



COURSE OVERVIEW EE0452 HV Switching

Course Title

HV Switching

Course Date/Venue

Session 1: March 20-24, 2024/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Session 2: April 16-20, 2024/Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE

Course Reference

EE0452

Course Duration/Credits

Five days/3.0 CEUs/30 PDHs

Course Description



This practical and highly-interactive course includes various practical sessions where participants will be engaged in HV power switching and other working practices.



This course is designed to provide participants with a detailed and up-to-date overview of high voltage switching operations. It covers the legislation and standards of high voltage switching operations; the risk management and control as well as the proper approach to high voltage-safe systems of work, permit types and permit procedures; operating local high voltage and low voltage switchgear; developing high voltage switchgear program; controlling permit to work operations; performing switching to a switching program; coordinating and directing switching program; and working safely near live electrical apparatus.



During this interactive course, participants will learn the access procedures to work on or near electrical network infrastructure; the HV field switching operation and power system substation switching operation to a given schedule; developing high voltage switching schedule; coordinating power systems permit procedures; directing power system switching schedules; and solving the energy supply network equipment problems in a professional manner.



Course Objectives

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

- Get certified as a “*Certified Switchman*”
- Review the legislation and standards of high voltage switching operations
- Carryout risk management and control as well as the proper approach to high voltage-safe systems of work, permit types and permit procedures
- Operate local high voltage and low voltage switchgear and develop high voltage switchgear program
- Apply control permit to work operations, perform switching to a switching program as well as coordinate and direct switching program
- Work safely near live electrical apparatus
- Apply access procedures to work on or near electrical network infrastructure
- Perform HV field switching operation and power system substation switching operation to a given schedule
- Develop high voltage switching schedule and coordinate power systems permit procedures and direct power system switching schedules
- Solve energy supply network equipment problems in a professional manner

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 high voltage switching operations for electrical workers and engineers working with high and low voltage switchgear in industrial facilities and networks.

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 Certificate(s)

(1) Internationally recognized Competency Certificates and Plastic Wallet Cards will be issued to participants who completed a minimum of 80% of the total tuition hours and successfully passed the exam at the end of the course. Successful candidate will be certified as a "Certified Switchman". Certificates are valid for 5 years.

Recertification is FOC for a Lifetime.

Sample of Certificates

The following are samples of the certificates that will be awarded to course participants:-





- (2) Official Transcript of Records will be provided to the successful delegates with the equivalent number of ANSI/IACET accredited Continuing Education Units (CEUs) earned during the course.

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Haward Technology Middle East
Continuing Professional Development (HTME-CPD)

CEUs
Page 1 of 1

CEU Official Transcript of Records

TOR Issuance Date: 20-Sep-18
HTME No.: PAR10475
Participant Name: Farhan Al Khatib

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
EE0452	Certified Switchman: High Voltage Switching Operations	September 16-20, 2018	30.0	3.0

Total No. of CEU's Earned as of TOR Issuance Date **3.0**

TRUE COPY


 Maricel De Guzman
 Academic Director

Haward Technology has been approved as an Authorized Provider by the International Association for Continuing Education and Training (IACET), 1760 Old Meadow Road, Suite 500, McLean, VA 22102, USA. In obtaining this approval, Haward Technology has demonstrated that it complies with the ANSI/IACET 1-2013 Standard which is widely recognized as the standard of good practice internationally. As a result of their Authorized Provider membership status, Haward Technology is authorized to offer IACET CEUs for programs that qualify under the ANSI/IACET 1-2013 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 Association 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 is accredited by











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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 center, Haward Technology meets all of the international higher education criteria and standards set by BAC.

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 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. Pan Marave, PE, MSc, BEng, is a Senior Electrical & Instrumentation Engineer with over 40 years of extensive experience in Oil, Gas, Petrochemical, Refinery & Power industries. His expertise includes Circuit Breaker, HV Switchgear Maintenance, HV/LV Electrical Authorisation, Basic Electricity, Electrical & Special Hazards, Personnel Protection, HV/LV Equipment, Motor Controllers, Electrical Switching Practices, Emergency Planning, Safety Management, Safety Instrumented Systems (SIS), Safety Integrity Level (SIL), Emergency Shutdown (ESD); DCS, SCADA & PLC; Measurement (Flow, Temperature, Pressure); Process Analyzers & Analytical Instrumentation; Process Control, Instrumentation & Safeguarding; Process Controller, Control Loop & Valve Tuning; Industrial Distribution Systems; Industrial Control & Control Systems, Power Systems Protection & Relaying; Earthing, Bonding, Grounding, Lightning & Surge Protection; Electric Power Substation & Systems; Electrical Engineering Principles; Motor Control Circuit; Electrical Fault Analysis; Electrical Networks & Distribution Cables; Circuit Breakers, Switchgears, Transformers, Hazardous Areas Classification and Detailed Engineering Drawings, Codes & Standards. Furthermore, he is also well-versed in Microprocessors Structure, Lead Auditor (ISO 9000:2000), ISO 9002, Quality Assurance, and Projects & Contracts Management.

