MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

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OIL & GAS PIPELINES - SECURITY SYSTEMS & PLANNING

"Designing and Implementing Integrated Security Strategies for Critical Pipeline Infrastructure"

Schedule

Date	Venue	Fees (Face-to-Face)
10 - 14 Aug 2026	Dubai, UAE	USD 3495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training, In-House Training

Introduction

Pipelines are critical infrastructure in the oil and gas sector—spanning thousands of kilometers, often in remote or politically sensitive areas. These assets face increasing risks from sabotage, theft, terrorism, and cyber-attacks. A robust, well-integrated security system is essential to ensure the safe, uninterrupted operation of pipeline networks.

This course provides participants with the technical knowledge and strategic insight required to assess threats, plan risk mitigation, and design layered security systems. From surveillance and intrusion detection to physical barriers and response coordination, the training emphasizes proactive planning and technology-enabled protection of pipeline assets.

Objectives

By the end of this course, participants will be able to:

- Understand the risk profile and threat landscape of pipeline systems
- Evaluate and select appropriate physical and electronic security measures
- Design multi-layered security systems tailored to pipeline vulnerabilities
- Plan and coordinate emergency response and incident management
- Integrate cybersecurity considerations into pipeline protection
- Comply with international security standards and best practices

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Why Attend

- Gain a complete overview of pipeline security risks and countermeasures
- Learn to design integrated protection systems for pipeline segments
- Understand how to align security plans with operational realities
- Explore real-world case studies and incident responses
- Improve collaboration with law enforcement and emergency teams

Target Audience

This program is designed for:

- Pipeline security managers and safety officers
- Operations and infrastructure managers in oil & gas
- Emergency preparedness and crisis response professionals
- Facilities engineers and pipeline project planners
- Government and regulatory officials in energy security

Individual Benefits

Key competencies that will be developed include:

- Pipeline risk assessment and threat identification
- Design of physical and technical security layers
- Planning and execution of emergency response drills
- Integration of SCADA and cybersecurity protection
- Analysis of sabotage, theft, and incident case studies

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved protection of pipeline infrastructure and personnel
- Enhanced incident detection, reporting, and response capabilities
- Stronger regulatory compliance and stakeholder confidence
- Reduced downtime and losses from security breaches
- Better coordination with external responders and intelligence units

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Pipeline security frameworks and policy guidelines
- Case Studies – Notable pipeline incidents and post-event analysis
- Workshops – Security system design and vulnerability assessment
- Peer Exchange – Scenario-based group planning exercises
- Tools – Risk matrices, sensor selection guides, incident logs

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Course Outline

Training Hours: 7:30 AM – 3:30 PM Daily Format: 3–4 Learning Modules | Coffee breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Fundamentals of Pipeline Security and Threat Landscape

- Module 1: Introduction to Pipeline Security Risks (07:30 – 09:30) • Overview of global oil & gas pipeline infrastructure • Types of threats: theft, terrorism, sabotage, vandalism
- Module 2: Physical Security Measures and Infrastructure (09:45 – 11:15) • Fencing, lighting, patrol routes, access control points • Design considerations for remote and urban segments
- Module 3: Surveillance and Monitoring Technologies (11:30 – 01:00) • CCTV, thermal imaging, radar, aerial surveillance
- Module 4: Workshop – Risk Mapping for a Sample Pipeline (02:00 – 03:30) • Threat classification and vulnerability identification

Day 2: Detection Systems and Emergency Planning

- Module 5: Intrusion Detection Systems (07:30 – 09:30) • Sensors: acoustic, pressure, fiber optics, motion • False alarms and sensor calibration
- Module 6: Emergency Response and Escalation Planning (09:45 – 11:15) • Developing incident response protocols • Communication and authority escalation procedures
- Module 7: Stakeholder Coordination in Security Incidents (11:30 – 01:00) • Role of police, civil defense, regulators, and private teams
- Module 8: Workshop – Emergency Response Drill Plan (02:00 – 03:30) • Simulated scenario development and tabletop exercise

Day 3: Integrated Security Architecture and Controls

- Module 9: Designing Layered Security Systems (07:30 – 09:30) • Physical, electronic, and procedural defenses • Security-in-depth principles
- Module 10: Control Centers and Command Protocols (09:45 – 11:15) • Security monitoring centers, alarm integration, SOPs
- Module 11: Access Control and Personnel Safety (11:30 – 01:00) • Biometrics, badges, visitor management, staff protocols
- Module 12: Workshop – Build a Security Design Blueprint (02:00 – 03:30) • Design for a pipeline pump station or valve site

Day 4: Cybersecurity and SCADA System Protection

- Module 13: Understanding SCADA Vulnerabilities (07:30 – 09:30) • SCADA and ICS in pipeline operations • Threats from cyber-attacks and ransomware
- Module 14: Cybersecurity Strategies for Pipelines (09:45 – 11:15) • Network segmentation, firewalls, intrusion prevention
- Module 15: Incident Detection and Digital Forensics (11:30 – 01:00) • Anomaly detection and response frameworks
- Module 16: Workshop – Evaluate a Cyber Attack Scenario (02:00 – 03:30) • Response to a simulated SCADA system breach

Day 5: Advanced Strategies and Future Planning

- Module 17: Auditing and Benchmarking Security Systems (07:30 – 09:30) • Inspections, KPIs, checklists, maturity assessments
- Module 18: Future Trends in Pipeline Security (09:45 – 11:15) • Drone surveillance, AI detection, remote control systems
- Module 19: Legal, Environmental, and Insurance Considerations (11:30 – 01:00) • Liability, compliance, and environmental impact mitigation
- Module 20: Final Workshop – Create a Security Master Plan (02:00 – 03:30) • Security plan for a new or existing pipeline segment

Certification

Participants will receive a Certificate of Completion in Oil & Gas Pipelines – Security Systems & Planning, validating their expertise in identifying threats, implementing layered security systems, and designing comprehensive protection plans for pipeline infrastructure.

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Why Choose MAWA Events

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