

**COURSE OVERVIEW HE0270**  
**Safe Isolation of Plant & Equipment**

**Course Title**

Safe Isolation of Plant & Equipment

**Course Reference**

HE0270

**Course Date/Venue**

Session 1: May 04-08, 2025/Al Khobar Meeting Room, Hilton Garden Inn, Al Khobar, KSA

Session 2: August 17-21, 2025/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE



**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 Safe Isolation of Plant & Equipment. It covers the purpose of LOTO and the importance of energy isolation in port environments; the types of hazardous energies covering electrical, mechanical, hydraulic, pneumatic, chemical, and thermal energies; the OSHA 1910.147 standard as well as the roles and responsibilities of authorized employees, affected employees and other employees; the types of locks, tags and devices; the selection of appropriate equipment for specific port machinery; and the step-by-step LOTO procedures, hazardous energy sources in port machinery and energy source diagrams and labelling.



Further, the course will also discuss the energy isolation in port operations; verifying isolation and zero-energy state; coordinating lockout/tagout procedures for multiple workers and departments; the best practices for team-based LOTO; handling LOTO in emergency shutdowns or rescue; the proper procedures for emergency lock removal; selecting and using lockout tagout devices; the isolation of complex and multi-source energy systems; the portable LOTO kits for mobile teams; and the proper procedures for LOTO during troubleshooting and non-standard tasks.

During this interactive course, participants will learn the risk assessments and work permits; the LOTO audits, documentation requirements and compliance; managing external contractors for consistent LOTO practices; integrating contractor safety into port operations; the effective communication between teams during energy isolation; the visual and verbal alert systems in high-noise port environments; the mandatory LOTO training schedules, tagging protocols and documentation and best practices for LOTO recordkeeping; the LOTO toolbox talks and safety briefings; handling disagreements in LOTO applications among workers; the escalation procedures and conflict resolution techniques; gathering feedback from workers on LOTO procedures and improving LOTO policies based on field reports and experiences; identifying and isolating energy sources in practice; and troubleshooting common LOTO issues by addressing lockout failures and restoring energy safely.

### **Course Objectives**

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

- Apply and gain an in-depth knowledge on Safe Isolation of Plant & Equipment
- Discuss the purpose of LOTO and the importance of energy isolation in port environments
- Identify the types of hazardous energies covering electrical, mechanical, hydraulic, pneumatic, chemical, and thermal energies
- Discuss OSHA 1910.147 standard as well as the roles and responsibilities of authorized employees, affected employees and other employees
- Recognize the types of locks, tags and devices and select appropriate equipment for specific port machinery
- Illustrate the step-by-step LOTO procedures, identify hazardous energy sources in port machinery and use energy source diagrams and labelling
- Apply energy isolation in port operations and verify isolation and zero-energy state
- Coordinate lockout/tagout procedures for multiple workers and departments and best practices for team-based LOTO
- Handle LOTO in emergency shutdowns or rescue and implement proper procedures for emergency lock removal
- Select and use lockout tagout devices as well as recognize isolation of complex and multi-source energy systems
- Design and use portable LOTO kits for mobile teams and apply proper procedures for LOTO during troubleshooting and non-standard tasks including risk assessments and work permits
- Schedule and conduct LOTO audits and review documentation requirements and compliance
- Manage external contractors for consistent LOTO practices and integrate contractor safety into port operations
- Apply effective communication between teams during energy isolation and discuss visual and verbal alert systems in high-noise port environments

- Develop mandatory LOTO training schedules, tagging protocols and documentation and best practices for LOTO recordkeeping
- Organize and conduct LOTO toolbox talks and safety briefings, handle disagreements in LOTO applications among workers and apply escalation procedures and conflict resolution techniques
- Gather feedback from workers on LOTO procedures and improve LOTO policies based on field reports and experiences
- Identify and isolate energy sources in practice and troubleshooting common LOTO issues by addressing lockout failures and restoring energy safely

**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 safe isolation of plant & equipment for HSE management and staff, plant department managers & engineers, electrical & electronic engineers, instrumentation & control engineers, mechanical engineers, process engineers, maintenance engineers, safety officers, environmental response leaders, site incident controllers, site main controllers, loss prevention and the emergency services.

**Course Fee**

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

In addition to the Course Manual, participants will receive an e-book “The Safe Isolation of Plant and Equipment”, published by HSE Books.