Presently, Mr. Marave is the **Technical Advisor of Chamber of Industry & Commerce** in Greece. Prior to this, he gained his thorough practical experience through several positions as the **Technical Instructor, Engineering Manager, Electronics & Instruments Head, Electrical, Electronics & Instruments Maintenance Superintendent, Assistant General Technical Manager and Engineering Supervisor** of various international companies such as the **Alumil Mylonas, Athens Papermill, Astropol** and the **Science Technical Education**.

Mr. Marave is a **Registered Professional Engineer** and has **Master's and Bachelor's** degrees in **Electrical Engineering** from the **Polytechnic Institute of New York and Pratt Institute of New York (USA)** respectively. Further, he is a **Certified Instructor/Trainer, a Certified Internal Verifier/Assessor/Trainer** by the **Institute of Leadership & Management (ILM)** and an active member of the **Technical Chamber** and the **Institute of Electrical and Electronics Engineer (IEEE)** in Greece. He has presented and delivered **numerous international** courses, conferences, trainings and workshops 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

0730 – 0800	Registration & Coffee
0800 – 0815	Welcome & Introduction
0815 – 0830	PRE-TEST
0830 – 0900	Legislation & Standards
0900 – 0915	Risk Management & Control
0915 - 0930	Approach to High Voltage – Safe Systems of Work, Permit Types & Permit Procedures
0930 – 0945	Break
0945 – 1030	Operate Local HV Switchgear
1030 – 1100	Operate Local LV Switchgear
1100 – 1130	Develop HV Switchgear Program
1130 – 1245	Break
1245 – 1330	Control Permit to Work Operations
1330 - 1420	Perform Switching to a Switching Program
1420 – 1430	Recap
1430	Lunch & End of Day One

Day 2

0730 – 0815	Coordinate & Direct Switching Program
0815 – 0845	Working Safely near Live Electrical Apparatus
0845 – 0930	Apply Access Procedures to Work on or Near Electrical Network Infrastructure
0930 – 0945	Break
0945 – 1015	Perform HV Field Switching Operation to a Given Schedule
1015 – 1145	Perform Power System Substation Switching Operation to a Given Schedule
1145 - 1230	Develop High Voltage Switching Schedule
1230 – 1245	Break
1245 – 1315	Coordinate Power Systems Permit Procedures
1315 – 1345	Coordinate & Direct Power System Switching Schedules
1345 - 1420	Solve Problems in Energy Supply Network Equipment
1420 – 1430	Recap
1430	Lunch & End of Day Two

Day 3

0730 – 0930	Practical Sessions Switching Programs
0930 – 0945	Break
0945 – 1100	Practical Sessions (cont'd) Isolation Certificates
1100 – 1230	Practical Sessions (cont'd) Isolation Certificates (cont'd)



1230 – 1245	Break
1245 – 1420	Practical Sessions (cont'd) Electrical Permit to Work
1420 – 1430	Recap
1430	Lunch & End of Day Three

Day 4

0730 – 0930	Practical Sessions (cont'd) Danger Notices & Pre-Cautions
0930 – 0945	Break
0945 – 1100	Practical Sessions (cont'd) Sanction for Test
1100 – 1230	Practical Sessions (cont'd) Sanction for Test (cont'd)
1230 – 1245	Break
1245 – 1420	Practical Sessions (cont'd) Lock-Out & Tag-Out
1420 – 1430	Recap
1430	Lunch & End of Day Four

Day 5

0730 – 0930	Practical Sessions (cont'd) Safe Key Systems
0930 – 0945	Break
0945 – 1100	Practical Sessions (cont'd) Electrical Safety Systems- Interlocks-Earthing-Isolation & Access Control
1100 – 1200	Practical Sessions (cont'd) Electrical Safety Systems- Interlocks-Earthing-Isolation & Access Control (cont'd)
1200 – 1215	Break
1215 – 1245	Practical Sessions (cont'd) Fault Reports
1245 – 1300	Course Conclusion Using this Course Overview, the Instructor(s) will Brief Participants about the Course Topics that were Covered During the Course
1300 – 1400	COMPETENCY EXAM
1400 – 1415	Evaluation of Competency Exam
1415 – 1430	Presentation of Course Certificates
1430	Lunch & End of Course



Practical Sessions

This practical and highly-interactive course includes the following practical sessions:-



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|-----------------------------------|--|
| (1) Switching Programs | (6) Lock-Out & Tag-Out |
| (2) Isolation Certificates | (7) Safe Key Systems |
| (3) Electrical Permit to Work | (8) Electrical Safety Systems-Interlocks-
Earthing-Isolation & Access Control |
| (4) Danger Notices & Pre-Cautions | (9) Fault Reports |
| (5) Sanction for Test | |

Course Coordinator

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