

# Getting to Zero

Pipeline Safety Trust, October 20, 2016

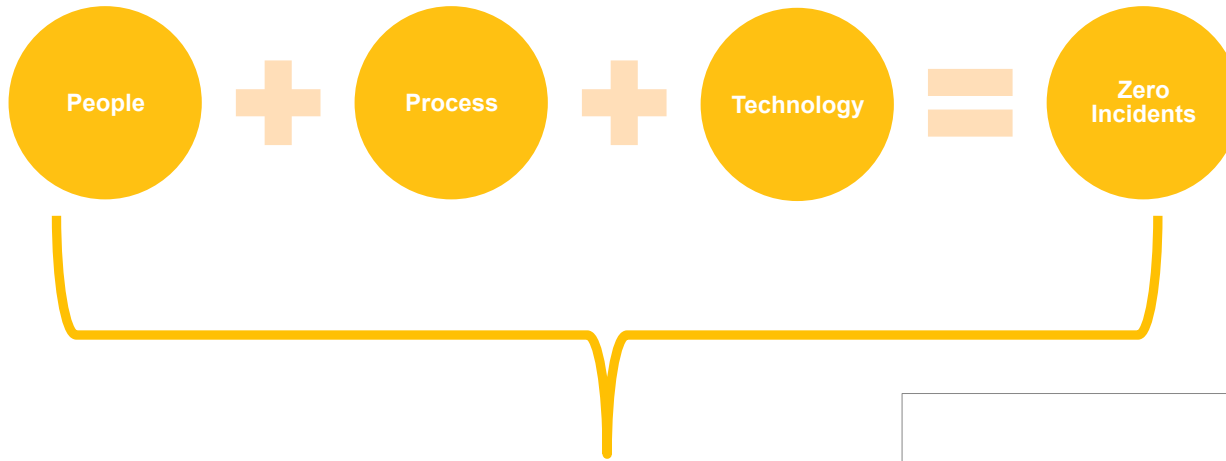
---

Lorna Harron  
Senior Manager, Technology Advancement  
Pipeline Integrity

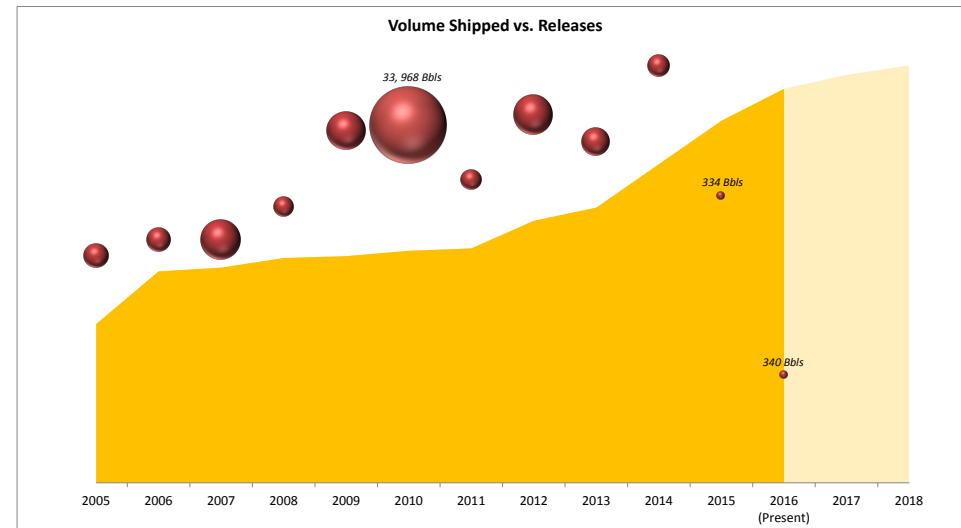


# The Path to Zero

What will it take to get to zero?



