Introduction to Hydrogen Pipeline Integrity

Pipeline Integrity Institute, within the Faculty of Applied Science at the University of British Columbia, is excited to host a two-day short course on Hydrogen Pipeline Integrity in Calgary from March 12-13, 2024, in partnership with The Competence Club.

This short course is taught by a well-known expert in this field and will cover energy transition and hydrogen pipeline integrity.

The Pipeline Integrity Institute has been, and remains, the leader in the provision of undergraduate pipeline engineering courses. It is the first institute in North America to provide such course content to engineering students.

pipeline.integrity@ubc.ca

Pipeline Integrity Institute

University of British Columbia

Course Location

Calgary, AB, Canada

Register Here

pipeline.integrity@ubc.ca

Pipeline Integrity Institute Partnerships & Sponsors

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Pipeline Integrity Institute

at the University of British Columbia

with

The Competence Club

Presents this short course on

Introduction to Hydrogen Pipeline Integrity

PIPELINE INTEGRITY INSTITUTE
INSTITUT D'INTÉGRITÉ DE PIPELINE

The Competence Club ...connects

INTRODUCTION TO HYDROGEN PIPELINE INTEGRITY

Day 1: March 12, 2024

TOPICS COVERED:

Role of hydrogen in the energy transition:

- History of hydrogen
- Properties of hydrogen
- Production of hydrogen (different colours)
- Hydrogen demand and use
- Requirement for hydrogen pipelines

Differences between hydrogen and natural gas pipelines:

- Code requirements (ASME B31.12, AIGA / EIGA Guidelines, TD1 Supplement, DVGW G409 etc.)
- Operational requirements (pressure, flow rates etc.)
- Risk consequences (hazardous radius, likelihood of explosion etc.)

Conversion of existing natural gas pipelines to hydrogen:

- Code guidance
- Operational requirements
- Repurposing methodology

Effects of hydrogen on pipeline materials:

- Theory of hydrogen embrittlement
- Possibility of cracking (HIC)
- Effects on strength, ductility, fracture toughness, fatigue
- Implications for welds (seam and girth)
- Testing requirements / protocols

Day 2: March 13, 2024

TOPICS COVERED:

Defect assessment:

- Common defect types (crack-like defects, corrosion, dents, dent-gouges etc.)
- Data requirements to assess defects
- Assessment techniques (BS 7910, API 579 etc.) and hydrogen knock-down factors

Integrity management of hydrogen pipelines:

- Requirements for an Integrity Management System (IMS) for a hydrogen pipeline
- Comparison to IMS for a Natural Gas Pipeline

Introduction to integrity management of future fuels pipelines:

- Characteristic and threats associated with future fuels pipelines: CO2, Ammonia, LOHC, biogases
- Introduction to an Integrity Management System

Workshop

An interactive session on how to repurpose an existing gas pipeline applying the concepts discussed during the training sessions.

Presentations/Discussion

A brief presentation of workshop results as well as an opportunity for a wrap-up discussion covering the main aspects of the training event.

Neil Gallon Principal Materials and Welding Engineer
ROSEN Integrity Services, Newcastle upon Tyne, UK

Neil holds a Master's degree from the University of Cambridge and is a Chartered Engineer, a EUR.ING, a professional Fellow of the Institute of Materials, Minerals and Mining and an International / European Welding Engineer. He has over 20 years' experience in manufacturing and consultancy, including working for companies such as Tata Steel and GE. His current interests include the impact of gaseous hydrogen on materials and welds.

REGISTRATION

COURSE INFORMATION:
Scan QR code or visit:
https://pii.engineering.ubc.ca/education/short-courses/

REGISTRATION ENQUIRIES:
pipeline.integrity@ubc.ca

REGISTRATION FEES:

- $1000.00 CAD per attendee
- $100 CAD discount for:
  - PII Industry Partner companies
  - Companies registering 2+ employees

WHO SHOULD ATTEND?

All pipeline integrity personnel, including those new to the industry.
This course is especially suitable for pipeline engineers or managers looking to enhance their wider understanding of integrity management concepts and the implications of the new emerging fuel pipelines.

COURSE FORMAT?

This is a classroom-based course.

- **Date and time**: 12 - 13 March 2024, 08:30 - 16:30 MDT.
- **Course venue:** WOOD Centre, Calgary, AB, Canada.
- **Pre-Course Training (optional)**: The Competence Club offers four complimentary e-learns to help you acquire the required knowledge and enhance your skills for the course. The pre-course training takes 8 hours and is self-paced for your convenience.

COMING SOON

'Pipeline Defect and Threat Interaction in Pipeline Integrity Management - Industry Practices on Assessment and Mitigation'