



COURSE OVERVIEW ME0548
Utilities Equipment: Steam Generator,
Water Treatment & Storage Tanks

Course Title

Utilities Equipment: Steam Generator, Water Treatment & Storage Tanks

Course Date/Venue

October 21-25, 2024/Fujairah Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE

Course Reference

ME0548



Course Duration/Credits

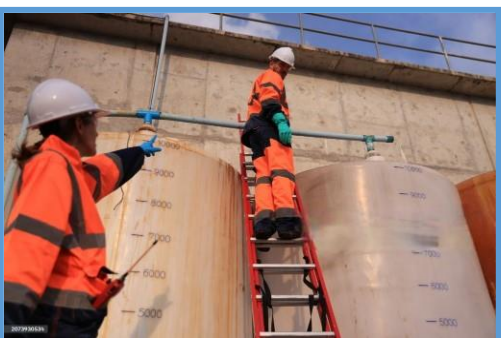
Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes real-life case studies and exercises where participants will be engaged in a series of interactive small groups and class workshops.

This course is designed to provide participants with a detailed and up-to-date overview of Utilities Equipment: Steam Generator, Water Treatment and Storage Tanks. It covers the utility systems in refining and the principles of steam generation, water chemistry and treatment fundamentals; the storage tanks used in the refining industry including types, design and application; the safety and environmental considerations in the operation and maintenance of utility equipment; and the relevant regulatory and standards governing utility equipment.



Further, the course will also discuss the design, features, operation principles and efficiency factors of steam generators; the boiler water treatment techniques, steam distribution systems and routine and preventive maintenance strategies; troubleshooting common operational issues in steam generators; the sources and quality of water for refining and the pre-treatment processes; and the desalination and demineralization techniques, wastewater treatment and reuse.





During this interactive course, participants will learn to monitor and control water treatment processes; the environmental impact and sustainability practices of water used in refining; the design and types of storage tanks and proper inspection and maintenance techniques; the technologies and practices for controlling emissions and recovering vapors from storage tanks; managing tank farms including safety, inventory and operations; the emergency preparedness and spill response and strategies for improving energy efficiency in steam generators, water treatment and storage tanks; integrating new technologies and developing and implementing safety management systems specific to utilities operations; and the regulatory updates, compliance trends, sustainability and environmental management.

Course Objectives

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

- Apply and gain an in-depth knowledge on utilities equipment covering steam generator, water treatment and storage tanks
- Discuss the utility systems in refining and the principles of steam generation, water chemistry and treatment fundamentals
- Identify the storage tanks used in the refining industry including types, design and application
- Discuss the safety and environmental considerations in the operation and maintenance of utility equipment
- Review the relevant regulatory and standards governing utility equipment
- Discuss the design, features, operation principles and efficiency factors of steam generators
- Carryout boiler water treatment techniques, steam distribution systems and routine and preventive maintenance strategies
- Troubleshoot common operational issues in steam generators and identify the sources and quality of water for refining
- Apply pre-treatment processes including desalination and demineralization techniques and wastewater treatment and reuse
- Monitor and control water treatment processes and discuss the environmental impact and sustainability practices of water used in refining
- Recognize the design and types of storage tanks and apply proper inspection and maintenance techniques
- Carryout technologies and practices for controlling emissions and recovering vapors from storage tanks
- Manage tank farms including safety, inventory and operations management
- Apply emergency preparedness and spill response and strategies for improving energy efficiency in steam generators, water treatment and storage tanks
- Integrate new technologies and develop and implement safety management systems specific to utilities operations
- Discuss regulatory updates and compliance trends and apply sustainability and environmental management

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 utilities equipment: steam generator, water treatment & storage tanks for engineers, operators and technicians, procurement managers, health and safety professionals, consultants and staff who are responsible for utility equipment steam generation and water treatment operations. Further, this course is essential for instrumentation, control, systems and applications engineers and technical staff.

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\$ 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.

