

COURSE OVERVIEW ME0730 ASME Section 1 Power Boilers

Course Title

ASME Section 1 Power Boilers

Course Date/Venue

September 16-20, 2024/Boardroom Meeting Room,
M Gallery The Galata Hotel Istanbul, Istanbul,
Turkey

Course Reference

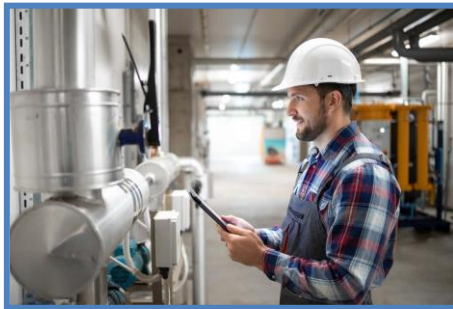
ME0730

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs



Course Description

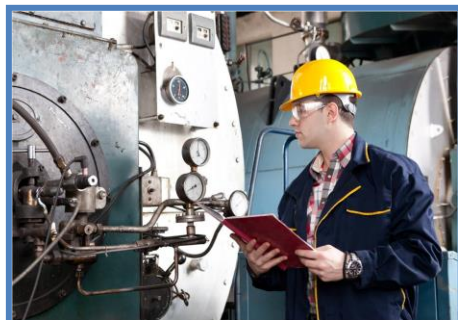


This practical and highly-interactive course includes various practical sessions and exercises. Theory learnt will be applied using our state-of-the-art simulators.

Power boilers, which are high-pressure boilers are mostly for power generation, industrial process and other applications where steam or high-temperature water is required. A power boiler is defined as a boiler in which steam or other vapor is generated at a pressure of more than 15 psi for use external to itself. Other power boilers include heat recovery steam generator, organic fluid vaporizer, electric boiler, miniature boiler and high-temperature water boiler.



ASME codes and standards are the most widely used in the world for the design, operation, maintenance and repair of power boilers, pressure vessels and nuclear facilities.



Based on the rules for construction, this course covers code requirements including background, types, design materials, fabrication, inspection and testing of power boilers. The rules of National Board Inspection Code are also discussed for inspection, installation, repairs and alternations. This course also features design problems, workshop, case studies and videos.

The course will provide the participant with a detailed knowledge of the responsibilities of personnel involved in the manufacturing, fabrication and examination of new power boiler plant components and new construction activity as defined by Section 1 of the ASME Boiler & Pressure Vessel Code (BPVC).

The course will enhance the participant's knowledge and understanding of the requirements for design and construction of power boilers in accordance with Section 1 of the ASME Boiler & Pressure Vessel Code.

Course Objectives

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

- Apply and gain a comprehensive knowledge on power boilers in accordance with the international standard ASME section 1
- Discuss ASME B&PVC, organization and scope of section 1, interpretations and the use of section 8 vessels in section 1
- Determine boiler piping, boiler external piping, valves, valve ratings, enforcement of section 1 and international acceptance
- Identify the codes cases, inquiries, interpretations, code effective dates and revisions as well as the materials of Section 1 construction including the setting of allowable stresses
- Use section 2 finding and use design stresses in section 2 part D including non-ASME material specifications
- Recognize standard pressure parts, non-pressure part materials, material test reports and guidance in using of old materials
- Illustrate design methods of section 1 and selection of design temperature and pressure for boilers and piping
- Interpret loads consideration by section 1, other loads and non-pressure part materials
- Select weld procedures for construction and recognize qualification of weld procedures, non-destructive examinations requirements and visual inspection requirements
- Employ post weld heat treatment, repairs to welds and hydrostatic testing
- Carryout quality control system and identify the manual requirements, code certification by stamping and data reports, various code symbol stamps and what they cover as well as codes applicable for boilers and pressure vessels in service
- Recognize repairs and alterations under the National Board of Inspection Code, ASME Code edition applicable to repairs and alterations and upcoming changes to ASME section 1
- Comply pressure equipment vessel (PED) requirements and the essential requirements met by section 1
- Propose for the modernization of section 1 and a possible division 2

Who Should Attend

This course provides an overview of all significant aspects and considerations of power boilers for engineers, managers and quality personnel who are involved in manufacturing, fabrication and examination of components or parts, for power boilers or the construction of a power boiler built to the requirements of the international codes and standards. It is also valuable for those who are or will be directly or indirectly involved in the design, analysis, construction, maintenance or operation of a power boiler.

