

COURSE OVERVIEW FE0029-4D
API 576: Inspection of Pressure Relieving Devices

Course Title

API 576: Inspection of Pressure Relieving Devices

Course Reference

FE0029-4D

Course Duration/Credits

Four days/2.4 CEUs/24 PDHs

Course Date/Venue



Session(s)	Date	Venue
1	April 15-18, 2024	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
2	July 01-04, 2024	Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
3	October 14-17, 2024	Al Aziziya Hall, The Proud Hotel Al Khobar, Al Khobar, KSA

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 delegates with a detailed and up-to-date overview of pressure-relieving devices inspection in accordance with API 576. It covers the recommended practice that describes the inspection and repair practices for automatic pressure-relieving devices commonly used in the oil and petrochemical industries. As a guide to the inspection and repair of these devices in the user's plant, it is intended to ensure their proper performance.



Further, this course will also discuss the dimensional characteristics of pressure-relief valves; the operational characteristics of system and device pressures; the pressure-relief devices; and the causes of improper performance of pressure relieving devices in corrosion, damaged seating surfaces, failed spring, improper setting and adjustment.



During this interactive course, participants will be able to describe the plugging and sticking, misapplication of materials, improper location, history or identification and rough handling; the improper differential between operating and set pressures, improper discharge piping test procedures and improper handling, installation and selection of rupture disks; the inspection and testing of pressure relieving devices; the shop inspection and overhauling, visual on-stream inspection, inspection frequency and time of inspection; and the records and reports, its objectives, responsibilities, sample records and report systems.

Course Objectives

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

- Inspect pressure relieving devices in accordance with the international standard API 576
- Recognize the dimensional characteristics of pressure-relief valves as well as the operational characteristics of system and device pressures
- Discuss pressure-relief devices including pressure-relief valve, safety valve, relief valve, safety-relief valve, conventional and balanced safety-relief valve, pilot operated pressure relief valve, pressure and vacuum vent valve and rupture disk device
- Analyze the causes of improper performance of pressure relieving devices in corrosion, damaged seating surfaces, failed spring, improper setting and adjustment
- Describe plugging and sticking, misapplication of materials, improper location, history or identification and rough handling
- Determine improper differential between operating and set pressures, improper discharge piping test procedures and improper handling, installation and selection of rupture disks
- Inspect and test pressure relieving devices in a professional manner
- Carryout shop inspection and overhauling, visual on-stream inspection, inspection frequency and time of inspection
- Review the records and reports and discuss its objectives, responsibilities, sample records and report systems

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 an overview of all significant aspects and considerations of inspection of pressure relieving devices in accordance with the international standard API 576 for process, piping, pipelines and pressure vessels engineers and supervisors. Further, it is suitable for inspection and QA & QC engineers, boilers and process plant equipment owners, maintenance staff who inspect and install pressure relief devices and engineers involved in plant turnaround and upgrade projects.




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 **2.4 CEUs** (Continuing Education Units) or **24 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.

Accommodation

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





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:



Mr. George Poulos, MBA, MSc, BSc, CEng, is a **Senior Corrosion & Welding Engineer** with over **45 years** of extensive experience within the **Oil & Gas, Petrochemical, Refinery, Construction, Aircraft & Shipbuilding** Industry. His wide experiences covers in the areas of **Welding & Cutting, Welding Inspection, Welding & Machine Techniques, TIG & Arc Welding, Shielded Metal Arc Welding, Gas Tungsten & Gas Metal Arc Welding, Welding Procedure Specifications & Qualifications, Aluminium Welding, Hot & Cold Tapping**