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

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



Mr. Manuel Dalas MSc, BSc, is a **Senior Mechanical & Maintenance Engineer** with over **25 years** of industrial experience in **Steam Generators, Water Chemistry & Fundamental Treatment, Storage Tanks, Storage Tanks Design & Types, Boiler Water Treatment, Steam Distribution, Desalination & Demineralization, Oil, Gas, Refinery, Petrochemical, Power and Nuclear** industries. His wide expertise includes **Advanced Heating, Ventilation and Air-Conditioning Systems (HVAC), Air Balancing of HVAC System, Design & Installation of HVAC System, HVAC System Operation and Maintenance, HVAC**

Direct Digital Control (DDC), HVAC & BMS Controls, HVAC & Refrigeration Systems, Air-Conditioning & Cooling Systems, Planning & Implementation of District Cooling Systems (DCS), Material Cataloguing, Maintenance Planning & Scheduling, Reliability Centered Maintenance (RCM), Reliability Maintenance, Preventive & Predictive Maintenance, Building & Facilities Maintenance Management, Condition Based Maintenance & Condition Monitoring, Asset & Risk Management, Vibration Condition Monitoring & Diagnostics of Machines, Vibration & Predictive Maintenance, Reliability Improvement & Vibration Analysis for Rotating Machinery, Effective Maintenance Shutdown & Turnaround Management, Engineering Codes & Standards, Rotating Equipment Maintenance, Mechanical Troubleshooting, Static Mechanical Equipment Maintenance, Machinery Failure Analysis, Boiler Operation, Pumps Maintenance & Troubleshooting, Fans, Blowers & Compressors, Process Control Valves, Piping Systems & Process Equipment, Gas Turbines & Compressors Troubleshooting, Advanced Valve Technology, Pressure Vessel Design & Analysis, Steam & Gas Turbine, High Pressure Boiler Operation, FRP Pipe Maintenance & Repair, Centrifugal & Positive Displacement Pump Technology Troubleshooting & Maintenance, Rotating Machinery Best Practices, PD Compressor & Gas Engine Operation & Troubleshooting, Hydraulic Tools & Fitting, Mass & Material Balance, Water Distribution & Pump Station, Tank Farm & Tank Terminal Safety & Integrity Management, Process Piping Design, Construction & Mechanical Integrity, Stack & Noise Monitoring, , BPV Code, Section VIII, Division 2, Facility Planning & Energy Management, Hoist - Remote & Basic Rigging & Slings, Mobile Equipment Operation & Inspection, Heat Exchanger, Safety Relief Valve, PRV & POPRV/PORV, Bearing & Lubrication, Voith Coupling Overhaul, Pump & Valve Technology, Lubrication Inspection, Process Plant Optimization, Rehabilitation, Revamping & Debottlenecking, Engineering Problem Solving and Process Plant Performance & Efficiency. Currently, he is the **Technical Consultant of the **Association of Local Authorities of Greater Thessaloniki** where he is in charge of the mechanical engineering services for piping, pressure vessels fabrications and ironwork.**

During his career life, Mr. Dalas has gained his practical and field experience through his various significant positions and dedication as the **Technical Manager, Project Engineer, Safety Engineer, HVAC Engineer, Air-Conditioning & Cooling Consultant, Deputy Officer, Instructor, Construction Manager, Construction Engineer, Consultant Engineer and Mechanical Engineer** for numerous multi-billion companies including the **Biological Recycling Unit** and the **Department of Supplies of Greece, Alpha Bank Group, EMKE S.A, ASTE LLC** and **Polytechnic College of Evosmos.**

Mr. Dalas has a **Master** degree in **Energy System** from the **International Hellenic University, School of Science & Technology** and a **Bachelor** degree in **Mechanical Engineering** from the **Mechanical Engineering Technical University of Greece** along with a **Diploma in Management & Production Engineering** from the **Technical University of Crete**. Further, he is a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership and Management (ILM)**, a **Certified Project Manager Professional (PMI-PMP)**, a **Certified Instructor/Trainer**, a **Certified Energy Auditor for Buildings, Heating & Climate Systems**, a **Member** of the **Hellenic Valuation Institute** and the **Association of Greek Valuers** and a **Licensed Expert Valuer Consultant** of the **Ministry of Development and Competitiveness**. He has further delivered numerous trainings, courses, seminars, conferences and workshops internationally.