**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. Eric Matthews** is a **Senior SHEQ Consultant** with over **35 years** of industrial experience within **Oil, Gas and Power** industries. His expertise includes **Environmental Management System, ISO 14001, ISO 9001, OHSAS 18001, Safety Management System, Industrial Hygiene, Construction Safety (STOP), Process Safety Management (PSM), Risk Management, Risk Assessment, OSHA, SHEQ, HAZOP, PHA, Industrial Hygiene, Confined Space Entry, Fall Protection, Work Permit & First Aid, Forklift Operations, Accident & Incident Prevention, Site Inspection, HSE Leadership, Safety Attitude and Industrial Plant Safety** as well as Pneumatic, Control Systems and Logic Boards. Moreover, his experience includes Quality Management System (**QMS**), Change Management, Project Management, Contract Management, Business Management, Time Management, Performance Management, Supervisory & Management Skills, Coaching & Mentoring and Strategic Decision Making. He was the **Managing Director** of **Ken Matthews & Associates Training Consultancy**. Further, he is a **Registered and Certified Trainer, Assessor, Moderator, Verifier and Program Designer & Developer** as well as an **Authorized Accreditation Advisor**.

During Mr. Matthews' career life, he has shared his knowledge and practical expertise through the continuous and numerous trainings internationally. He started his profession from various challenging positions such as the **Tool Maker, Mechanical Technician, Sea Going Engineer, Safety Officer, Senior Lecturer/Professor, College Mentorship Programme Head, Mechanical Engineering Curriculum Designer, Learning Material Developer, Trainer & Assessor**.

Mr. Matthews has **Bachelor** degree in **Industrial & Organizational Psychology** with **Honours (Cum Laude)**. Further, he is a **Certified Instructor/Trainer**; a **Certified Trainer/Assessor** by the **City & Guilds of London Institute**; a **Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)**; a **Registered SETA Assessor/Moderator/Skills Coach** and an active member of the **British Institute of Works Managers** and **British Institute of Personnel Managers** and delivered innumerable trainings, courses, seminars and workshops worldwide.

### 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 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 &amp; Coffee</i>
0800 – 0815	<i>Welcome &amp; Introduction</i>
0815 – 0830	<b>PRE-TEST</b>
0830 – 0900	<b>Overview of LOTO &amp; Energy Control</b> <i>Definition &amp; Purpose of LOTO • Importance of Energy Isolation in Port Environments</i>
0900 – 1000	<b>Types of Hazardous Energies</b> <i>Electrical, Mechanical, Hydraulic, Pneumatic, Chemical, &amp; Thermal Energies • Examples from the Port Industry (e.g., Cranes, Conveyors)</i>
1000 – 1015	<i>Break</i>
1015 – 1115	<b>OSHA Regulations &amp; Standards</b> <i>Overview of OSHA 1910.147 Standard • Other Relevant Regulatory Standards &amp; DP World's Safety Requirements.</i>
1115 – 1200	<b>LOTO Roles &amp; Responsibilities</b> <i>Authorized Employees, Affected Employees, &amp; Other Employees • Key Duties of Each Role</i>
1200 – 1215	<i>Break</i>
1215 – 1330	<b>Case Studies of LOTO Failures &amp; Incidents</b> <i>Real-World Port Industry Examples • Lessons Learned &amp; Consequences of Inadequate LOTO Practices</i>
1330 – 1420	<b>Basics of LOTO Equipment</b> <i>Types of Locks, Tags, &amp; Devices • Selecting Appropriate Equipment for Specific Port Machinery</i>
1420 – 1430	<b>Recap</b>
1430	<i>Lunch &amp; End of Day One</i>

#### **Day 2**

0730 – 0830	<b>Step-by-Step LOTO Procedures</b> <i>Sequence of Energy Control Steps • Applying &amp; Removing Locks &amp; Tags.</i>
0830 – 0930	<b>Identification of Energy Sources</b> <i>Methods to Identify Hazardous Energy Sources in Port Machinery • Using Energy Source Diagrams &amp; Labeling</i>



0930 – 0945	Break
0945 – 1100	<b>Energy Isolation in Port Operations</b> Practical Examples of Energy Isolation in Crane, Conveyor, & Hydraulic Systems
1100 – 1200	<b>Verifying Isolation &amp; Zero-Energy State</b> Techniques for Testing & Verification • Tools for Ensuring a Safe Working Environment
1200 – 1215	Break
1215 – 1330	<b>Group Lockout/Tagout Procedures</b> Coordinating LOTO for Multiple Workers & Departments • Best Practices for Team-Based LOTO
1330 – 1420	<b>Emergency Situations &amp; LOTO</b> Handling LOTO in Emergency Shutdowns or Rescues • Procedures for Emergency Lock Removal
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Two

