

A large, dark grey pipeline runs through a forest, supported by several tall, dark brown metal pillars. A dirt road runs alongside the pipeline, and the sky is filled with white and grey clouds. The text 'UNECE Safety Guidelines and Good Practices for Pipelines' is overlaid in large white font on the left side of the image.

UNECE Safety Guidelines and Good Practices for Pipelines

Claudia Kamke, UNECE Industrial Accidents Convention secretariat

15th International Forum on Industrial Safety

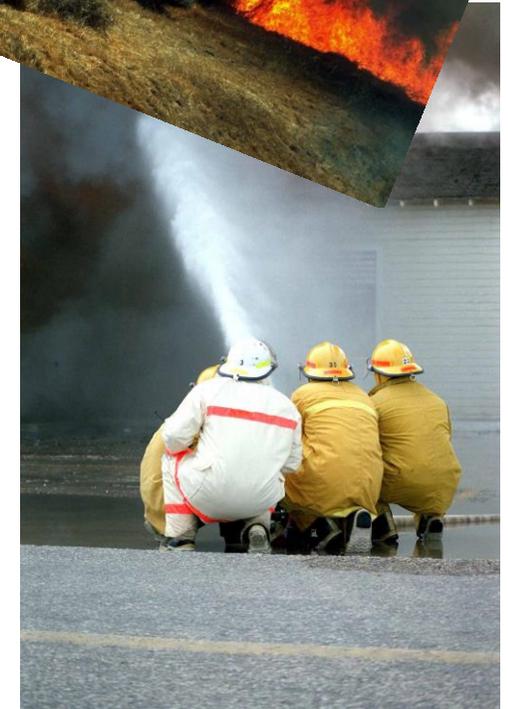
St. Petersburg, 31 May 2017

Why do we need Safety Guidelines for pipelines?

- Pipelines are generally a **practical, economic, and safe** means of transport for large volumes of hazardous substances
- **Crude oil** and **natural gas** dominate pipeline transport
- **Consumption** of crude oil and natural gas **is on the rise**
- When pipeline accidents take place they may have a significant impact on:
 - **Human health**
 - **Soil**
 - **Water**
- Most pipelines are **transboundary** and accidents often require an **efficient, coordinated emergency response** from two or more countries

Pipeline accidents in the UNECE Region

- **1965, Canada**
 - LaSalle Heights Gas Line Disaster
- **1989, Russian Federation**
 - Ufa Train Wreck / Gas Line Explosion
- **2004, Belgium**
 - Gislenghien (Ath) Gas Line Explosion
- **2007, Belarus**
 - Daugava River Oil Spill
- **2009, France**
 - Coussouls de Crau Oil Underground Oil Spill
- **2010, United States**
 - Kalamazoo Oil Spill
- **2015, Kazakhstan**
 - Zelenovsky District Gas Line Explosion



Causes of pipeline accidents

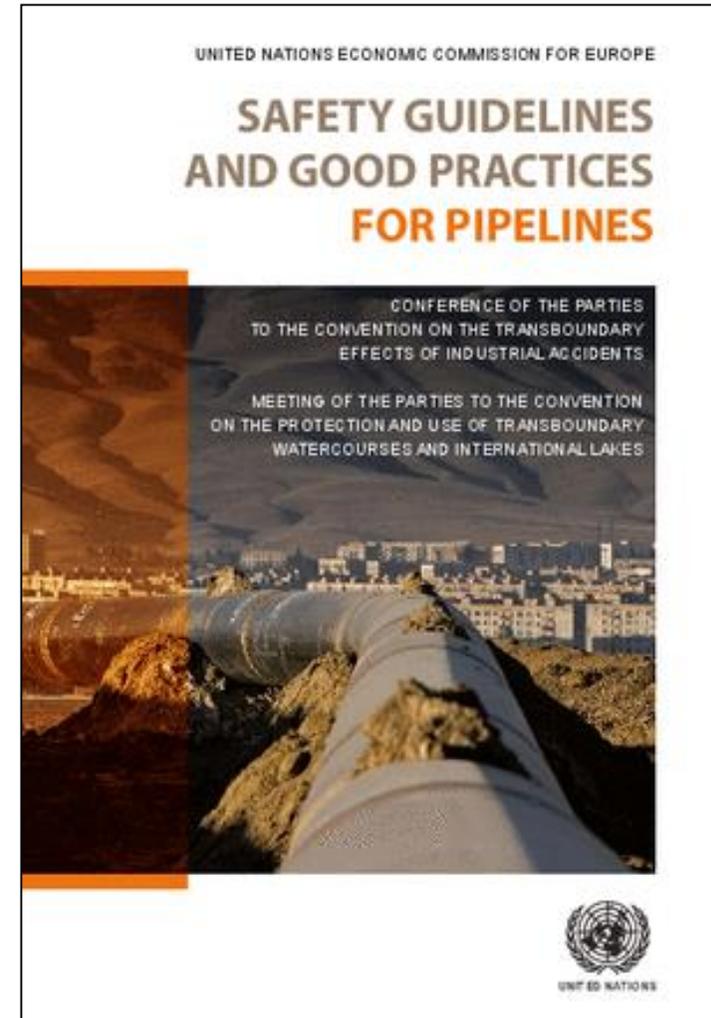
- Excavation
- Natural Disaster
- Materiel or Weld Failure
- Corrosion
- Equipment Failure
- Third Party Interference



