COURSE OVERVIEW ME0489
Inspect and Maintain Safeguarding Vent and Relief Systems

Course Title
Inspect and Maintain Safeguarding Vent and Relief Systems

Course Date/Venue
February 25-29, 2024/The Mouna Meeting Room, The H Dubai Hotel, Sheikh Zayed Rd - Trade Centre, Dubai, UAE

Course Reference
ME0489

Course Duration/Credits
Five days/3.0 CEUs/30 PDHs

Course Description

This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

This course is designed to provide participants with a fundamental overview of Inspect & Maintain Safeguarding Vent & Relief Systems. It covers the key purpose and operation of safeguarding vent and relief systems; the equipment safety and operational efficiency; the types of safeguarding vent and relief system devices; the devices specific to the location, common devices used globally and the function and application of each device; the parts and roles of system components in the overall system and the maintenance requirements for each component; the typical operating parameters/limits; and the safe isolation procedures and equipment/plant for inspection.

During this interactive course, participants will learn the inspection methodologies and procedures; the routine checks and use of tools, devices and software for inspection; the technical drawings, specifications and their importance in installation and maintenance; the scheduled maintenance versus need-based maintenance; the regular system checks, documentation and safe isolation and inspection; the new and emerging technologies in the field; the system components and safety protocols; and emergency responses, documentation and compliance.

Course Objectives

Upon the successful completion of this course, each participant will be able to:-

- Apply and gain a basic knowledge on inspect and maintain safeguarding vent and relief systems
- Explain the tasks related to inspect and maintain safeguarding vent and relief systems
- Explain the key purpose of and how a safeguarding vent and relief system operates
- Demonstrate safe isolation of equipment/plant for the inspection of safeguarding vent and relief systems
- Explain what types of safeguarding vent and relief system devices used at own location and explain their function
- Explain the typical operating parameters/limits for safeguarding vent and reliefs systems
- Demonstrate the correct installations of safeguarding vent and relief systems from drawings and specifications
- Discuss the key purpose and operation of safeguarding vent and relief systems
- Maintain equipment safety and operational efficiency
- Recognize the types of safeguarding vent and relief system devices as well as the devices specific to the location, the common devices used globally and the function and application of each device
- Identify the parts and roles of system components in the overall system and the maintenance requirements for each component
- Discuss the typical operating parameters/limits and apply safe isolation procedures and equipment/plant for inspection
- Carryout inspection methodologies and procedures including routine checks and use of tools, devices and software for inspection
- Read and interpret technical drawings as well as the specifications and their importance in installation and maintenance
- Differentiate scheduled maintenance versus need-based maintenance and apply regular system checks and documentation
- Employ safe isolation and inspection and discuss the new and emerging technologies in the field
- Calibrate and test system components as well as implement safety protocols, emergency responses, documentation and compliance

Exclusive Smart Training Kit - H-STK®

*Participants of this course will receive the exclusive "Haward Smart Training Kit" (**H-STK®**). The **H-STK®** consists of a comprehensive set of technical content which includes **electronic version** of the course materials, sample video clips of the instructor's actual lectures & practical sessions during the course conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides a fundamental overview of the inspection and maintenance of safeguarding vent and relief systems for engineers, maintenance technicians, safety personnel, operations personnel, compliance and regulatory personnel, managers, supervisors, environmental specialists and health and safety inspectors.

Accommodation

Accommodation is not included in the course fees. However, any accommodation required can be arranged at the time of booking.

Course Fee

US$ 5,500 per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Training Methodology

All our Courses are including **Hands-on Practical Sessions** using equipment, State-of-the-Art Simulators, Drawings, Case Studies, Videos and Exercises. The courses include the following training methodologies as a percentage of the total tuition hours:-

30% Lectures
20% Practical Workshops & Work Presentations
30% Hands-on Practical Exercises & Case Studies
20% Simulators (Hardware & Software) & Videos

In an unlikely event, the course instructor may modify the above training methodology before or during the course for technical reasons.

Course Certificate(s)

Internationally recognized certificates will be issued to all participants of the course who completed a minimum of 80% of the total tuition hours.

Certificate Accreditations

Certificates are accredited by the following international accreditation organizations: -

- The International Accreditors for Continuing Education and Training (IACET - USA)

  Haward Technology is an Authorized Training Provider by the International Accreditors for Continuing Education and Training (IACET), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, USA. In obtaining this authority, Haward Technology has demonstrated that it complies with the **ANSI/IACET 2018-1 Standard** which is widely recognized as the standard of good practice internationally. As a result of our Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for its programs that qualify under the **ANSI/IACET 2018-1 Standard**.

