Risk Reduction in Oil Transportation in the Great Lakes Region

Great Lakes and St. Lawrence Cities Initiative

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Who is CEPA?

The **Canadian Energy Pipeline Association** (CEPA) represents Canada’s transmission pipeline companies who operate about 130,000 kilometres of pipeline in Canada and the United States.

VISION

A safe, socially and environmentally sustainable energy pipeline industry for Canadians.

MISSION

Continually enhance the operating excellence, business environment and recognized responsibility of the Canadian energy transmission pipeline industry through leadership and credible engagement between member companies, governments, the public and stakeholders.
CEPA members

- Access Pipeline Inc.
- Alliance Pipeline Ltd.
- ATCO Pipelines
- Enbridge Pipelines Inc.
- Inter Pipeline Ltd.
- Kinder Morgan Canada
- Pembina Pipeline Corporation
- Plains Midstream Canada
- Spectra Energy
- TransCanada PipeLines Limited
- TransGas Limited
- Trans-Northern Pipelines Inc.
Over 800,000 km of pipelines

<table>
<thead>
<tr>
<th>Function</th>
<th>Gathering</th>
<th>Feeder</th>
<th>Transmission</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Move crude and natural gas from well heads to oil batteries and natural gas processing plants</td>
<td>Transport crude and natural gas from batteries, processing facilities and storage tanks to transmission pipelines</td>
<td><strong>Energy highways transporting crude oil and natural gas within and across provincial or international boundaries</strong></td>
<td>Deliver natural gas to homes, businesses and industries</td>
</tr>
<tr>
<td>Network</td>
<td>250,000 km</td>
<td>25,000 km</td>
<td><strong>115,000 km</strong></td>
<td>450,000 km</td>
</tr>
<tr>
<td>Location</td>
<td>Mostly AB</td>
<td>Mostly AB</td>
<td><strong>50% AB, 23% SK, 13% ON, 8% BC</strong></td>
<td>Across Canada</td>
</tr>
<tr>
<td>Operator</td>
<td>Producers</td>
<td>Producers, pipeline companies</td>
<td><strong>Pipeline companies</strong></td>
<td>LDCs or provincial cooperatives (AB)</td>
</tr>
<tr>
<td>Regulator</td>
<td>Provincial</td>
<td>Provincial</td>
<td><strong>Provincial and Federal</strong></td>
<td>Provincial</td>
</tr>
</tbody>
</table>
Canadian Crude Oil Facts
- Production: 3.5 million barrels/day
- Exports: 2.6 million barrels/day
- Value of Exports: $75 billion
2013 data
Canadian Natural Gas Facts
- Production: 14.1 billion cubic feet/day
- Exports: 7.8 billion cubic feet/day
- Value of Exports: $11.2 billion
2013 data
Pipelines are critical infrastructure
Socio-political context

Unprecedented public and stakeholder interest, resistance and mistrust

Frustration and misinformation as a result of global challenges: climate change, population and energy needs

Heightened public sensitivity

Concerns about risk and environmental impact about industrial facilities
Trust - a critical cornerstone

CREDIBILITY + RELIABILITY + INTIMACY

= SELF INTEREST

CREDIBILITY = Technical competence/expertise
RELIABILITY = Perceptions of dependability, consistency and predictability
INTIMACY = Closeness and depth of the relationship/mutual understanding
SELF-INTEREST = Perceived or real: focus on personal gain/power/glory
Getting to zero incidents

ACCOUNTABILITY, PERFORMANCE AND EXECUTION

Leadership and governance

CEPA Integrity First® management systems and operating practices

Safety culture

Technology and innovation

Continual improvement leading to zero incidents
CEPA Integrity First®

**IMPRESS TRUST AND CONFIDENCE IN THE INDUSTRY**

**PERFORMANCE:**
- defining & implementing best practices for pipeline safety.
- providing environmental protection & socio-economic benefits

**ZERO INCIDENTS:**
- Reaching pipeline companies' goal of zero incidents.

**ACCOUNTABILITY:**
- challenging each other’s safety, environmental and engagement practices.
- ensuring transparency and accountability.

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Principles and priorities

Ensuring safe communities and workplaces

Minimizing the impact on the environment and biodiversity throughout every phase of pipeline operations

Creating lasting social and economic benefits to communities, regions and countries where we operate

PRIORITIES
- Worker safety
- Damage prevention
- Emergency management
- Pipeline integrity
- Control room management
- Public awareness

PRIORITIES
- Land management
- Air emissions
- Water impacts
- Wildlife
- Noise

PRIORITIES
- Land use and access
- Economic benefits
- Aboriginal relations
- Workforce
Safety culture

MINDSET – THE GOAL IS BEYOND COMPLIANCE

• Leadership
• Reward success, investigate failure
• Information is actively communicated
• New ideas
• Learning and training is ongoing and continuous
• Employees are empowered and accountable for safety
Technology and innovation

CANADA IS #2 IN PIPELINE RESEARCH ACTIVITY

Pipeline needs and opportunities:
- Performance improvements
- Public trust and market access
- Efficiencies
- Regulatory readiness for new technologies
Current projects

Guidance documents and practices completed/underway:

- ✔ Pipeline Integrity
- ✔ Emergency Management
- ✔ Control Room Management
- ✔ Water Impacts
- ✔ Damage Prevention
Current projects

- Mutual Emergency Assistance Agreement signed
- Adoption of Incident Command System (ICS) to ensure interoperability
- CEPA Joint Industry Emergency Response Exercise
- New CSA Standards for Emergency Management
- Emergency Response Plan (ERP) Transparency
Current projects

**Watercourse Crossing Guidelines**
- 5th edition under review
- NEB responsible for assessing potential impacts on fisheries for NEB regulated projects
- Guidelines (PAWC) applies to new crossings under DFO authority
- New guidelines will improve self-assessment process

**Royal Society Research Study**
- CEPA and CAPP are co-sponsoring an independent science-based study to better understand behavior of crude types
- Results to inform spill preparedness and response capabilities
- Study done by the Royal Society of Canada
- Report published in Fall 2015
Concluding thoughts
Questions?

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Canadian Energy Pipeline Association

For more information:
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Pipeline industry vitals

- Over 60 years in Canada
- Highly regulated industry
- Transports 97% of the natural gas and onshore crude oil produced in Canada
- ~130,000 kilometres of pipeline in Canada and the U.S.
- Safe and environmentally sound
Safety performance

SIGNIFICANT INCIDENTS ARE RARE

- Absolute number of incidents are low
- From 2002-2013 there was an average of 3.75 significant incidents/year*

Definition of a significant incident

- A serious injury or fatality
- A liquid release of great than 50 barrels of product (8m³)
- An unintentional ignition or fire
- A line break

[Note: * when considering liquids alone, it becomes 2.0 significant incidents/year]
Safety focus throughout lifecycle

1. Planning: Careful design and route selection in accordance with industry leading standards and government regulations. Learn more.

2. Construction: Meticulous construction techniques and procedures that protect every kilometre of pipe. Learn more.

3. Operation: Monitoring, maintenance and inspection practices that ensure safe, environmentally responsible and reliable service. Learn more.

4. Emergency response: Established practices and procedures to manage any emergency situation and mitigate its environmental effects. Learn more.