COURSE OVERVIEW PE0169
Supervision of Gas Plant Operation

Course Title
Supervision of Gas Plant Operation

Course Reference
PE0169

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

Course Date/Venue

Session(s)	Date	Venue
1	April 14-18, 2025	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
2	June 15-19, 2025	Crowne Meeting Room, Crowne Plaza Al Khobar, KSA
3	August 24-28, 2025	Safir Meeting Room, Divan Istanbul, Turkey
4	October 05-09, 2025	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

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 an overview of Supervision of Gas Plant Operation. It covers the importance and the basic operations of a gas plant including the roles and responsibilities of a supervisor; the basic safety procedures and identification of gas common plant equipment in a gas plant; the types of gases processed and their uses; the plant layout and flow diagrams and advanced safety procedures; identifying, assessing, and mitigating risks in a gas plant; developing effective emergency response plans; and handling and storing hazardous materials safely.

Further, the course will also discuss the personal protective equipment (PPE) and fire safety and prevention; the gas processing cycle and gas processing techniques including separation, compression, dehydration and sweetening; monitoring and controlling the quality of gas produced; managing and disposing waste products; using meters and other measurement devices in the plant; the techniques for improving the performance and efficiency of a gas plant; and the routine maintenance procedures, troubleshooting and major maintenance and overhaul.

During this interactive course, participants will learn the legal and environmental compliance, permit to work systems and proper documentation and record-keeping; the leadership skills, communication and teamwork; the techniques for resolving conflicts among team members; training and developing staff; and the Lean and Six Sigma for continual improvement.

Course Objectives

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

- Apply and gain an in-depth knowledge on gas plant operation supervision
- Discuss the importance and the basic operations of a gas plant including the roles and responsibilities of a supervisor in gas plant operations
- Apply basic safety procedures and identification of common gas plant equipment in a gas plant
- Recognize the types of gases processed and their uses and illustrate plant layout and flow diagrams
- Carryout advanced safety procedures and identify, assess, and mitigate risks in a gas plant
- Develop effective emergency response plans and handle and store hazardous materials safely
- Use personal protective equipment (PPE) and implement fire safety and prevention
- Illustrate gas processing cycle and gas processing techniques including separation, compression, dehydration and sweetening
- Monitor and control the quality of gas produced as well as manage and dispose waste products safely and effectively
- Use meters and other measurement devices in the plant and techniques for improving the performance and efficiency of a gas plant
- Employ routine maintenance procedures, troubleshooting and major maintenance and overhaul
- Review legal and environmental compliance, permit to work systems and proper documentation and record-keeping
- Apply leadership skills, communication and teamwork and techniques for resolving conflicts among team members
- Train and develop staff as well as carryout Lean and Six Sigma for continual improvement

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 conveniently saved in a **Tablet PC**.*

Who Should Attend

This course provides an overview of all significant aspects and considerations of supervision of gas plant operation for process engineers, gas plant supervisors, process operators and technical staff of all levels.

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

Abu Dhabi	**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.
Al Khobar	**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.
Istanbul	**US$ 6,000** per Delegate + **VAT**. This rate includes H-STK® (Haward Smart Training Kit), buffet lunch, coffee/tea on arrival, morning & afternoon of each day.
Dubai	**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: -

- 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.

- 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.

