



PB INSTITUTE OF RESEARCH AND TECHNOLOGY

P.O Box 21457-00100

Nairobi - Kenya

Mobile: +254 721 214 795

Email: info@pebblesinstitute.org

Advanced Pipeline Integrity Management Training Course

Duration: 10 days

On-Site

01 Who Should Attend

- This course is ideal for:
- Pipeline Engineers
- Integrity Specialists
- Operations Managers
- Inspection Engineers
- Corrosion Engineers
- Data Analysts in Pipeline Integrity
- Regulatory Compliance Officers

02 About the Course

Secure the longevity and safety of your pipeline assets with our **Advanced Pipeline Integrity Management Training Course**. This program is designed to equip you with the essential skills to implement sophisticated integrity management strategies, ensuring the prevention of failures and environmental incidents. In today's stringent regulatory landscape, mastering advanced pipeline integrity is crucial for organizations seeking to maintain operational excellence and public trust. Our **advanced pipeline integrity training course** provides hands-on experience and expert guidance, empowering you to apply cutting-edge techniques for real-world applications.

This **advanced pipeline integrity management training** delves into the core concepts of risk-based assessments, advanced inspection technologies, and integrity data management, covering topics such as in-line inspection (ILI), external corrosion management, and stress corrosion cracking (SCC). You'll gain expertise in using industry-standard tools and techniques to **advanced pipeline integrity management**, meeting the demands of modern pipeline operations. Whether you're a pipeline engineer, integrity specialist, or operations manager, this **Advanced Pipeline Integrity Management course** will empower you to drive proactive integrity management and protect your organization's assets.



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03 Workshop Objectives

- Understand the fundamentals of advanced pipeline integrity management.
- Master risk-based integrity assessment methodologies.
- Utilize advanced in-line inspection (ILI) technologies.
- Implement external and internal corrosion management strategies.
- Design and build robust pipeline integrity data management systems.
- Optimize integrity programs using advanced modeling and simulation.

04 Module Topics

Module 1: Introduction to Advanced Pipeline Integrity

- Fundamentals of advanced pipeline integrity management.
- Overview of advanced integrity concepts and methodologies.
- Setting up an advanced pipeline integrity framework.
- Introduction to advanced integrity tools and technologies.
- Best practices for advanced pipeline integrity implementation.

Module 2: Risk-Based Integrity Assessments

- Mastering risk-based integrity assessment methodologies.
- Utilizing quantitative and qualitative risk assessment techniques.
- Implementing risk modeling and simulation.
- Designing and building risk-based inspection plans.
- Best practices for risk-based assessments.

Module 3: Advanced In-Line Inspection (ILI)



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- Utilizing advanced in-line inspection (ILI) technologies.
- Implementing high-resolution magnetic flux leakage (MFL) and ultrasonic (UT) tools.
- Designing and building ILI data analysis workflows.
- Optimizing ILI for defect detection and sizing.
- Best practices for ILI.

Module 4: Corrosion Management Strategies

- Implementing external and internal corrosion management strategies.
- Utilizing cathodic protection and coating systems.
- Implementing chemical inhibition and monitoring.
- Designing and building corrosion management plans.
- Best practices for corrosion management.

Module 5: Integrity Data Management Systems

- Designing and building robust pipeline integrity data management systems.
- Utilizing geographic information systems (GIS) for data visualization.
- Implementing database management and data analytics.
- Designing and building data reporting and dashboards.
- Best practices for data management.

Module 6: Modeling and Simulation

- Optimizing integrity programs using advanced modeling and simulation.
- Utilizing finite element analysis (FEA) for stress and strain analysis.
- Implementing computational fluid dynamics (CFD) for flow modeling.
- Designing and building integrity simulation models.
- Best practices for modeling and simulation.

Module 7: Troubleshooting Pipeline Integrity



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- Troubleshooting and addressing common challenges in pipeline integrity.
- Analyzing inspection data and performance reports.
- Utilizing problem-solving techniques for resolution.
- Resolving common integrity implementation errors.
- Best practices for troubleshooting.

Module 8: Regulatory Compliance and Best Practices

- Implementing regulatory compliance and industry best practices.
- Utilizing ASME B31.8 and other relevant standards.
- Designing and building compliance reporting systems.
- Optimizing compliance monitoring and documentation.
- Best practices for regulatory compliance.

Module 9: Integration into Operations and Maintenance

- Integrating integrity management into operational workflows and maintenance programs.
- Utilizing integrity management systems (IMS).
- Implementing integrity in maintenance and repair operations.
- Designing and building integrated integrity programs.
- Best practices for integration.

Module 10: Large-Scale Integrity Programs

- Understanding how to manage large-scale pipeline integrity programs.
- Utilizing project management tools and techniques.
- Implementing program evaluation and reporting.
- Designing scalable integrity solutions.
- Best practices for program management.

Module 11: Advanced Integrity Applications



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- Exploring advanced integrity applications (digital twins, AI for predictive maintenance).
- Utilizing digital twins for pipeline simulation and monitoring.
- Implementing AI and machine learning for defect prediction.
- Designing and building advanced integrity systems.
- Optimizing advanced applications for specific use cases.
- Best practices for advanced applications.

Module 12: Real-World Integrity Use Cases

- Applying real world use cases for advanced pipeline integrity management in various pipeline types.
- Utilizing integrity management for offshore pipelines.
- Implementing integrity management for high-pressure gas pipelines.
- Utilizing integrity management for crude oil pipelines.
- Implementing integrity management for aging pipelines.
- Best practices for real-world applications.

Module 13: Advanced Integrity Tools Implementation

- Leveraging advanced pipeline integrity tools and frameworks for efficient implementation.
- Utilizing pipeline integrity management software and databases.
- Implementing advanced inspection data analysis tools.
- Designing and building automated integrity workflows.
- Best practices for tool implementation.

Module 14: Monitoring and Metrics

- Implementing pipeline integrity monitoring and metrics.
- Utilizing integrity performance indicators and KPIs.
- Designing and building monitoring systems for integrity projects.
- Optimizing monitoring for real-time insights.
- Best practices for monitoring.

Module 15: Future Trends in Pipeline Integrity



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- Emerging trends in advanced pipeline integrity technologies and applications.
 - Utilizing advanced sensor and monitoring systems.
 - Implementing robotic inspection and repair.
 - Best practices for future pipeline integrity.