

**Training Title**

**MAINTAIN AND TEST EMERGENCY SHUTDOWN VALVES**

**Training Duration**

**5 days**

**Training Venue and Dates**

<b>RM054</b>	<b>Maintain and test emergency shutdown valves</b>	<b>5</b>	<b>21-25 Oct, 2024</b>	<b>\$6,500</b>	<b>Amsterdam, Netherlands</b>
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**In any of the 4 or 5-star hotels. The exact venue will be informed once finalized.**

**Training Fees**

- \$6,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch.

**Training Certificate**

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

**TRAINING DESCRIPTION**

Emergency Shutdown Valves (ESVs) are critical components in industrial safety systems, designed to quickly shut off the flow of hazardous materials or fluids during emergency situations. Proper maintenance and testing of these valves are essential to ensure they operate effectively when needed. This course is designed to provide participants with the knowledge and practical skills required to maintain and test ESVs, ensuring their reliability and compliance with industry standards.

**TRAINING OBJECTIVES**

**By the end of the course, participants will be provided with the basic theoretical and practical understanding of:**

- **Understand ESV Fundamentals:** Gain a clear understanding of the function, design, and operation of Emergency Shutdown Valves.
- **Learn Maintenance Techniques:** Acquire effective strategies for routine and predictive maintenance, including disassembly, inspection, and component replacement.
- **Master Testing Procedures:** Learn to perform various tests on ESVs to ensure they function correctly under emergency conditions.
- **Develop Troubleshooting Skills:** Enhance your ability to diagnose and resolve common issues associated with ESVs.
- **Ensure Compliance:** Understand and apply industry standards and regulatory requirements related to ESVs.

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**Course Outcomes:**

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

- **Identify and Describe ESV Components:** Understand the components and functionality of ESVs and their role in safety systems.
- **Implement Maintenance Strategies:** Develop and execute maintenance plans, including routine inspections and predictive maintenance practices.
- **Conduct Effective Testing:** Perform various tests to verify the operational readiness of ESVs, including functionality, leak tests, and response time checks.
- **Troubleshoot and Diagnose Issues:** Utilize systematic troubleshooting methods to identify and correct faults in ESVs.
- **Comply with Standards and Regulations:** Apply relevant industry standards and regulatory requirements to maintain and test ESVs.

**WHO SHOULD ATTEND?**

- Maintenance Technicians
- Instrumentation and Control Engineers
- Process Engineers
- Safety Officers
- Operations Personnel
- Supervisors/Managers
- Quality Assurance/Control Personnel

**TRAINING METHODOLOGY:**

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and to share in the development of the right answers using your own analysis and experiences. Tests of the multiple-choice type will be made available on a daily basis to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Group Work& Practical Exercises
- 20% Videos& General Discussions

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## DAILY OUTLINE

### Day 1: Introduction to Emergency Shutdown Valves

#### 1. Introduction to Emergency Shutdown Valves (ESVs):

- Definition and Purpose
- Types of ESVs and Their Applications
- Importance in Safety Systems

#### 2. Components and Operation:

- Key Components (e.g., actuator, valve body, positioner)
- How ESVs Function in Emergency Situations
- Overview of Control Mechanisms and Interfaces

#### 3. Standards and Regulations:

- Industry Standards (e.g., API, IEC)
- Regulatory Requirements and Compliance

#### 4. System Documentation:

- Understanding Valve Specifications and Data Sheets
- Reading and Interpreting System Diagrams and P&IDs

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### Day 2: Maintenance Strategies for ESVs

#### 1. Preventive Maintenance:

- Developing Maintenance Schedules
- Routine Inspection and Cleaning Procedures

#### 2. Predictive Maintenance:

- Techniques for Monitoring Valve Health
- Using Diagnostic Tools to Predict Failures

#### 3. Maintenance Procedures:

- Disassembly and Reassembly of ESVs
- Lubrication and Parts Replacement

### Day 3: Testing Emergency Shutdown Valves

#### 1. Testing Principles:

- Importance of Regular Testing
- Types of Tests (e.g., Functionality, Leak, Response Time)

#### 2. Testing Procedures:

- Preparing for Testing
- Performing Functional Tests and Interpreting Results

#### 3. Simulated Testing:

- Testing of ESVs

#### 4. Analyzing Test Results:

- Identifying and Diagnosing Issues
- Documentation and Reporting of Test Results

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### Day 4: Troubleshooting and Fault Diagnosis

#### 1. Common Issues:

- Identifying Typical Problems in ESVs
- Causes and Effects of Common Faults

#### 2. Troubleshooting Techniques:

- Systematic Approach to Fault Diagnosis
- Using Diagnostic Tools and Instruments

#### 3. Case Studies:

- Real-World Troubleshooting Scenarios
- Group Discussions and Problem-Solving

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### Day 5: Advanced Topics and Practical Application

#### 1. Upgrades and Modifications:

- Managing Valve Upgrades and Replacements
- Ensuring Compatibility and Compliance

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**2. Advanced Testing and Maintenance:**

- Specialized Testing Methods
- Long-Term Maintenance Strategies

**3. Integration with Safety Systems:**

- Coordination with Emergency Shutdown Systems
- Ensuring System Integrity and Reliability

**4. Course Review and Final Assessment:**

- Recap of Key Concepts and Techniques
- Feedback and Certification

**NOTE:**

**Pre & Post Tests will be conducted.**

**Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.**



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