Course Instructor

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. Andrew Ladwig is a **Senior Process & Mechanical Engineer** with over **25 years** of extensive experience within the **Oil & Gas**, **Refinery**, **Petrochemical & Power** industries. His expertise widely covers in the areas of **Ammonia Manufacturing & Process Troubleshooting**, **Distillation Towers**, **Crude Oil Distillation**, **Fundamentals of Distillation** for Engineers, **Distillation** Operation and Troubleshooting, **Advanced Distillation** Troubleshooting, **Distillation** Technology, Vacuum **Distillation**, **Ammonia Storage & Loading** Systems, **Ammonia Plant** Operation, Troubleshooting & Optimization, **Ammonia Recovery**, **Ammonia Plant Safety**, Hazard of **Ammonia Handling**, Storage & Shipping, **Operational Excellence** in **Ammonia Plants**, **Fertilizer Storage** Management (Ammonia & Urea), **Fertilizer Manufacturing** Process Technology, **Sulphur Recovery**, Phenol Recovery & Extraction, **Wax Sweating & Blending**, **Petrochemical & Fertilizer** Plants, **Nitrogen Fertilizer** Production, **Petroleum Industry Process** Engineering, **Refining Process & Petroleum Products**, **Refinery Planning & Economics**, Safe **Refinery Operations**, **Hydrotreating & Hydro-processing**, **Separators** in **Oil & Gas** Industry, **Gas Testing & Energy** Isolations, Gas Liquor Separation, **Industrial Liquid Mixing**, **Wax Bleachers**, **Extractors**, **Fractionation**, Operation & Control of **Distillation**, Process of **Crude ATM & Vacuum Distillation** Unit, **Water Purification**, **Water Transport** & Distribution, **Steam & Electricity**, **Flame Arrestors**, **Coal Processing**, **Environmental Emission Control**, R&D of **Wax Blending**, **Wax** Molding/Slabbing, **Industrial Drying**, Principles, Selection & Design, Certified **Process Plant** Operations, Control & Troubleshooting, **Operator** Responsibilities, **Tank Farm Operations**, **Storage Tanks Operations** & Measurements, **Process Plant** Troubleshooting & Engineering Problem Solving, **Process Plant Performance**, Efficiency & Optimization, Continuous Improvement & Benchmarking, **Process Troubleshooting** Techniques, Oil & Gas Operation/Introduction to **Surface Facilities**, **Pressure Vessel** Operation, **Process Equipment** Performance & Troubleshooting, **Plant Startup & Shutdown**, **Startup & Shutdown** the Plant While Handling Abnormal Conditions, **Flare & Relief** System, **Process Gas Plant** Start-up, Commissioning & Problem Solving, **Process Liquid** and **Process Handling & Measuring** Equipment. Further, he is also well-versed in **Compressors & Turbines** Operation, Maintenance & Troubleshooting, **Heat Exchanger** Overhaul & Testing Techniques, Balancing of **Rotating Machinery** (**BRM**), **Pipe Stress** Analysis, **Valves & Actuators** Technology, Inspect & Maintain **Safeguarding Vent & Relief System**, Certified Inspectors for **Vehicle & Equipment**, Optimizing **Equipment Maintenance** & Replacement Decisions, Certified Maintenance Planner (**CMP**), Certified Planning and Scheduling Professional (**AACE-PSP**), **Tank Design**, Construction, Inspection & Maintenance, **Material Cataloguing**, Specifications, Handling & Storage, **Steam Trap** Design, Operation, Maintenance & Troubleshooting, **Steam Trapping & Control**, **Column**, **Pump & Exchangers**, Troubleshooting & Design, **Rotating Equipment** Operation & Troubleshooting, **Control & ESD** System, **Detailed Engineering Drawings**, Codes & Standards, **Budget** Preparation, Allocation & Cost Control, Root Cause Analysis (**RCA**), **Production Optimization**, Permit to Work (**PTW**), Project Engineering, **Data** Analysis, **Process Hazard** Analysis (**PHA**), **HAZOP** Study, Sampling & Analysis, **Training** Analysis, **Job Analysis** Techniques, Storage & Handling of **Toxic Chemicals & Hazardous Materials**, **Hazardous Material** Classification & Storage/Disposal, **Dangerous Goods**, Environmental Management System (**EMS**), Supply Chain, Purchasing, Procurement, **Logistics** Management & **Transport** & **Warehousing** & **Inventory**, **Risk** Monitoring Authorized Gas Tester (**AGT**), Confined Space Entry (**CSE**), Personal Protective Equipment (**PPE**), Fire & Gas, First Aid and Occupational Health & Safety.

During his career life, Mr. Ladwig has gained his practical experience through his various significant positions and dedication as the **Mechanical Engineer**, **Project Engineer**, **Reliability & Maintenance Engineer**, **Maintenance Support Engineer**, **Process Engineer**, **HSE Supervisor**, **Warehouse Manager**, **Quality Manager**, **Business Analyst**, **Senior Process Controller**, **Process Controller**, **Safety Officer**, **Mechanical Technician**, **Senior Lecturer** and **Senior Consultant/Trainer** for various companies such as the Sasol Ltd., Sasol Wax, Sasol Synfuels, just to name a few.

Mr. Ladwig has a **Bachelor's** degree in **Chemical Engineering** and a **Diploma** in **Mechanical Engineering**. Further, he is a **Certified Instructor/Trainer**, a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management** (**ILM**) and has delivered various trainings, workshops, seminars, courses and conferences internationally.