Continuous Improvement



# Continuous Improvement - People

## Enhancing How Work is Performed

### Human Factors

- Learning from other industries (aviation, nuclear, petrochemical, medical)
- CSA EXP248 - *Pipeline Human Factors*
- Banff Pipeline Workshop Human Factors Working Group
- Pipeline Research Council International (PRCI) Human Factors roadmap and international collaboration

### Competency Enhancement

- Industry standards (e.g. API 1163)
- PRCI NDE project

### Organization Specific

- Knowledge transfer
- Human Factors focus area
- 3 – Beyond training programs



# Continuous Improvement - Process

## Beyond Minimum Standards

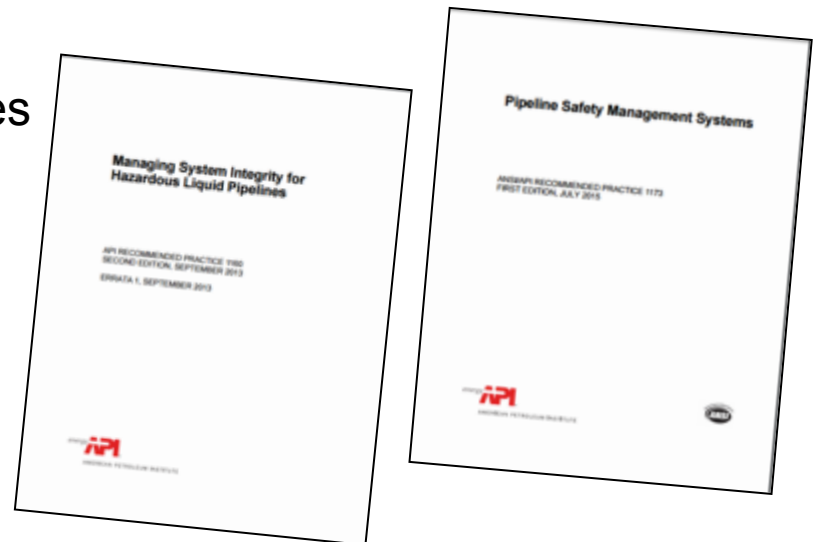
### Codes, Standards and Regulations

- Management Systems (e.g. API 1173; NEB Performance Measures)
- Technical guidance enhancement (e.g. API 1176)
- PHMSA regulation enhancement
- Canadian Energy Pipeline Association (CEPA) Integrity First



### Organization Specific

- Best Practice Analysis of Other Industries
- Reliability enhancement
- Integrity Targets
- Enhanced technology
- Enhanced analytics



# Continuous Improvement - Technology

Striving to continuously improve

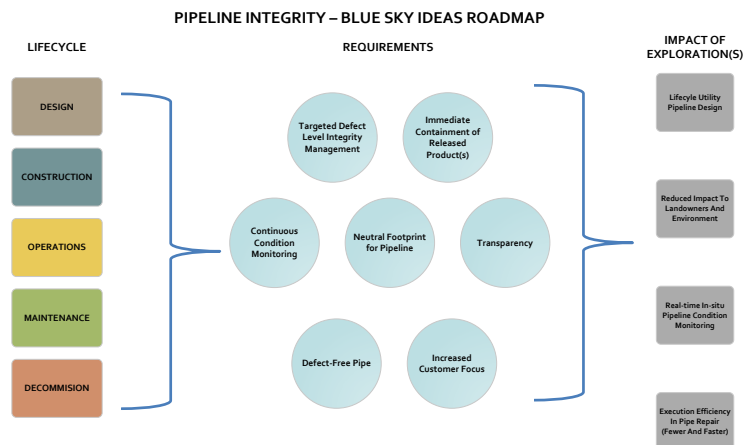
## Collaborative R&D

- PRCI
- Joint Industry Partnerships (JIPs)
- Academic Research Support (e.g. NSERC projects)
- PHMSA R&D program



## Organization Specific

- Crack ILI tool enhancement – next generation crack tool development
- R&D commitment/spend
- Blue Sky projects



# How can we reach Zero?

## We Still Have More to Do

### Industry Improvement

- Greater level of collaboration
- Greater level of industry data sharing
- Greater transparency
- Better industry level measurement and evaluation

### Organization Specific

- Human Factors - next level
- Technology Improvement and R&D – continuous activity
- Measurement of effectiveness of Continuous Improvement items