Techniques, Hot Work-Safety, SMAW, GTAW, Welding Techniques, Pipeline Welding Practices, Welding Engineering, Welding Fatigue & Fracture Mechanics, Welding Inspection Technology, Welding Safety, Welding Defects Analysis, Welding Technology, Welding Problems, Welding & Non Destructive Testing, Metallurgy Techniques, Metallurgical Failure Analysis & Prevention, Corrosion Fabrication & Inspection, Fabrication & Repair, Corrosion Prevention, Corrosion Engineering, Corrosion Control, Corrosion Inhibition, Corrosion Management in Process Operations, Corrosion & Prevention of Failures, Material Selection, Cathodic Protection Systems. Further, he is also well-versed in **Hot Rolling Process, Hot Strip Mill, Mill Operations, Roll Mill, Steel Making Process, Steel Manufacturing, Electric Arc Furnace (EAF), Steel Forging, Steel Manufacturing & Process Troubleshooting, Slit Rolling, Carbon Steel Pipe Wall Thickness & Grade Selection, Ferro-Alloys, Steel Metallurgy, Steel Structure Welding, Steelmaking Slag, Steel Making Application, Heat Treatment & Prevention Techniques, Corrosion Fabrication & Inspection and Post Weld Heat Treatment.**

During his career life, Mr. Poulos has gained his practical and field experience through his various significant positions and dedication as the **Chief Executive, Head of Technical Studies, Manager, Senior Consultant, Lead Welding Engineer, Senior Welding Engineer, Design Engineer, Sales Engineer, Author, Welding Instructor, Visiting Lecturer and Technical Proposal Research Evaluator** from various international companies such as Greek Welding Institute, Hellenic Quality Forum and International Construction Companies such as Shipbuilding, Aircraft Industry and Oil and Gas Industry.

Mr. Poulos is a **Registered Chartered Engineer** and has a **Master's** degree in **Naval Architecture**, a **Bachelor's** degree in **Welding Engineering** and a Master of Business Administration (**MBA**) from the **Sunderland University, Aston University** and **Open University, UK**, respectively. Further, he is a **Certified Trainer/Instructor**, an active Member of Chartered Quality Institute (**CQI**), The British Welding Institute (**TWI**), The Royal Institution of Naval Architects (**RINA**) and American Welding Society (**AWS**), a Registered **EWFIW** (European Welding Federation-International Welding Institute W/E) and an **IRCA** Accredited External Quality Systems Auditor through BVQI. He is an **Author** of Technical Book dealing with Protection/Health/Safety in the Welding/Cutting domain and delivered various trainings, seminars, conferences, workshops and courses globally.



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 Fee

Dubai	US\$ 4,500 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Abu Dhabi	US\$ 4,500 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Al Khobar	US\$ 4,500 per Delegate + VAT . This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

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

0730 – 0800	<i>Registration & Coffee</i>
0800 – 0815	<i>Welcome & Introduction</i>
0815 – 0830	PRE-TEST
0830 – 1000	Introduction <i>Dimensional Characteristics of Pressure-Relief Valves • Operational Characteristics (System Pressures, Device Pressures)</i>
1000 – 1015	<i>Break</i>
1015 – 1130	Pressure-Relieving Devices <i>Pressure-relief Valve • Safety Valve • Relief Valve</i>
1130 – 1230	Pressure-Relieving Devices (cont'd) <i>Safety- relief Valve • Conventional Safety- relief Valve • Balanced Safety- relief Valve</i>
1230 – 1245	<i>Break</i>
1245 – 1420	Pressure-Relieving Devices (cont'd) <i>Pilot-Operated Pressure-relief Valve • Pressure-and/or Vacuum-vent Valve • Rupture Disk Device</i>
1420 – 1430	Recap
1430	<i>Lunch & End of Day One</i>





Day 2

0730 – 1000	Causes of Improper Performance Corrosion • Damage Seating Surfaces
1000 – 1015	Break
1015 – 1130	Causes of Improper Performance (cont'd) Failed Spring • Improper Setting & Adjustment
1130 – 1230	Causes of Improper Performance (cont'd) Plugging & Sticking
1230 – 1245	Break
1245 – 1420	Causes of Improper Performance (cont'd) Misapplication of Materials
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 1000	Causes of Improper Performance (cont'd) Improper Location, History or Identification
1000 – 1015	Break
1015 – 1130	Causes of Improper Performance (cont'd) Rough Handling • Improper Differential between Operating & Set Pressures
1130 – 1230	Causes of Improper Performance (cont'd) Improper Discharger Piping Test Procedures • Improper Handling, Installation & Selection of Rupture Disks
1230 – 1245	Break
1245 – 1420	Inspection & Testing Reasons for Inspection & Testing • Shop Inspection/Overhaul • Visual On-stream Inspection • Inspection Frequency • Time of Inspection
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