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: ***Introduction to Gas Plant Operations & Safety Procedures***

0730 – 0800	*Registration & Coffee*
0800 – 0815	*Welcome & Introduction*
0815 – 0830	***PRE-TEST***
0830 – 0930	***Introduction to Gas Plant Operations:*** *Overview of the Gas Industry, its Importance & the Basic Operations of a Gas Plant*
0930 – 0945	*Break*
0945 – 1030	***Roles & Responsibilities of a Supervisor:*** *Discussing what Supervisors do, their Role in Gas Plant Operations & the Skills they Need to be Effective*
1030 – 1130	***Basic Safety Procedures:*** *Covering the Safety Procedures Required in Gas Plant Operations*
1130 – 1230	***Identification of Gas Plant Equipment:*** *Familiarizing Participants with Common Equipment Found in a Gas Plant*
1230 – 1245	*Break*
1245 – 1330	***Types of Gases Processed:*** *Explanation of the Types of Gases Processed & their Uses*
1330 – 1420	***Plant Layout & Flow Diagrams:*** *Understanding How Plants are Laid Out & How to Read Flow Diagrams*
1420 – 1430	***Recap***
1430	*Lunch & End of Day One*

Day 2: ***Advanced Safety Procedures & Risk Management***

0730 – 0830	***Advanced Safety Procedures:*** *Covering more Complex Safety Procedures & Protocols*
0830 – 0930	***Risk Management:*** *Understanding How to Identify, Assess & Mitigate Risks in a Gas Plant*
0930 – 0945	*Break*
0945 – 1100	***Emergency Response Plans:*** *Developing Effective Emergency Response Plans*
1100 – 1230	***Handling Hazardous Materials:*** *Training on How to Handle & Store Hazardous Materials Safely*
1230 – 1245	*Break*
1245 – 1330	***Personal Protective Equipment (PPE):*** *Importance, Usage & Maintenance of PPE*
1330 – 1420	***Fire Safety & Prevention:*** *Training on Fire Safety, Including Prevention Measures & what to do in Case of a Fire*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Two*

Day 3: ***Gas Processing & Quality Control***

0730 – 0830	***Overview of Gas Processing:*** *Detailed Overview of the Gas Processing Cycle from Extraction to Distribution*
0830 – 0930	***Gas Processing Techniques:*** *Review of Common Techniques Used in Gas Processing, Including Separation, Compression, Dehydration & Sweetening*
0930 – 0945	*Break*

0945 – 1100	***Quality Control:*** *Explanation of How to Monitor & Control the Quality of Gas Produced*
1100 – 1230	***Waste Management:*** *Understanding How to Manage & Dispose of Waste Products Safely & Effectively*
1230 – 1245	*Break*
1245 – 1330	***Metering & Measurements:*** *Learning How to use Meters & Other Measurement Devices in the Plant*
1330 – 1420	***Plant Performance Optimization:*** *Techniques for Improving the Performance & Efficiency of a Gas Plant*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Three*

Day 4: ***Maintenance, Troubleshooting & Legal Compliance***

0730 – 0830	***Routine Maintenance Procedures:*** *Learning About the Regular Maintenance Activities Required in a Gas Plant*
0830 – 0930	***Troubleshooting:*** *How to Identify & Resolve Common Problems in Gas Plant Operations*
0930 – 0945	*Break*
0945 – 1100	***Major Maintenance & Overhaul:*** *Planning & Executing Major Maintenance Tasks & Overhauls*
1100 – 1230	***Legal & Environmental Compliance:*** *Understanding the Laws & Regulations Governing Gas Plant Operations*
1230 – 1245	*Break*
1245 – 1330	***Permit to Work Systems:*** *Understanding the Importance & Implementation of Permit to Work Systems in a Gas Plant*
1330 – 1420	***Record Keeping & Documentation:*** *Importance of Proper Documentation & Record-Keeping in Legal Compliance*
1420 - 1430	***Recap***
1430	*Lunch & End of Day Four*

Day 5: ***Leadership, Communication & Continual Improvement***

0730 – 0830	***Leadership Skills for Supervisors:*** *Developing Leadership Skills Specific to Supervising a Gas Plant*
0830 – 0930	***Communication & Teamwork:*** *Improving Communication & Teamwork in a Gas Plant Setting*
0930 – 0945	*Break*
0945 – 1030	***Conflict Resolution:*** *Techniques for Resolving Conflicts Among Team Members*
1030 – 1130	***Training & Developing Staff:*** *How to Train & Develop your Team Members for Improved Performance & Career Growth*
1130 – 1230	***Continual Improvement:*** *Introduction to Methods Like Lean & Six Sigma for Continual Improvement*
1230 – 1245	*Break*
1245 – 1345	***Wrap-up & Evaluation:*** *Wrap up the Course, Address Any Remaining Questions & Evaluate Participants Understanding*
1345 – 1400	***Course Conclusion***
1400 – 1415	***POST-TEST***
1415 – 1430	*Presentation of Course Certificates*
1430	*Lunch & End of Course*

Practical Sessions

This practical and highly-interactive course includes real-life case studies and exercises:-

Course Coordinator

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