  Haward Technology's courses meet the professional certification and continuing education requirements for participants seeking **Continuing Education Units** (CEUs) in accordance with the rules & regulations of the International Accreditors for Continuing Education & Training (IACET). IACET is an international authority that evaluates programs according to strict, research-based criteria and guidelines. The CEU is an internationally accepted uniform unit of measurement in qualified courses of continuing education.

  Haward Technology Middle East will award **3.0 CEUs** (Continuing Education Units) or **30 PDHs** (Professional Development Hours) for participants who completed the total tuition hours of this program. One CEU is equivalent to ten Professional Development Hours (PDHs) or ten contact hours of the participation in and completion of Haward Technology programs. A permanent record of a participant's involvement and awarding of CEU will be maintained by Haward Technology. Haward Technology will provide a copy of the participant's CEU and PDH Transcript of Records upon request.

- British Accreditation Council (BAC)

  Haward Technology is accredited by the **British Accreditation Council** for **Independent Further and Higher Education** as an **International Centre**. BAC is the British accrediting body responsible for setting standards within independent further and higher education sector in the UK and overseas. As a BAC-accredited international centre, Haward Technology meets all of the international higher education criteria and standards set by BAC.

Course Instructor(s)

This course will be conducted by the following instructor(s). However, we have the right to change the course instructor(s) prior to the course date and inform participants accordingly:

Dr. Ahmed El-Sayed, PhD, MSc, BSc, is a **Senior Electrical & Instrumentation Engineer** with over **30 years** of extensive experience in the **Oil**, **Gas**, **Power**, **Petroleum**, **Petrochemical** and **Utilities**. He specializes in **Instrumentation Protection Devices** Maintenance & Testing, **Protection Devices** Troubleshooting, **DCS & ESD** System Architecture, **Distributed Control System**, **DCS** & **SCADA**, Distributed Control System (**DCS**) Selection & Troubleshooting, Advanced **DCS Yokogawa**, **Yokogawa CENTUM VP DCS**, **Modern Distributed Control System** (**DCS**) **& Process Instrumentation**, **Cyber Security** of Industrial System, **DCS System** (**Honeywell**), **DCS Experion** System, **DCS Siemens Telepherm XP**, **Relay Coordination Using ETAP Software**, **Power System Study on ETAP**, **ETAP-Power System Analysis**, **Flow Measurement** Foundation, **Hydrocarbon** Measurement & Sampling, **Gas Dosiers** Preparation, **Gas/Liquid Fuel** Measurement, **Instrumentation Measurement & Control System**, **Flow** Measurement, **Pressure** Measurement, **Level & Temperature** Measurement, **Measurement Devices & Control System**, **Instrumentation & Control** Systems, **Control System** Orientation, Uninterruptible Power Supply (**UPS**) **Battery Charger**, **Industrial UPS Systems Construction & Operation**, **Test Lead-Acid & Ni-cad Battery Systems**, **Hazards & Safe Work Practice**s, **Transformer** Operational Principles, Selection & Troubleshooting; **HV & LV Transformers**, **Control Valves & Actuators**, **Electrical Safety**, **Protection Relay Application**, **Maintenance & Testing**, **NEC** (National Electrical Code), **NESC** (National Electrical Safety Code), **Electrical Safety**, **Electrical Hazards Assessment**, **Electrical Equipment**, **Personal Protective Equipment**, Lock-Out & Tag-Out (**LOTO**), Confined Workspaces, Alerting Techniques, Electrical Transient Analysis Program (**ETAP**), Power **Quality**, Power **Network**, Power **Distribution**, **Distribution Systems**, **Power Systems Control**, **Power Systems Security**, Power **Electronics**, Electrical **Substations**, **UPS** & **Battery System**, **Earthing & Grounding**, Power **Generation**, **Protective Systems**, **Electrical Generators**, **Power** & **Distribution Transformers**, **Electrical Motors**, **Switchgears**, **Transformers**, **AC** & **DC Drives**, **Variable Speed Drives** & **Generators**, **Generator Protection**, **GE Gas Turbines**, PLC, SCADA, DCS, Process Control, Control Systems & Data Communications, Instrumentation, Automation, Valve Tuning, SIS, SIL, ESD, Alarm Management Systems, Engine Management System, Bearing & Rotating Machine, Fieldbus Systems and Fiber Optics Technology. He is currently the **Systems Control Manager** of **Siemens** where he is in-charge of Security & Control of Power **Transmission Distribution** & **High Voltage** Systems and he further takes part in the Load Records Evaluation & Transmission Services Pricing.

