Agenda

- Who is CSA Group?
- What is the value of standardization?
- How is a standard developed, and by whom?
- How can the public get involved?
- When does a standard become enforceable?
- Which CSA standards are related to oil & gas pipeline safety, and who uses them?
• Established in 1919
• Private, not-for-profit
• Member-based

Consumer Product Evaluation

Standards

Product Certification & Testing
CSA Standards

- Accredited in Canada and U.S.
- Partner with industry, regulators, government, academia and consumers
- Members volunteer their time and develop standards
- Reputation as honest broker (e.g. accredited process, consensus approach)
- Experience with sensitive topics (e.g. Privacy, Nuclear Safety, Mental Health)
- Major role in emerging technologies (e.g. Electric Vehicles, Nanotechnology)
- Offer training, education and certification to over 6,000 people per year
CSA members develop standards content; staff facilitates the accredited development process

Decisions are made by consensus and balanced stakeholder representation

Committee members are selected to represent various interest groups most likely to be affected by the standard
Standards Development Process

- Project Proposal
- Assign to Committee
- Notice of Intent
- Meetings/Draft

Public notification

- Public Review
- TC reaches consensus
- Technical Approval (vote)
- Publication

Public notification

Public notification

Maintenance

During this stage the public can:
- submit suggestions for change
- request an interpretation of a requirement
Petroleum & Natural Gas Program

Program Areas

- Security Management
- Emergency Preparedness & Response
- Damage Prevention
- Well Design
- Emissions
- Liquefied Natural Gas
- Coatings for Steel Pipe
- Pipeline Materials
- Storage of Hydrocarbons in Underground Formations
- Land Use Planning for Pipelines
- Oil & Gas Pipeline Systems
Pipeline Standards in Canada

- Canada operates some of the safest pipelines in the world because pipelines need to meet rigorous technical standards
- CSA standards are continually reviewed and updated to incorporate technological advancements and best practices
- Z662 contains 500+ pages of prescriptive and performance-based technical requirements
- Z662 takes a lifecycle approach; it covers the design, construction, operation and maintenance of pipelines, along with requirements for safety management systems
Z662 Technical Committee (TC)

- Over 250 expert volunteer committee members
- Membership includes a balanced matrix:
  - suppliers
  - fabricators
  - transmission users
  - distribution users, general interest groups
  - regulators at the federal and provincial levels
- There are 10 Technical Subcommittees (TSCs) with various working groups under each of these TSCs
- TC and TSC representatives participate internationally at ISO TC67/SC2
• In Canada, federal and provincial pipeline regulations incorporate the Z662 Standard by reference, thus giving it the force of law

• Z662 is referenced by oil and gas pipeline and facility regulators, including:
  – National Energy Board (for pipelines crossing provincial or international borders), and
  – Ontario, British Columbia, Alberta, Saskatchewan, Manitoba, Quebec, New Brunswick and Nova Scotia
The timing of regulatory adoption following publication varies between regulators

- NEB adopts Z662 upon publication, as do several provincial regulators. Other jurisdictions adopt after further review.

Regulators may choose to reference Z662 as published or with modifications through regulations, such as:

- In Ontario, TSSA adopts Z662 by reference, with amendments (e.g. additional clause on emergency communication meetings)

- Alberta and Saskatchewan require that the recommended leak detection requirements contained in Annex E of CSA Z662 are mandatory for liquid hydrocarbon pipelines
• CSA Z662 makes it **mandatory** for operator companies to have a Pipeline Integrity Management program
  
  ➢ Ensures integrity management is considered from a complete life cycle perspective

• Engineering assessments are required

• Conditions to be considered include:
  – Mechanical damage
  – Corrosion
  – Stress corrosion cracking
  – Coating damage
Two key standards in CSA’s portfolio cover security & emergency management for Canada’s oil and gas industry:

- Z246.1-13, *Security management for petroleum & natural gas industry systems*
- Z246.2-14, *Emergency preparedness and response for petroleum & natural gas industry systems*

The new Z246.2 helps organizations develop an emergency preparedness and response program to:

- provide greater safety for workers
- establish best practices that are consistent across Canada
- help protect people, property and the environment
Coatings

• Published the first CSA standard on coatings for steel pipe in 1986, and currently develop and publish a series of standards on plant-applied external coatings for steel pipe (Z245.20)

• In 2014, published a new standard on field-applied coatings

• Z245.30 was developed in response to industry needs to address the quality of anti-corrosion coatings applied in the field during pipeline construction and operations

✔ Provides guidance to minimize integrity-loss for pipeline systems
✔ Includes requirements for coatings for girth welds, valves and flanges
✔ Covers the repair of damaged plant-applied coatings in the field
Feedback from industry identified an immediate need for a document to provide guidance on human factors for the pipeline industry.

Work will commence this month, publication by Fall 2015.

The document will provide an overview of the tools and techniques for human factors assessment and mitigation along the lifecycle of a pipeline, and help establish benchmarks for human error:

- e.g. human-machine interface, SCADA automation systems in pipelines.
Damage Prevention – CSA Z247

• New CSA standard Z247, *Damage prevention for the protection of underground energy and utility networks*, will establish best practices around damage prevention

• Scheduled to publish in May 2015

• Offers standardized language and process to locate and mark underground infrastructure

• Scope includes excavation and backfilling, documentation, auditing, training and competency
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Thank You!

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