**Day 3**

0730 – 0900	<b>Lock Out Tag Out Devices: Selection &amp; Use</b> Advanced Devices for Various Port Equipment (Cable Lockouts, Valve Lockouts, etc.) • Adapting Devices for Complex Systems
0900 – 0915	Break
0915 – 1045	<b>Isolation of Complex &amp; Multi-Source Energy Systems</b> Challenges In Isolating Systems with Multiple Energy Sources • Case Studies from Port Machinery Maintenance
1045 – 1200	<b>Portable LOTO Kits &amp; their Application</b> Designing & Using Portable LOTO Kits for Mobile Teams • Case Examples for Vessel & Crane Repairs
1200 – 1215	Break
1215 – 1330	<b>LOTO for Non-Routine &amp; Complex Tasks</b> Procedures for LOTO During Troubleshooting & Non-Standard Tasks • Risk Assessments & Work Permits
1330 – 1400	<b>Periodic Inspections &amp; Audits of LOTO</b> Scheduling & Conducting LOTO Audits • Documentation Requirements & Compliance
1400 – 1420	<b>Handling Contractor Involvement in LOTO</b> Managing External Contractors for Consistent LOTO Practices • Integrating Contractor Safety into Port Operations
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Three

**Day 4**

0730 – 0830	<b>Communication Protocols for LOTO</b> Effective Communication Between Teams During Energy Isolation • Visual & Verbal Alert Systems in High-Noise Port Environments.
0830 – 0930	<b>Training &amp; Retraining Requirements</b> Mandatory LOTO Training Schedules • Refresher Courses & Competency Checks
0900 – 0915	Break





0915 – 1045	<b>Tagging Protocols &amp; Documentation</b> <i>Detailed Explanation of Tag Types, Purposes, &amp; Information • Best Practices for LOTO Recordkeeping</i>
1045 – 1200	<b>Lockout Tagout Safety Meetings</b> <i>Organizing &amp; Conducting LOTO Toolbox Talks &amp; Safety Briefings • Role-Playing Exercises for Communication During LOTO</i>
1200 – 1215	Break
1215 – 1420s	<b>Conflict Resolution in LOTO Implementation</b> <i>Handling Disagreements in LOTO Applications Among Workers • Escalation Procedures &amp; Conflict Resolution Techniques</i>
1420 – 1430	<b>Recap</b>
1430	Lunch & End of Day Four

**Day 5**

0730 – 0800	<b>Employee Feedback &amp; Continuous Improvement</b> <i>Gathering Feedback from Workers on LOTO Procedures • Improving LOTO Policies Based on Field Reports &amp; Experiences</i>
0800 - 0900	<b>LOTO Hands-On Workshop</b> <i>Practical Scenarios &amp; Equipment-Based Exercises • LOTO Drills for Various Port Machinery &amp; Energy Systems</i>
0900 – 0915	Break
0915 – 1145	<b>Simulating LOTO on Complex Equipment</b> <i>Live Simulations on Crane Systems, Dock Machinery, &amp; Other Port-Related Equipment • Identifying &amp; Isolating Energy Sources in Practice</i>
1145 – 1215	<b>Troubleshooting Common LOTO Issues</b> <i>Practical Troubleshooting Exercises • Addressing Lockout Failures &amp; Restoring Energy Safely</i>
1215 – 1230	Break
1230 – 1345	<b>Mock LOTO Audit &amp; Feedback Session</b> <i>Conducting a Mock LOTO Audit with Class Participation • Reviewing Findings &amp; Applying Corrective Actions</i>
1345 – 1400	<b>Course Conclusion</b>
1400 – 1415	<b>POST-TEST</b>
1415 – 1430	<i>Presentation of Course Certificates</i>
1430	Lunch & End of Course





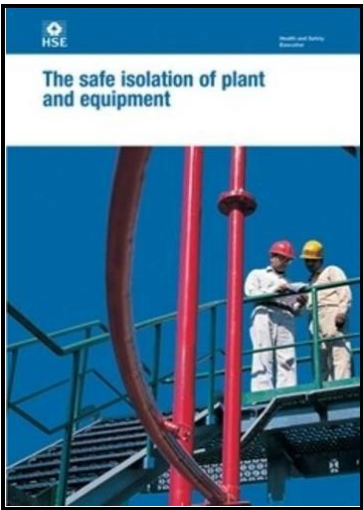
**Practical Sessions**

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



**Book(s)**

As part of the course kit, the following e-book will be given to all participants:



**Title** : The Safe Isolation of Plant and Equipment  
**ISBN** : 978-0717661718  
**Author** : Health and Safety Executive of the UK  
**Publisher** : HSE Books

**Course Coordinator**

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