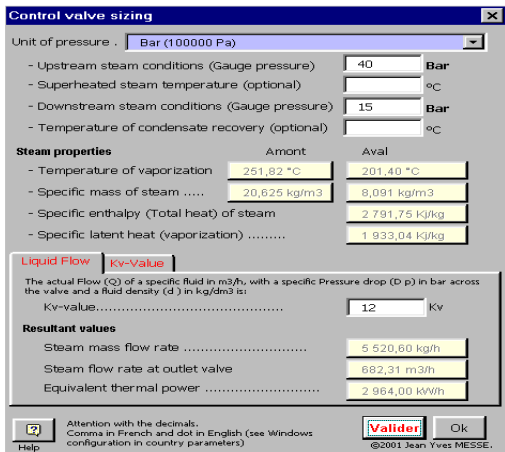
0730 – 1000	Records & Reports Objective
1000 – 1015	Break
1015 – 1130	Records & Reports (cont'd) The Need to Keep Records
1130 – 1230	Records & Reports (cont'd) Responsibilities
1230 – 1245	Break
1245 – 1345	Records & Reports (cont'd) Sample Record & Report System
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course



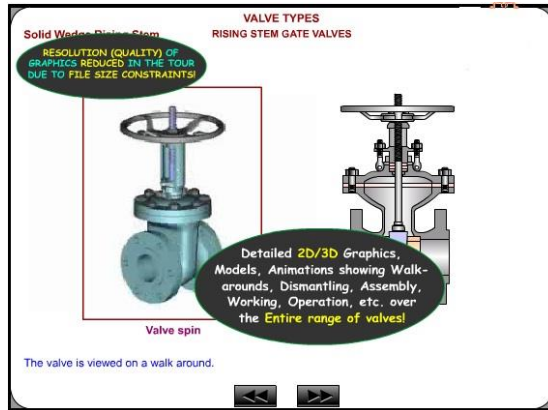


Simulator (Hands-on Practical Sessions)

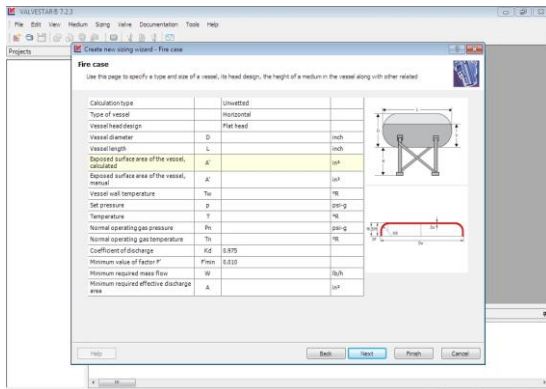
Practical sessions will be organized during the course for delegates to practice the theory learnt. Delegates will be provided with an opportunity to carryout various exercises using our state-of-the-art “Valve Sizing Software”, “Valve Software 3.0”, “Valvestar 7.2 Software” and “PRV²SIZE Software” simulators.



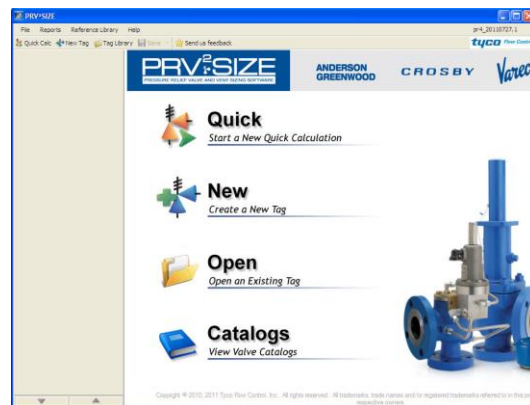
Valve Sizing Software



Valve Software 3.0



Valvestar 7.2 Software



PRV²SIZE Software

Course Coordinator

Kamel Ghanem, Tel: +971 2 30 91 714, Email: kamel@haward.org

