YPAC
CONNECTING PIPELINERS

Pipeline Regulatory Framework in Alberta
Outline

» Energy Context
» Regulatory Jurisdiction
» About the Alberta Energy Regulator (AER)
» AER Initiatives
Canada In World Context

2015 Crude oil and equivalent production (thousand barrels per day)

- United States: 12,704
- Saudi Arabia: 12,014
- Russia: 10,980
- Canada: 4,385 (Alberta 3,055)
- China: 4,309
- Iraq: 4,031
- Iran: 3,920
- United Arab Emirates: 3,902
- Kuwait: 3,096
Canada In World Context cont’d

2015 World estimated proved oil reserves (billion barrels)

- Venezuela: 300.9
- Saudi Arabia: 266.6
- Alberta: 166.8
- Iran: 157.8
- Iraq: 143.1
- Russia: 102.4
- Kuwait: 101.5
- United Arab Emirates: 97.8
Canada In World Context cont’d

2015 World natural gas production (Billion cubic feet / day)

- United States: 74.2
- Russia: 55.5
- Iran: 18.6
- Qatar: 17.6
- Canada: 15.8
- China: 13.3
- Norway: 11.3
- Saudi Arabia: 10.3
- Algeria: 8.0
- Indonesia: 7.3
- Malaysia: 6.6
- Australia: 6.5

Notes: Alberta 10.7
Alberta in Canadian Context

Oil & Equivalent Percentage of Production - Canada
- Rest of Canada: 3%
- Newfoundland: 5%
- Saskatchewan: 11%
- Alberta: 18%
- Alberta Bitumen: 63%

 Marketable Natural Gas Percentage of Production - Canada
- Rest of Canada: 1%
- Saskatchewan: 3%
- Alberta: 67%
- British Columbia: 29%
Government Jurisdiction

**Provincial Government**
- Ownership of energy resources
- Steward of energy and mineral resources and development
- Development of energy policy
- Royalties and taxes
- Energy regulation

**Federal Government**
- Interprovincial/international pipelines (National Energy Board)
- Navigable waters/frontier lands
- Species at risk/fisheries/
- Federal energy and environment issues
- First Nation lands
Pipeline Regulators

» **National Energy Board**
  - Interprovincial or international pipelines
  - Majority transmission pipelines (large diameter and high pressure)

» **Alberta Utilities Board**
  - Low-pressure gas distribution networks (<700 kPa)

» **Alberta Energy Regulator**
  - Pipelines related to oil and gas development within province
  - Majority small diameter gathering pipelines
Pipeline Inventory (2017)

Pipeline length
- 422,682 km total length
- 311,537 km operating
- 61,001 km discontinued
- 50,144 km abandoned

Pipeline diameter (op)
- 64% < 168.3 mm
- 28% 168.3 to 273.1 mm
- 8% > 273.1 mm

Pipeline material (op)
- 84% Steel
- 9% Polyethylene
- 3% Composite
- 2% Aluminum
- 1.8% fiberglass

Pipeline licensed product (op)
- 62% Natural gas
- 12% Oil effluent
- 5% Sour gas
- 5% Fuel gas
- 4.7% Crude oil
- 3.5% Saltwater
The Alberta Energy Regulator

Mandate:

» To ensure the safe, efficient, orderly, and environmentally responsible development of hydrocarbon resources over their entire life cycle.

» This includes allocating and conserving water resources, managing public lands, and protecting the environment while providing economic benefits for all Albertans.
Pipeline Enactments

- Pipeline Act
- Pipeline Rules
  - Canadian Standards Association Z662
  - Directive 077
  - Directive 056
- Water Act
- Environmental Protection and Enhancement Act
- Public Lands Act
CSA Z662

Canadian Standards Association (CSA Group)
- Provider of testing, inspection, certification services and standards development.

Z662-15: Oil and Gas Pipeline Systems
- Standard covers design, construction, operation, maintenance, deactivation, and abandonment of oil and gas industry pipelines that convey liquid hydrocarbon, oilfield water, gas.

Safety and Loss Management System (SLMS)

Integrity Management Program (IMP)
Safety and Loss Management System

» Is a systematic, comprehensive, and proactive process for the management of safety and loss control associated with activities throughout the life cycle of a pipelines.

Pipeline Incidents (2007 – 2016)

- Latent Conditions
- Low Consequence (Near Misses)
- High and Medium Consequence Incidents
- Major Incidents

1 Approximate as "Major Incidents" not defined...
Safety and Loss Management System

» **Elements include:**
  - Clearly articulated policy and leadership commitment
  - Organizational structure w/ well defined responsibilities
  - Process for management of resources
  - Int/ext communication process
  - Document and records management process
  - Operational controls
  - Process for management of change
  - Process of continual improvement
Surveillance and Enforcement

- Inspections and audits
- Detailed operations & construction inspections (proactive)
- Incident inspections & reviews (reactive)
- Manual 005: Pipeline
- Notice of noncompliance
- Noncompliance triage
- Assessment process
- Investigation process
- Enforcement tools
Pipeline Performance

» Pipeline Performance Report (issued February 2017)
Regulatory Campaigns

AER Bulletin 2015-34

• Described amendment to pipeline licence transfer application process to require written confirmation records have been transferred.
• Lessons learned from investigations/inspection findings (contributing factor).
• Intended to ensure transfer of records occurs before transfer approved.
• Outcome based as onus on industry to follow rules and manage risks.
Regulatory Campaigns cont’d

AER Bulletin 2016-22
- Described importance of developing and maintaining an effective leak detection program.
- Lessons learned from investigations/inspection findings (contributing factor).
- AER recommended increase focus on pipeline systems monitoring and training.
Regulatory Campaigns cont’d

» AER Bulletin 2017-08

- Described implementation of AER’s program to evaluate the effectiveness of SLMS.
- Lessons learned from investigations/inspection findings (contributing factor)
- Under program selected licences asked to complete self-assessment and declaration form to assist the AER in its evaluation of licensee’s SLMS.
Integrated Decision Approach

» The AER is building an integrated and risk-informed approach to energy development and regulation.

» As part of this approach, the AER has implementing a new online process for pipeline licence applications.

» More information about the AER’s integrated decision approach can be found on AER.ca.
Pipeline Information

» **Product Catalogue**
  • Base Plan Maps (GIS shape files)
  • Reportable releases/pipelines hits data

» **ST96: Pipeline Approval and Disposition Daily List**

» **ST100: Pipeline Construction Notification List**

» **Compliance Dashboard**
  • Incidents
  • Investigations
  • Compliance and enforcement