



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



INP Valves



Course Introduction:

This course is designed to provide participants with comprehensive knowledge of the design, operation, inspection, and maintenance of industrial valves used in various sectors, including oil and gas, petrochemical, and manufacturing industries. Valves play a critical role in process control, flow management, and safety systems, making their proper handling and inspection essential for operational efficiency and risk mitigation.

This course covers the fundamental principles of valve types, their applications, common operational issues, and best practices for maintenance and troubleshooting. Participants will gain a deep understanding of how to ensure the reliability and performance of INP valves while staying informed about industry standards and emerging technologies.

Course Objectives:

By the end of the training, participants will be able to:

- Understand the design, functions, and classifications of INP valves.
- Learn about the various types of valves and their specific applications.
- Gain insights into valve selection criteria based on operational requirements.
- Develop expertise in valve inspection, maintenance, and troubleshooting.
- Stay updated on relevant industry standards and safety regulations.

Who Should Attend?

This course is designed for all:

- Maintenance Engineers and Technicians
- Plant Operations Managers
- Quality Control and Inspection Professionals
- Project Engineers and Supervisors
- Process Control Specialists
- Professionals involved in asset integrity and safety management

Course Outline:

Day 1: Introduction to INP Valves and Classification

- **Overview of Industrial Valves**

- Functions and importance of valves in process systems
- Key components of valves
- **Valve Classifications**
 - Linear motion and rotary motion valves
 - Pressure and temperature classifications
- **Common Valve Types and Applications**
 - Gate, globe, ball, butterfly, check, and control valves
 - Industry-specific applications

Day 2: Valve Design, Materials, and Standards

- **Valve Design Principles**
 - Flow control and pressure management
 - Key design features and specifications
- **Material Selection for Valves**
 - Metallic and non-metallic materials
 - Corrosion resistance and material compatibility
- **Industry Standards and Compliance**
 - API, ASME, and ISO standards
 - Understanding valve marking and certification

Day 3: Valve Operation and Control Systems

- **Manual and Automated Valve Operations**
 - Differences between manual and actuated valves
 - Types of actuators (pneumatic, hydraulic, electric)
- **Valve Control Systems**
 - Integration with control systems (SCADA and DCS)
 - Positioners and control accessories
- **Common Operational Issues**

- Causes of valve failures
- Strategies for operational efficiency

Day 4: Inspection, Maintenance, and Troubleshooting

- **Inspection Techniques for INP Valves**
 - Visual inspection and functional testing
 - Leak testing and pressure testing methods
- **Preventive and Predictive Maintenance**
 - Maintenance schedules and checklists
 - Lubrication and sealing practices
- **Troubleshooting Common Issues**
 - Diagnosing operational failures
 - Corrective actions and repairs

Day 5: Emerging Trends, Safety, and Best Practices

- **Technological Advancements**
 - Smart valves and IoT integration
 - Condition monitoring systems
- **Safety Considerations**
 - Safety protocols for valve handling and maintenance
 - Emergency shutdown systems (ESD)
- **Best Practices for Valve Management**
 - Lifecycle management strategies
 - Performance optimization techniques

Course Methodology:

A variety of methodologies will be used during the course that including:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play

- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session