Provide a suite of performance metrics to objectively and meaningfully convey pipeline operator performance

Define a framework for creating meaningful leading indicators

Define common terms and severity thresholds for pipeline performance

Requirements that drive continual improvement of performance
Overview

• The role of metrics in managing Anything safely
• Necessity of a Standard
• Scope of the Standard
• CSA Z260
  – Approach
  – Application
  – Continual Improvement
Why do safety metrics even matter?

- Demonstrated Performance
- Policy Statement – what gets measured must get done
- Benchmarking – peer pressure and inspiration
- Process Safety – it’s the “check” in PDCA
- Driver of continual improvement
- Crystal ball?
What Makes a Standard Necessary?

• Public Interest
• Transparency and Accountability
• Reporting Overload
• Common Interests; Different Approaches
• Reinforcing Legal Requirement and Recognized Best Practice
• Large Task Force representing Regulators, Industry Associations, Producers, Midstream, LDCs, Academia – Canadian and US

• Balanced Matrix

• System view - applies to:
  – Hydrocarbon Gathering and Transmission “Pipelines”
  – Liquid Hydrocarbon Storage Tanks
  – Pipelines for Oilfield water and Waste

• Out of Scope
  – Local Distribution of Natural Gas (not yet)
  – Production Facilities/Platforms
CSA Z260 – The Approach

- Performance in terms of releases (loss of primary containment)
- Align with API RP 754 and describe how to apply broadly across the pipeline industry.
- Bowtie (Safety Barrier) Approach to defining meaningful leading indicators
CSA Z260 – The Application

- Process Safety view
- Metrics developed based on failure pathway

Threat $\rightarrow$ LoPC $\rightarrow$ Consequence (Tier 1-2 event)

- Tier 3 are barriers that failed
- Tier 4 are behaviours that caused the failure
CSA Z260 and the Management System

- Enabler of Process Safety
- Continual improvement through analysis and learning from incidents
- A way to Define
  - Investigation Requirements
  - Tracking, Trending and Analysis
  - Discretionary Reporting (upward, outward)
  - Benchmarking
- Focus on having sufficient incidents to learn from
Closed Thoughts

Trustworthy Data

Standardization of Incidents

Management System

Continual Improvement