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

US\$ 6,000 per Delegate + **VAT**. This rate includes Participants Pack (Folder, Manual, Hand-outs, etc.), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Accommodation


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

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: -


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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.

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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:



Mr. Karl Thanasis, PEng, MSc, MBA, BSc, is **Senior Mechanical & Maintenance Engineer** with over **45 years** of extensive industrial experience. His wide expertise includes **Boiler, Steam Turbine & Steam System Operation, Maintenance & Troubleshooting, Advanced Boiler Operation, Inspection and Maintenance, Boiler & Steam System Management, Certified Boiler Operation, Control, Maintenance & Troubleshooting, Reforming Combustion Fundamentals & Safety, Combustion Technology for Boilers, Troubleshooting/Service, Boiler Design, Operation & Maintenance, Boiler Operations and Water Treatment, Process Fired Heaters, Steam Generation, Steam Turbines, Power Generator Plants, Gas Turbines, Combined Cycle Plants, Boilers, Air Preheaters, Induced Draft Fans, All Heaters Piping Work, Refractory Casting, Heater Fabrication, Thermal & Fired Heater Design, Heat Exchangers, Heat Transfer, Coolers, Power Plant Performance, Efficiency & Optimization, Storage Tank Design & Fabrication, Thermal Power Plant Management, Pump Operation & Maintenance, Chiller & Chiller Plant Design & Installation, Pressure Vessel, Safety Relief Valve Sizing & Selection, Valve Disassembling & Repair, Pressure Relief Devices (PSV), Hydraulic & Pneumatic Maintenance, Advanced Valve Technology, Pressure Vessel Design & Fabrication, Pumps, Turbo-Generator, Turbine Shaft Alignment, Lubrication, Mechanical Seals, Packing, Blowers, Bearing Installation, Couplings, Clutches and Gears, Piping & Pipeline, Maintenance, Repair, Shutdown, Turnaround & Outages, Maintenance & Reliability Management, Mechanical Maintenance Planning, Scheduling & Work Control, Advanced Techniques in Maintenance Management, Predictive & Preventive Maintenance, Maintenance & Operation Cost Reduction Techniques, Reliability Centered Maintenance (RCM), Machinery Failure Analysis, Rotating Equipment Reliability Optimization & Continuous Improvement, Material Cataloguing, Mechanical & Rotating Equipment Troubleshooting & Maintenance, Root Cause Analysis & Reliability Improvement, Condition Monitoring and Root Cause Failure Analysis (RCFA). Further, he is also versed in **Wastewater Treatment Technology, Networking System, Water Network Design, Industrial Water Treatment in Refineries & Petrochemical Plants, Piping System, Water Movement, Water Filtering, Mud Pumping, Sludge Treatment and Drying, Aerobic Process of Water Treatment** that includes **Aeration, Sedimentation and Chlorination Tanks**. His strong background also includes **Design and Sizing** of all **Waste Water Treatment Plant Associated Equipment** such as **Sludge Pumps, Filters, Metering Pumps, Aerators and Sludge Decanters**.**

Mr. Thanasis has acquired his thorough and practical experience as the **Project Manager, Plant Manager, Area Manager - Equipment Construction, Construction Superintendent, Project Engineer and Design Engineer**. His duties covered **Plant Preliminary Design, Plant Operation, Write-up of Capital Proposal, Investment Approval, Bid Evaluation, Technical Contract Write-up, Construction and Sub-contractor Follow up, Lab Analysis, Sludge Drying and Management of Sludge Odor and Removal**. He has worked in various companies worldwide in the **USA, Germany, England and Greece**.

