately Relies on Operators Doing what is Necessary, Regardless of Regulatory Requirements
- We Collectively Must Break the Cycle of Merely Responding to Most Recent Incident
- PHMSA Supports and Endorses the Pipeline Safety Management System (PSMS)
  - API 1173, Standard for Pipeline Safety Management System Requirements
  - PSMS is all about changing industry attitudes, mindset, and safety culture
  - Until each operator embraces and implements PSMS, the full effectiveness of IMP will not be realized
What Is PHMSA Doing?

• Support and Encourage Serious Adoption of PSMS and a Culture of Safety
• Revise Regulations to Address Areas of Poor Operator Performance
• Strengthen Inspection and Enforcement
• Fund Research and Development to Improve Assessment Technologies
The Right Mix

• PHMSA continues to seek the right mix of prescriptive and performance based standards

• Initial Integrity Management Program (IMP) rules were a major improvement, but ...

• IMP is still evolving.

• PHMSA has proposed significant new changes to IMP in response to San Bruno and Marshall, MI
  – Hazardous Liquid NPRM (Nov 2015) 80 FR 61610
  – Gas NPRM (Mar 2016) 81 FR 20722
Proposed IMP Rule Revisions

• Management System Requirements
  – More detail regarding execution of management system aspects of IMP
  – Validate risk models and risk analysis results

• Prescriptive Requirements
  – Technical aspects of evaluating discovered defects
  – Repair criteria

• Operator knowledge of pipeline attributes
  – Accurate knowledge of pipeline
  – Accurate records
  – Technical approach to re-establish key attributes when unknown
Proposed IMP Rule Revisions

• Expand Integrity Assessments to Non-HCA Areas
  – Require Integrity Assessments to substantial amounts of non-HCA pipe
  – Apply comparable repair criteria

• Integrity Verification Process
  – Address “Grandfather Clause”
  – Address Legacy Pipe
  – Address Pipe Without Records
Improved Guidance

• Risk Modeling Work Group
  – Joint group comprised of PHMSA and industry experts
  – Effective modeling of pipeline risk critical for successful integrity management and improved safety performance
  – PHMSA promotes the establishment of a mechanism for long term improvement and refinement of pipeline risk analysis

• “Big Data”
  – Sophisticated Risk Models are only as Good as the Data Being Analyzed
  – Improvement of In-line and other pipeline assessment technologies depends on analysis of tool performance via detailed comparison of tool results with field measured as-found flaw characteristics
  – Pipeline Reauthorization Act, Section 10, Mandates that DOT Convene a Working Group to Develop a System for sharing “Big Data” for these purposes
PHMSA Internal Initiatives

• Increased inspection staff
• Reengineer inspection process
  – Data-driven, risk-informed
  – More investigative
• Modernize tools
  – “Inspection Assistant”
  – Inspection planning
  – Documentation
  – Data capture
PHMSA Internal Initiatives

• Accident Investigation Division
  – Multi-regional team of PHMSA investigators
  – Comprehensive procedure for investigating accidents
  – Incorporate learnings from previous accident investigations
  – Incorporate features to provide feedback and continual improvement

• PHMSA 2021 Strategic Plan
  – Data Assessment and Strategy
  – Improvements to National Pipeline Performance Measures
Research and Development

• Improve Assessment Technology R&D
• Upcoming Event: November 16-17, 2016
  Pipeline Safety R & D Forum

  – http://primis.phmsa.dot.gov/meetings/
Zero Accidents

• PHMSA takes each accident seriously
• Continual improvement
  – Right balance between prescriptive and performance-based regulations
  – Collaboration with all stakeholders
  – Oversight performance
  – Data and analytics
• Goal: ZERO Accidents
Thank You