**ROOT CAUSE:
NEGLECT OF RISK ANALYSIS AND RISK MANAGEMINT**

About the Safety Guidelines

- **Jointly developed by UNECE countries** under the Industrial Accidents Convention and the Water Convention
- **Endorsed by the governing bodies** of the Water and Industrial Accidents Conventions in 2006
- **Authorities and pipeline operators** are invited to apply the guidelines and good practices to limit the number of pipeline accidents



About the Safety Guidelines

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- Principles For Pipeline Safety
- Recommendations
 - Recommendations to UNECE countries
 - Recommendations to competent authorities
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Key Recommendations for Operators

Pipeline Operators...

- Have the primary responsibility for **ensuring safety and preventing accidents** throughout the lifecycle of the pipeline
- Design/construct/operate pipelines **in accordance with national and international codes and standards**
- **Consider all aspects of safety** including design and stress factors, quality of materials, wall thickness, depth of burial, external impact protection, corrosion, markings, route selection, and monitoring
- **Undertake hazard/risk assessment**
- Draw up and implement **internal emergency plans** and ensure these are reviewed, tested, revised, and updated at suitable intervals
- Should implement systems to **reduce third-party interference**

Key Recommendations for Operators

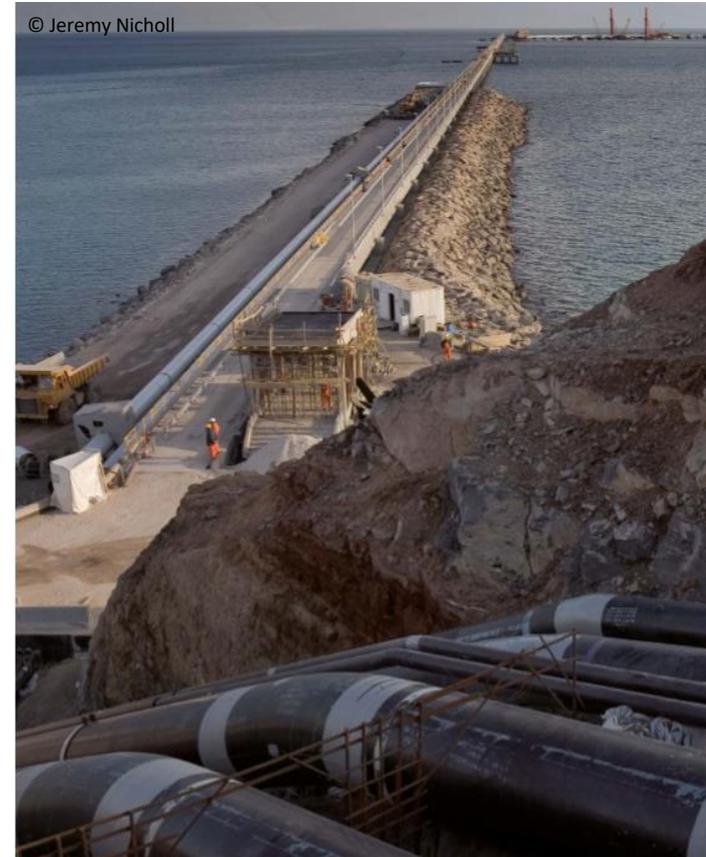
Pipeline Operators...

- Should draw up a document establishing the **pipeline management system (PMS)** and ensure that it is properly implemented
- **Demonstrate** to the competent authority **that the PMS is in place**
- **Establish performance indicators** for monitoring the PMS



Annex – Technical and Organizational Aspects

- Design and Construction
- Construction and Testing
- Pipeline Management System
- Emergency Planning
- Inspection
- Hazard / Risk Assessment and Land Use Planning



Key Recommendations for Competent Authorities

- Ensure that land-use policies are in place to **prevent and limit the effects of accidents**
- Set up **appropriate consultation procedures**
- **Carry out a permitting process** for new pipelines
- Set up a **system of inspections** for pipelines
- **Draw up and implement external emergency plans and ensure their review, testing, revision, and update**
- **Prevent third-party interference**, e.g. by ensuring that information about the location is shared between stakeholders

Key Recommendations for UNECE Countries

UNECE member countries should:

- **Adopt policies for safe transport** of hazardous substances in pipelines
- **Raise awareness** and **share experiences** and **good practices**
- **Define a level of safety** at least consistent with the ECE safety guidelines
- Develop **clear, enforceable, and consistent national legislation**
- **Establish a system of permits and land-use planning procedures**
- **Designate competent authorities at the national, regional, or local level**

Thank you for your attention!

For more information please visit:

www.unece.org/env/teia

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