During his career life, Dr. Ahmed has been actively involved in different Power System Activities including Roles in Power System Planning, Analysis, Engineering, **HV Substation** Design, Electrical Service Pricing, Evaluations & Tariffs, Project Management, Teaching and Consulting. His vast industrial experience was honed greatly when he joined many International and National Companies such as **Siemens**, **Electricity Authority** and **ACETO** industries as the **Instrumentation & Electrical Service Project Manager**, **Instrumentation & Control Engineer**, **Energy Management Engineer**, **Department Head**, **Assistant Professor**, **Instrumentation & Control Instructor**, **Project Coordinator**, **Project Assistant and Managing Board Member** where he focused more on dealing with Technology Transfer, System Integration Process and Improving Localization. He was further greatly involved in manufacturing some of **Power System** and **Control & Instrumentation Components** such as Series of Digital Protection **Relays**, MV **VFD**, **PLC** and **SCADA** System with intelligent features.

Dr. Ahmed is well-versed in different electrical and instrumentation fields like **ETAP**, Load Management Concepts, **PLC** Programming, Installation, Operation and Troubleshooting, **AC Drives** Theory, Application and Troubleshooting, Industrial Power Systems Analysis, AC & DC **Motors**, Electric Motor **Protection**, **DCS SCADA**, **Control** and Maintenance Techniques, Industrial Intelligent Control System, **Power Quality** Standards, Power Generators and Voltage Regulators, Circuit Breaker and Switchgear Application and Testing Techniques, **Transformer** and **Switchgear** Application, Grounding for Industrial and Commercial Assets, Power Quality and **Harmonics**, **Protective Relays** (O/C Protection, Line Differential, Bus Bar Protection and **Breaker Failure Relay**) and Project Management Basics (PMB).

Dr. Ahmed has **PhD**, **Master** & **Bachelor** degrees in **Electrical Engineering** from the **University of Wisconsin Madison**, **USA** and **Ain Shams University**, respectively. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/ Assessor/Trainer** by the **Institute of Leadership and Management** (**ILM**), an active member of IEEE and ISA as well as numerous technical and scientific papers published internationally in the areas of Power Quality, Superconductive Magnetic Energy Storage, SMES role in Power Systems, Power System **Blackout** Analysis, and Intelligent Load Shedding Techniques for preventing Power System Blackouts, HV **Substation Automation** and Power System Stability.

Course Program

The following program is planned for this course. However, the course instructor(s) may modify this program before or during the course for technical reasons with no prior notice to participants. Nevertheless, the course objectives will always be met

Day 1: Sunday, 25th of February 2024

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Overview of Safeguarding Vent & Relief Systems*** *Definition & Purpose ● Importance in Industrial Settings*
0930 – 0945	*Break*
0945 – 1030	***Key Purpose & Operation of Safeguarding Vent & Relief Systems*** *Role in Maintaining Equipment Safety & Operational Efficiency ● Operating Principles*
1030 – 1230	***Types of Safeguarding Vent & Relief System Devices*** *Devices Specific to your Location ● Introduction to Common Devices Used Globally ● Function & Application of Each Device*
1230 – 1245	*Break*
1245 – 1420	***System Components & their Functions*** *Parts & their Roles in the Overall System ● Maintenance Requirements for Each Component*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day One*

Day 2: Monday, 26th of February 2024

0730 – 0930	***Introduction to Typical Operating Parameters/Limits*** *Rationale Behind Set Parameters/Limits ● Importance of Adhering to these Parameters*
0930 – 0945	*Break*
0945 – 1100	***Interactive Session: Identifying System Components on Site*** *Field Walk to Identify & Understand the Components in a Real-World Setting*
1100 – 1230	***Safe Isolation of Equipment/Plant for Inspection*** *Procedures & Precautions ● Tools & Equipment Required for Safe Isolation*
1230 – 1245	*Break*
1245 – 1420	***Inspection Methodologies & Procedures*** *Routine Checks & Comprehensive Inspections ● Use of Tools, Devices & Software for Inspection*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Two*

Day 3: Tuesday, 27th of February 2024

0730 – 0930	***Understanding Drawings & Specifications*** *Reading & Interpreting Technical Drawings ● Understanding Specifications & their Importance in Installation & Maintenance*
0930 – 0945	*Break*

0945 – 1100	***Demo: Correct Installation from Drawings & Specifications*** *Hands-On Session on System Installation ● Identifying Potential Challenges & their Solutions*
1100 – 1230	***Maintenance Protocols & Best Practices*** *Scheduled Maintenance Versus Need-Based Maintenance*
1230 – 1245	*Break*
1245 – 1420	***Maintenance Protocols & Best Practices (cont'd)*** *Importance of Regular System Checks & Documentation*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Three*

