

### N737: Oil and Gas Transport

# Format and Duration

Instructor(s): Prof. David Newman

Classroom - 3 Days

### Summary

This course provides a detailed and comprehensive understanding of the types and methods by which hydrocarbons are transported around the world. Specifically it looks at hydrocarbon transport by Pipelines, Road Tanker, Rail and Marine Vessels.

Of particular importance is that each of the methods presented, discussion will be made on the specific risks that each transport method will be exposed to – those risks extend from the design, construction, operations phases as well as those incurred during an inspection and maintenance programme.

In addition, this course will also provide delegates an insight into logistics and supply chain exploring the complex interfaces between all parties involved which carry their own risks in terms of shipping oil and gas cargoes globally – the impact of shipment delays, cross border custom delays, non- compliant documentation, contracts, resource shortages - all contribute to a detrimental 'cause and effect' for both shipping operators/owners with respect to their end user.

### Learning Outcomes

Participants will learn to:

- 1. Describe various types of oil and gas transport systems, including pipelines, road tankers, rail, and marine vessels.
- 2. Discuss legislative and regulatory compliance governing oil and gas transport, including SOLAS, MARPOL, ISGOTT, and INCO Terms.
- 3. Assess the risks associated with oil and gas transport, focusing on design, construction, operations, environmental impact, and geopolitical factors.
- 4. Understand the role of oil and gas transport in the global energy supply chain.
- 5. Evaluate the logistics and risks associated with the supply chain, including sensitivities in the global oil and gas market such as geopolitical issues, cyber threats, market volatility, communications, and documentation.
- 6. Understand the influences that supply chain disruptions can affect energy security and pricing and developing strategies for risk mitigation.
- 7. Explore Emergency Response Planning (ERP) for managing oil and gas leaks and spills, including the development of ERP and crisis management simulations.

# Training Method

This is a classroom course consisting of lectures, videos, discussions sessions, case studies and course assessments.

# Who Should Attend

The course is intended for asset engineers and managers, shipping managers, logistics and procurement



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specialists, HSE engineers and managers, emergency response and crisis management. Including those working in operational roles related to road, rail, pipeline, vessel operators, terminal operations, regulatory roles including environmental specialists, port authorities and energy related roles in banking, insurance, investors, risk specialists.

# **Course Content**

#### Part 1

### Introduction to Oil and Gas Transport Systems

- Overview of oil and gas transport systems in the energy market
- Oil and Gas transport systems pipelines, road, rail, marine vessels
- Regulatory & Compliance Frameworks (IMO, MARPOL, SOLAS, OPEC, etc.)
- Oil and Gas transport systems design, construction and operations
- Introduction to oil and gas shipping risks and associated failures cause and consequences
- Strategies for risk mitigation

Case Studies & Exercises

#### Part 2

# Oil and Gas – The Risks

- Key players in oil and gas transport the operators, owners
- Threats and hazards associated with pipelines types of failure and consequences of pipeline failures
- Threats and hazards associated with road tankers types of failure and consequences of pipeline failures
- Threats and hazards associated with rail cars types of failure and consequences of pipeline failures
- Threats and hazards associated with marine vessels types of failure and consequences of pipeline failures
- Threats and hazards associated with LNG Transport & Cryogenic Handling
- Looking at the consequences of failures:
  - Environmental Hazards (Spills, Leaks)
  - Geopolitical Risk
  - Technical & Mechanical Failures

Case Studies & Exercises

#### Part 3

# Logistics and Supply Chain Risks



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- Risks associated with the Global Supply Chain Risks in Oil & Gas:
  - Cross border transits
  - Customs and Documentations
  - GeoPolitical & Economic Disruptions
  - Cybersecurity Threats
  - Market Volatilities
  - Regulatory Compliance
  - Operations
- Managing the Risks Best Practice
  - $\circ$  Contractual
  - Legal Risk Management

Case Studies & Exercises