

# DOT Pipeline Safety Forum

## April 18, 2011

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### *Panel 2: Challenges to the Liquid Petroleum Pipeline Industry*

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# AOPL-API Vision Statement

- Since 2001, our vision has been an oil pipeline industry that:
  - Conducts operations safely and with respect for the environment, with zero deaths, injuries, or releases;
  - Respects the privilege to operate granted to it by the public; and
  - Provides reliable transportation of the crude oil and refined products to Americans
- The vision statement reflected and solidified industry values that predated current safety initiatives.

# Types of Releases

- Time dependent factors
  - Internal corrosion
  - External corrosion
  - Seam/weld failures
  - Latent external force damage
- Other
  - Excavation
  - Operator error
  - Equipment failures
  - Natural forces

# Industry Actions to Reduce Releases

- Developed a risk based approach to pipeline assessments
  - Initial focus has been on HCAs
  - Many companies have developed their own screening process to assess pipelines outside of HCAs
- Implemented integrity management programs
- Committed resources to R&D efforts
- Developed forums to share learning experiences
- Committed to improving public awareness
- Increase training for employees and contractors

# Integrity Management Practices

- IMP programs contribute the most to reducing releases
- IMP efforts include:
  - Conducting internal inspections with sophisticated tools
  - Visually verifying the accuracy of the internal inspection reports
  - Repairing and/or replacing impacted line segments
  - Hydrostatic and close interval surveys used in certain circumstances
  - Applying cathodic protection to pipelines
  - Improving leak detection
- Hydrostatic testing has limitations
  - Destructive test that can impact otherwise stable anomalies
  - Less capable of detecting corrosion
  - Point in time analysis

# Pipeline Repairs

- Repairs and Replacements are:
  - Subject to extensive codes and standards
  - Well engineered and planned
  - Intended to be permanent
  - Restore the pipe to “like new” ratings
- Repairs typically involve isolated sections of pipe
- Replacements
  - Less frequent
  - Involve distinct line segments or sections of pipe

# Examples of Repairs

**Repairs are well engineered...**

**...and return to pipe to like new condition.**



# Examples of Repairs



# Improving Awareness

- Public Awareness
  - The liquid industry is a proud and active member of CGA
  - The liquid industry is a strong supporter of 811 campaigns
  - Undergoing program evaluations and regulatory audits
  - Learnings are and will be rolled back into programs
- Employee Training
  - Developed OQ for covered tasks
  - Implementing programs to train additional SCADA operators
- Contractor Training
  - Contractor certifications
  - Included in our safety statistics

# Sharing Information and Experiences

- Voluntary Participation in PPTS
  - Participation covers ~ 85% of the pipeline miles
  - Includes information that is beyond regulatory requirements
  - Used to identify trends and areas for R&D
- Strong Participation in AOPL/API Initiatives
  - Environmental Safety Initiative
  - Performance Excellence Team
  - API Pipeline Information eXchange
  - Involvement in standards development organizations
- Standing teams and workshops to share learning experiences
  - Share information on near misses and best practices
  - Safety culture forums
  - Provide recommendations for action

# Technical Constraints

- ILI tools are not infallible:
  - Right technology must be matched with the anticipated threat
  - Multiple threats may require tool runs with different technologies
  - Some longitudinal weld seam anomalies have alluded detection
  - Technology limitations requires conservative protocols for certain anomalies
  - Technology has adapted to find new features (e.g. transverse field)
  - Vendors require market support to develop new technologies
  - Making progress, but continuing research and technology is required
- Leak Detection
  - Instrumentation is not sensitive enough to detect all releases
  - Most systems are not point to point, adds complexity
  - Automatic shut-off valves have capability limitations
  - Mitigates, does not reduce the likelihood of a release

# Other Challenges

- Permitting Delays
- Encroachment
  - Growing population in areas that were once rural.
  - Strongly support PIPA to help guide local land use and development
- Public Awareness
  - Important tool to communicate safety information to those along the ROW
  - Challenge is to measure the effectiveness of our outreach
- Excavation Damage
  - Third party damage causes roughly 1/3 of all significant releases
  - ~ 85% of excavation damage releases resulted from not following CGA Best Practices.
  - Existing exemptions to one-call requirements create safety gaps
  - Enforcement gaps in states with weak enforcement laws

- Integrity management efforts make a difference
  - Meaningful reduction in volume and number of releases
- Standard should be “Fit for Service”
  - Existing regulations cover standards for construction, operations, maintenance and damage prevention
  - Repairs/Replacements restore pipe to “like new” ratings
  - Age should not be the determining factor
- Resources committed to solving challenges/constraints
  - Financial
  - Human resources
- Committed to continuous improvement to achieve our Goals