Mr. Thanasis is a **Registered Professional Engineer** in the **USA and Greece** and has a **Master's and Bachelor's degree in Mechanical Engineering with Honours** from the **Purdue University and SIU in USA** respectively as well as an **MBA** from the **University of Phoenix in USA**. Further, he is a **Certified Internal Verifier/Trainer/Assessor** by the **Institute of Leadership & Management (ILM)** a **Certified Instructor/Trainer** and has delivered numerous trainings, courses, seminars, workshops and conferences worldwide.



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: Monday, 16th of September 2024

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0930	Introduction to the ASME Boiler & Pressure Vessel Code & Section 1; Scope of Section 1 Introduction to the ASME B&PVC • Organization & Scope of Section 1 • Interpretations • Use of Section 8 Vessels in Section 1 • Boiler Proper Piping & Boiler External Piping • Valves & Valve Ratings; Safety Valves • Enforcement of Section 1; Third Party Inspection • International Acceptance • Code Cases, Inquiries, Interpretations, Code Effective Dates, & Revisions
0930 - 0945	Break
0945 – 1100	Materials in Section 1 Code Inquiries & Interpretations; Code Cases • Materials of Section 1 Construction, Including the Setting of Allowable Stresses • Using Section 2 Finding & Using Design Stresses in Section 2 Part D
1100 – 1230	Materials in Section 1 (cont'd) Use of Non-ASME Material Specifications & Material not Fully Identified • Standard Pressure Parts • Non Pressure Part Materials
1230 – 1245	Break
1245 – 1420	Materials in Section 1 (cont'd) Material Test Reports • Guidance on Use of Old Materials
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2: Tuesday, 17th of September 2024

0730 – 0930	Design in Section 1 Design Methods of Section 1 • Selection of Design Temperature & Pressure for Boilers & Piping
0930 - 0945	Break
0945 – 1100	Design in Section 1 (cont'd) Loads Considered by Section 1
1100 – 1230	Design in Section 1 (cont'd) Other Loads
1230 – 1245	Break
1245 – 1420	Design in Section 1 (cont'd) Non Pressure Part Materials
1420 - 1430	Recap
1430	Lunch & End of Day Two





Day 3: Wednesday, 18th of September 2024

0730 – 0930	Fabrication in Section 1 Selection of Weld Procedures for Construction • Qualification of Weld Procedures; Weld Size Requirements of Section 1; Nozzle & Other Opening Rules for Welding
0930 - 0945	Break
0945 – 1100	Fabrication in Section 1 (cont'd) Nondestructive Examinations Requirements • Visual Inspection Requirements
1100 – 1230	Fabrication in Section 1 (cont'd) Post Weld Heat Treatment • Repairs to Welds
1230 – 1245	Break
1245 – 1420	Fabrication in Section 1 (cont'd) Hydrostatic Testing
1420 - 1430	Recap
1430	Lunch & End of Day Three

Day 4: Thursday, 19th of September 2024

0730 – 0930	Quality System & Certification in Section 1 Quality Control System & Manual Requirements • Code Certification by Stamping & Data Reports
0930 - 0945	Break
0945 – 1100	Quality System & Certification in Section 1 (cont'd) Various Code Symbol Stamps & What They Cover • Codes Applicable for Boilers & Pressure Vessels in Service
1100 – 1230	Quality System & Certification in Section 1 (cont'd) Repairs & Alterations Under the National Board Inspection Code • ASME Code Edition Applicable to Repairs & Alterations
1230 – 1245	Break
1245 – 1420	Quality System & Certification in Section 1 (cont'd) Upcoming Changes to ASME Section 1
1420 - 1430	Recap
1430	Lunch & End of Day Four

