DAY 1

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

DAY 2

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

DAY 3

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

DAY 4

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

DAY 5

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