Course Program

The following program is planned for this course. However, the course instructor 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 21st of October 2024

0730 - 0800	Registration & Coffee
0800 - 0815	Welcome & Introduction
0815 - 0830	PRE-TEST
0830 - 0900	Overview of Utility Systems in Refining: Introduction to the Role and Importance of Utility Systems in Refining Operations including Steam Generators, Water Treatment and Storage Tanks
0900 - 0930	Principles of Steam Generation: Basic Principles of Steam Generation, Types of Steam Generators (Boilers) and their Applications in Refining
0930 - 0945	Break
0945 - 1145	Water Chemistry & Treatment Fundamentals: Understanding the Chemistry of Water Treatment Processes Essential for Steam Generation and Refining Processes
1145 - 1230	Storage Tanks: Overview of Storage Tanks Used in the Refining Industry including Types, Design and Applications
1230 - 1245	Break
1245 - 1345	Safety & Environmental Considerations: Key Safety and Environmental Considerations in the Operation and Maintenance of Utilities Equipment
1345 - 1420	Regulatory & Standards Compliance: Overview of Relevant Regulations and Standards Governing Utilities Equipment in Refining Operations
1420 - 1430	Recap
1430	Lunch & End of Day One

Day 2: Tuesday 22nd of October 2024

0730 - 0830	Design & Operation of Steam Generators: Detailed Look at the Design Features, Operation Principles, and Efficiency Factors of Steam Generators
0830 - 0930	Boiler Water Treatment: Water Treatment Techniques Specifically for Boiler Feed Water to Prevent Corrosion and Scaling
0930 - 0945	Break
0945 - 1100	Steam Distribution Systems: Components and Operation of Steam Distribution Systems, Including Piping, Valves and Traps
1100 - 1215	Maintenance Practices for Steam Generators: Routine and Preventive Maintenance Strategies to Ensure Reliability and Efficiency of Steam Generators
1215 - 1230	Break
1230 - 1345	Troubleshooting Common Issues: Identifying and Troubleshooting Common Operational Issues in Steam Generators
1345- 1420	Case Studies: Real-World Examples of Challenges and Solutions in Managing Steam Generators in Refining Operations
1420 - 1430	Recap
1430	Lunch & End of Day Two



Day 3: Wednesday 23rd of October 2024

0730 – 0830	Sources & Quality of Water for Refining: Examination of Water Sources and Quality Requirements for Different Refining Processes
0830 - 0930	Pre-Treatment Processes: Techniques for Pre-Treating Water, Including Sedimentation, Filtration and Chemical Treatment
0930 – 0945	Break
0945 - 1100	Desalination & Demineralization: Methods and Technologies for Desalination and Demineralization in Refining Operations
1100 - 1215	Wastewater Treatment & Reuse: Advanced Wastewater Treatment Technologies and Strategies for Water Reuse Within the Refinery
1215 - 1230	Break
1230 – 1345	Monitoring & Control of Water Treatment Processes: Instruments and Control Strategies for Optimizing Water Treatment Processes
1345 - 1420	Environmental Impact & Sustainability Practices: Discussing the Environmental Impact of Water Use in Refining and Sustainable Water Management Practices
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4: Thursday 24th of October 2024

0730 - 0830	Storage Tanks Design & Types: Detailed Overview of Design Considerations and Types of Storage Tanks in Refining Operations
0830 - 0930	Inspection & Maintenance of Storage Tanks: Techniques for Inspection, Maintenance and Ensuring the Integrity of Storage Tanks
0930 – 0945	Break
0945 - 1100	Emission Control & Vapor Recovery: Technologies and Practices for Controlling Emissions and Recovering Vapors from Storage Tanks
1100 - 1215	Tank Farm Management: Best Practices for Managing Tank Farms including Safety, Inventory Management and Operations Planning
1215 - 1230	Break
1230 – 1345	Emergency Preparedness & Spill Response: Planning for Emergencies, Including Spill Response Strategies and Containment Measures
1345 - 1420	Case Studies: Analysis of Incidents Related to Storage Tanks and Lessons Learned
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5: Friday 25th of October 2024

0730 – 0830	Energy Efficiency in Utilities Equipment: Strategies for Improving Energy Efficiency in Steam Generators, Water Treatment and Storage Tanks
0830 - 0930	Integrating New Technologies: Overview of New Technologies and Innovations in Utilities Equipment and their Potential Applications
0930 – 0945	Break
0945 - 1100	Safety Management Systems for Utilities Operations: Developing and Implementing Safety Management Systems Specific to Utilities Operations
1100 – 1230	Regulatory Updates & Compliance Trends: Recent Regulatory Changes and Trends Affecting Utilities Equipment in the Refining Industry





1230 – 1245	Break
1245 – 1345	Sustainability & Environmental Management: Advanced Strategies for Environmental Management and Sustainability in Utilities Operations
1345 – 1400	Course Conclusion
1400 – 1415	POST-TEST
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course

Practical Sessions

This hands-on, highly-interactive course includes real-life case studies and exercises: -



Course Coordinator

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