Day 5: Friday, 20th of September 2024

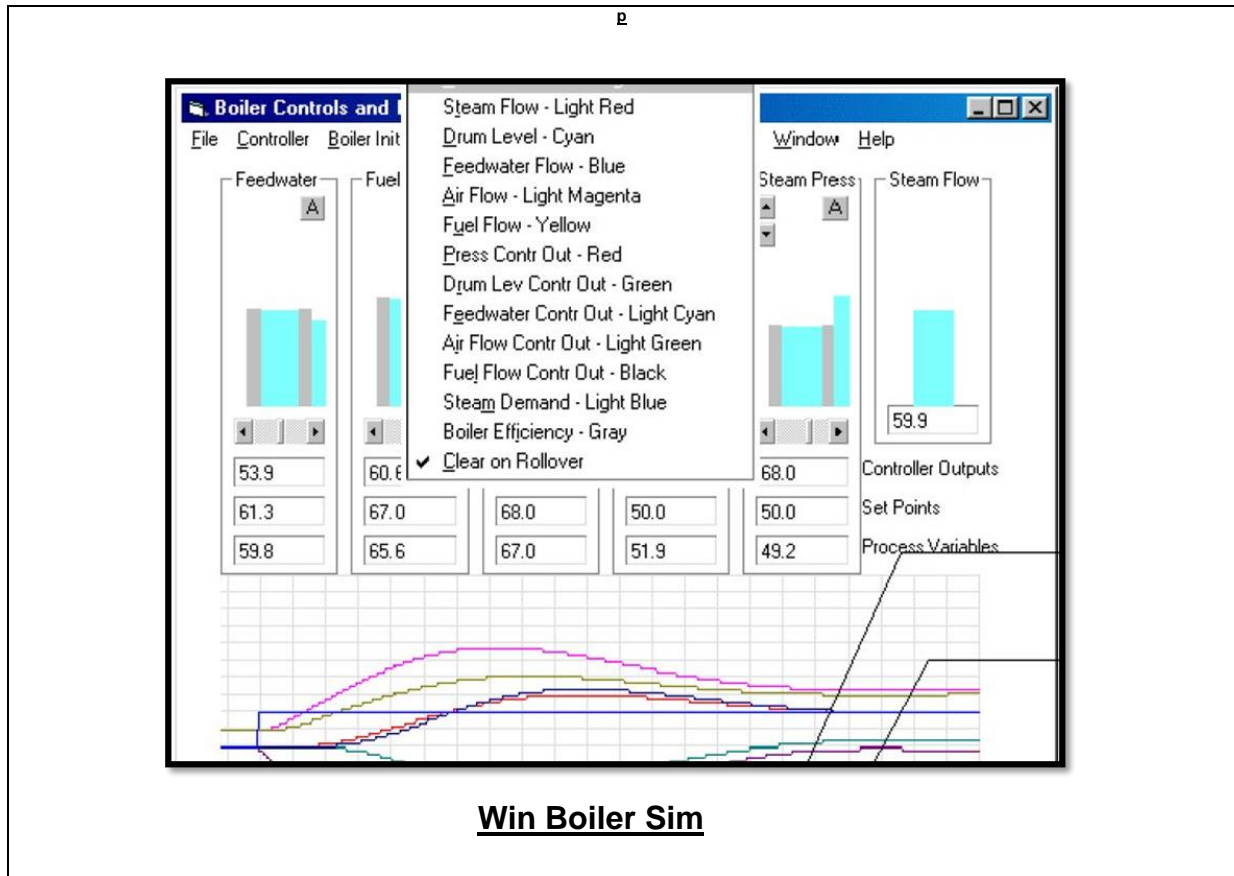
0730 – 0930	Compliance with the PED Refreshment on the Requirements of the Pressure Equipment Directive
0930 - 0945	Break
0945 – 1230	Compliance with the PED (cont'd) Essential Requirements Met by Section 1
1230 – 1245	Break
1245 - 1345	Overview of the Current Status on the Modernization of Section 1 Proposals for the 'Modernization' of Section 1 & a Possible Division 2
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 session 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 simulator “Win Boiler Sim”.



Win Boiler Sim

Course Coordinator

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