

CSA Z260

Pipeline Safety Metrics



- 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

- 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?

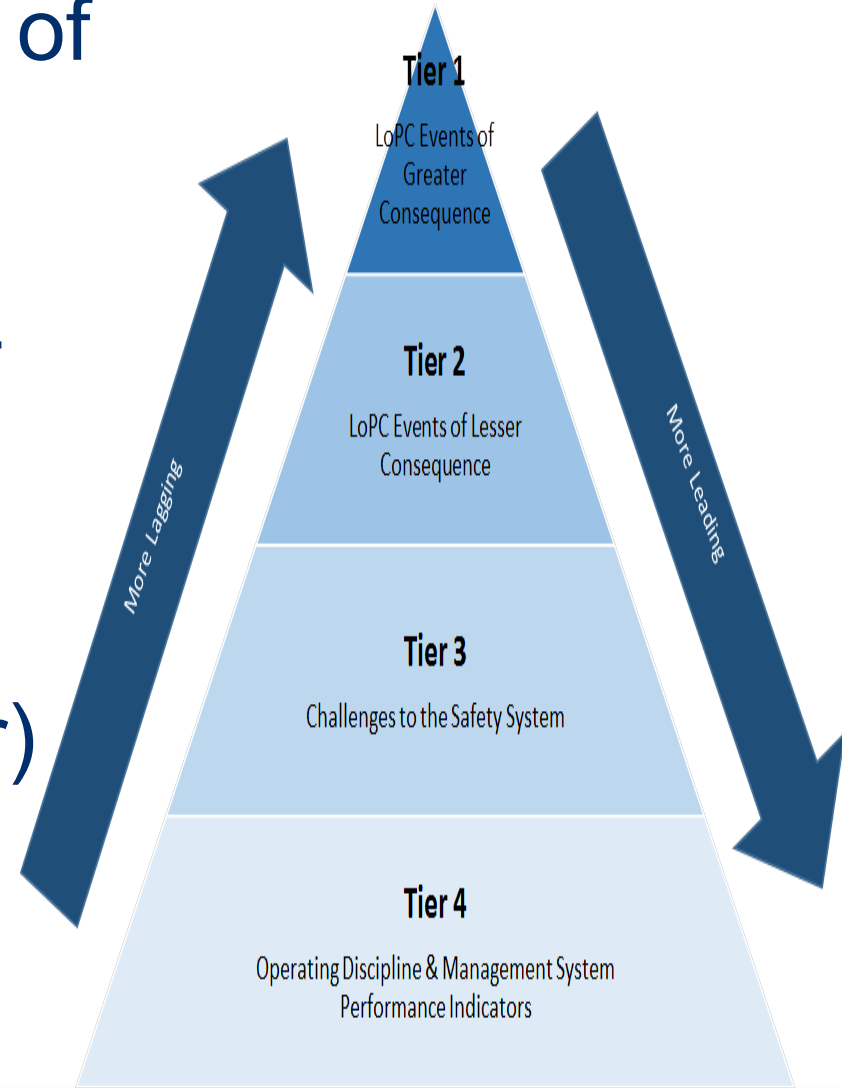
What Makes a Standard Necessary?

- 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

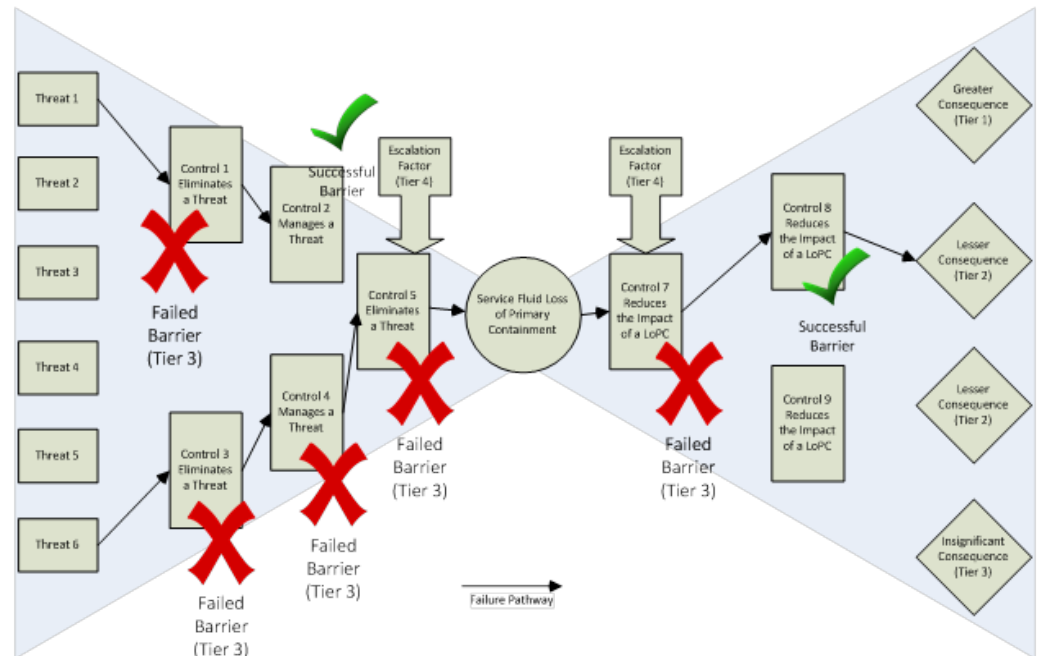
- Performance in terms of releases (loss of primary containment)
- Align with API RP 754 and describe how to apply broadly across the pipeline industry.
- Bowtie (Safety Barrier) Approach to defining meaningful leading indicators



CSA Z260 – The Application

- Process Safety view
 - Metrics developed based on failure pathway
- Threat  LoPC  Consequence (Tier 1-2 event)

- Tier 3 are barriers that failed
- Tier 4 are behaviours that caused the failure



- 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