Day 4: Wednesday, 28th of February 2024

0730 – 0930	***Case Study: A Real-World Incident Involving System Failure*** *Analyzing What Went Wrong ● Lessons Learned & Preventive Measures*
0930 – 0945	*Break*
0945 – 1100	***Safe Isolation & Inspection*** *Participants Practice Safe Isolation Procedures ● Hands-on Inspection of Safeguarding Vent & Relief Systems*
1100 – 1230	***Advanced Devices & Technologies*** *Introduction to New & Emerging Technologies in the Field*
1230 – 1245	*Break*
1245 – 1420	***Advanced Devices & Technologies (cont'd)*** *Benefits & Challenges Associated with their Adoption*
1420 – 1430	***Recap*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Topics that were Discussed Today and Advise Them of the Topics to be Discussed Tomorrow*
1430	*Lunch & End of Day Four*

Day 5: Sunday, 29th of February 2024

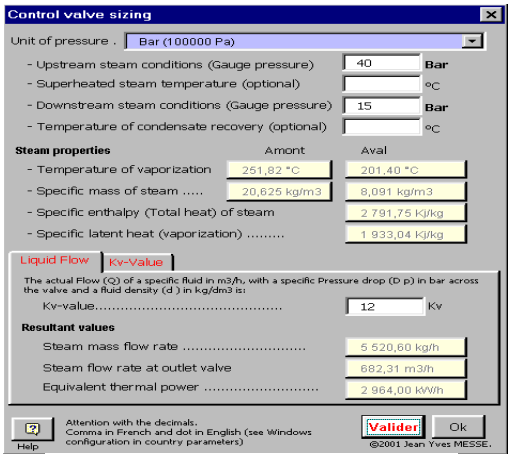
0730 – 0930	***Calibration & Testing of System Components*** *Procedures & Importance of Regular Calibration ● Hands-On Session on Calibration Tools & Techniques*
0930 – 0945	*Break*
0945 – 1100	***Safety Protocols & Emergency Responses*** *Best Practices to Ensure Worker Safety ● Emergency Procedures in Case of System Failures or Breaches*
1100 – 1230	***Documentation & Compliance*** *Importance of Proper Record-Keeping*
1230 – 1245	*Break*
1245 – 1345	***Documentation & Compliance (cont'd)*** *Meeting Industrial Compliance & Standards*
1345 – 1400	***Course Conclusion*** *Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course*
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Valve Demo Kit

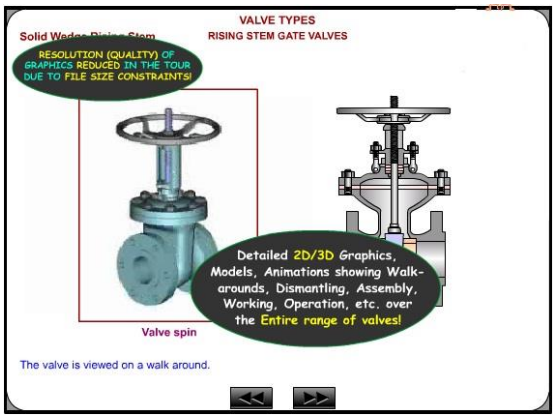
Practical session will be organized during the course for delegates to practice the theory learnt.

Simulator (Hands-on Practical Sessions)

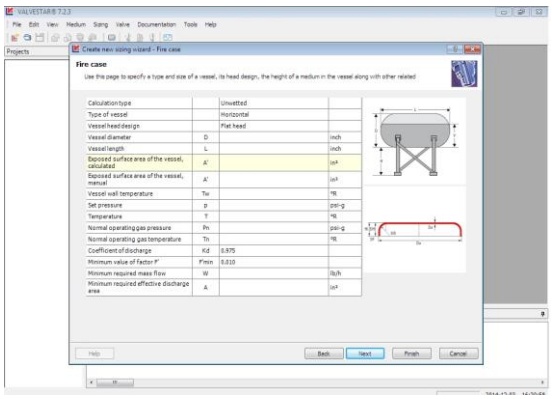
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using the state-of-the-art "Valve Sizing Software", "Valve Software 3.0", "Valvestar 7.2 Software" and "PRV2SIZE Software".



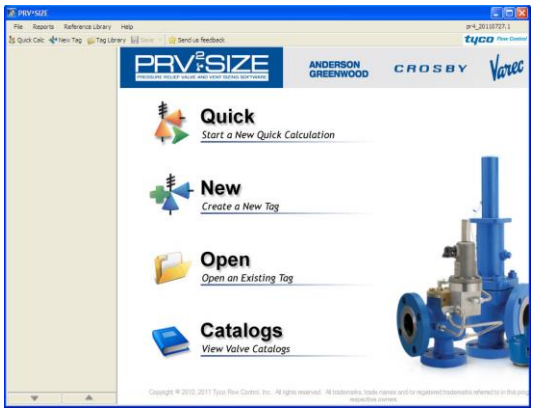
Valve Sizing Software



Valve Software 3.0



Valvestar 7.2 Software



PRV²SIZE Software

Course Coordinator

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