

Modern Techniques for The Maintenance of Stationary & Rotating Equipment





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Course Objective

- Follow the requirements of industry inspection standards and practices
- ➤ Identify elements of safety of pressure vessels, storage tanks and pipelines
- > Apply diagnostics and inspection procedures to pressure equipment
- ➤ Analyze results of condition monitoring and vibration control of rotating equipment
- ➤ Plan and manage activities related to maintenance and repair



Target Audience

- ➤ Operation, technical service and maintenance professionals
- > Technical professionals responsible for maintenance and repair of equipment
- > Professionals involved in inspection and maintenance and repair
- ➤ Technical professionals dealing with risk assessment and integrity analysis
- > Technicians dealing with regulating and metering and other measurements





Course Outline

Stationary Equipment - Technical Characteristics & Operational Safety

- ➤ Above Ground Storage Tanks: Operation & Safety
- ➤ Pressure Vessels, Heat Exchangers and Steam Boilers
- ➤ Pipelines & Piping Systems: Operation & Safety
- ➤ Pressure Relief Valves: Selection & Sizing
- ➤ ASME BPV VIII & ASME B31.3 Standards and API Inspection Codes

Rotating Equipment - Operation, Efficiency & Safety

- ➤ Centrifugal Pumps: Maintaining NPSH and Prevention of Cavitation
- ➤ Reciprocating & Rotary Pumps
- Centrifugal Compressors: Anti-surge Control and Choke Conditions
- ➤ Reciprocating & Rotary Compressors
- ➤ Safety Issues, Troubleshooting and Problem Solving of Rotating Equipment

Diagnostics of Equipment Failure & Root Cause Analysis

- ➤ Material Degradation & Failures of Stationary & Rotating Equipment
- ➤ Failure Modes, Effects and Diagnostics Analysis (FMEDA)
- ➤ Diagnostics of Fatigue, Cracks, & Ruptures: Fitness For Service (FFS) Analysis
- ➤ Root Cause Analysis (RCA) of Failures
- ➤ Risk Management & Mitigation Technologies: ALARP Criteria

Inspection, Monitoring & Mechanical Integrity Evaluation

➤ Risk Based Inspection (RBI API 580) For Stationary Pressure Equipment (NDT)



- Pipeline Internal and External Corrosion Direct Assessment (ICDA & ECFA) Methods
- ➤ Pigging of Complex Onshore and Offshore Pipelines
- ➤ Rotating Machinery Condition Monitoring
- ➤ Vibration Analysis Including Rotor Balancing, Shaft Alignment Techniques

Maintenance & Repairs Organization & Management

- ➤ Storage Tanks: External & Internal Maintenance Techniques
- ➤ Cathodic Protection of Pipelines and Storage Tanks
- ➤ Coating & Thermal Protection
- ➤ Repair Technologies
- ➤ Summary and Conclusions
- ➤ The design of financial models for forecasting and decisionmaking

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The Cost Of The Training Program Includes The Following:

- 1) Scientific article on flash memory.
- 2) Training Room.
- 3) Training.
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Course schedule

- 1) Pick up & drop from the Airport
- 2) The training hours daily 6 hours
- 3) Theoretical and practical training as needed
- 4) Professional trainer from Malaysian Petroleum Company (Petronas) and other trainers.

Price (USD)

Communicate with the training department to know the participation fees

> There are offers and discounts for groups

The details of the bank account

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