

Training Title

Inspect and Maintain Safeguarding Vent and Relief Systems

Training Duration

5 days

Training Date

ME556	Inspect and Maintain Safeguarding Vent and Relief Systems	5	12-16 Jan 2024	\$6,500	London, UK
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In any of the 5-star hotels. The exact venue will be informed of soon.

1. Events at Marble Arch

Central Cluster Meetings, Events and Group Sales - The Cumberland Hotel and Thistle Marble Arch

T. +44 (0) 207 523 5060

W. clermonthotel.group | A. Thistle Marble Arch, Bryanston St, Marylebone, London, W1H 7EH

Training Fees

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

Training Certificate

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

Language: English

COURSE DESCRIPTION

The course provides participants with the knowledge in:

- **Familiarize participants with the functions and applications of safety relief valves, their types, designs and components.**
- **Enable appropriate safety valve sizing and selection for liquid, gas and vapor applications**
- **Train participants to install, inspect, test & troubleshoot a variety of safety valves.**
- **To increase the participant's awareness and understanding that the mechanical integrity of relief valves depends jointly on the proper design, operation, condition assessment, and maintenance of the equipment.**
- **To provide the participants with a clear understanding of the degradation mechanisms that relief valves could be subjected to over their operating life,**

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how to identify them, predict and determine their impact, and what appropriate measures can be taken to prevent and control the resultant damage.

- To provide the participants with the knowledge and failure analysis skills they need to conduct damage and failure analysis so as to prevent similar failures from happening.
- To understand requirements of industry codes/standards and approval authorities.
- In-situ Testing Techniques – Onsite Testing of Safety Relief Valves.
- Emerging Technologies in Pressure Relieving Devices
- Use Valve Star / PRV size software for Safety Relief Valve Sizing & selection from Leser and CROSBY.

Who should attend?

- Engineers / Supervisors / Technicians from Maintenance Operations Department
- Maintenance Service Department and Inspection & Materials Technology Section.

Course benefits

This course also prepares delegates for the following certification scheme:

- **CERTIFIED PRESSURE RELIEF VALVES INSPECTOR**

Course outline

CHAPTER 1 - INTRODUCTION –SAFETY RELIEF VALVES

- History
- Pressure Relief Devices (ReClosing, Non- ReClosing)
- Reclosing Pressure Relief Devices
 - Pressure Relief Valves
 - Safety Valves
 - Relief Valves
 - Safety Relief Valve
- Non Reclosing Pressure Relief Devices
 - Rupture Disk
 - Breaking Pin devices
 - Buckling Pin devices
 - Shear Pin devices
 - Fusible Plug devices

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CHAPTER 2 - OVERPRESSURE PROTECTION

- Safety Relief Valves in a Process
- Causes of Overpressure (Blocked Discharge, Fire Case, Thermal Expansion
- Runaway Reaction, Tube Rupture in Heat Exchangers)
- Overpressure Protection Requirements

CHAPTER 3 - PRESSURE RELIEF VALVES – WORKING PRINCIPLE & COMPONENTS & SPECIFICATION

- Conventional Pressure Relief Valves
- Pilot Operated Pressure Relief Valves
- Balanced Bellow Pressure Relief Valves
- Power & Temperature Actuated Pressure Relief Valves
- Relief Vs Safety Valve
- Components & Accessories of Relief Valves
- Specifying Pressure Relief Valves

CHAPTER 4 - SAFETY VALVES – WORKING PRINCIPLE & COMPONENTS, SPECIFICATION

- Working Principle
- Classification (Actuation, Lift, Seat Design, lever, bonnet)
- Major Components / Accessories
- Locations
- Specifying Safety Valves

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HAPTER 9 - SAFETY RELIEF VALVE SELECTION

- Seat tightness
- Blowdown
- Service temperature
- Weight and/ or height
- Back pressure
- Orifice size – sizing
- Two phase flow
- Type of fluid
- Reciprocating compressors
- Liquid
- Materials

CHAPTER 10 - INSTALLATION

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- Inlet and outlet piping
 - Calculating piping losses
 - Calculating outlet piping
- Location of installed SRVs
- Reaction forces and bracing
- Temperature transmission on installed SRVs
- Installation guidelines

CHAPTER 11 - TESTING

- In situ testing of spring-operated SRVs
- In situ testing of pilot-operated SVs

CHAPTER 12 - MAINTENANCE

- Determining maintenance frequency and cost
- Transportation and dirt
 - Preinstallation handling and testing of the pressure relief valve
- Maintenance procedure (Pretest, Disassembly, Repair, Assembly & Testing)

CHAPTER 13 - TROUBLESHOOTING SRV'S

- Seat leakage
- Chatter
- Premature opening
- Valve will not open
- Valve open above set pressure
- Valve does not reclose
- Bellows failure
- Springs

CHAPTER 14 - NOISE

- Noise from SRV, open vent and associated pipe
- Noise Calculations by SRV Vendor

CHAPTER 15 - SPECIFYING SAFETY RELIEF VALVES

- Summary of overall requirements
- Materials, design, identification, inspection, testing, preparation and shipment

CHAPTER 16 - LOW PRESSURE PROTECTION DEVICES

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- Breather valves
- Emergency vents
- Pilot valves
- Tank blanketing
- Recap and Q&A
- Examination

COURSE METHODOLOGY

The training course will be highly participatory and the course leader will present, guide and facilitate learning, using a range of methods including formal presentation, discussions, sector-specific case studies and exercises. Above all, the course leader will make extensive use of real-life case examples in which he has been personally involved. 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 multiple-choice type will be made available on daily basis to examine the effectiveness of delivering the course.

- 30% Lectures
- 30% Workshops and work presentation
- 20% Case studies & Practical Exercises
- 10% Role Play
- 10% Videos, Software or Simulators (as applicable) & General Discussions

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

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MEETING ROOM PICTURES:



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