

**COURSE OVERVIEW EE1002**  
**Classification of Locations for Electrical Installations at Petroleum Facilities (API 500/ API 505/ API RP 14FZ)**

**Course Title**

Classification of Locations for Electrical Installations at Petroleum Facilities (API 500/ API 505/ API RP 14FZ)

**Course Reference**

EE1002

**Course Duration/Credits**

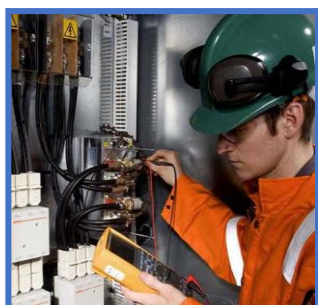
Five days/3.0 CEUs/30 PDHs



**Course Date/Venue**

Session(s)	Date	Venue
1	January 05-09, 2025	Oryx Meeting Room, Double Tree by Hilton Al Saad, Doha, Qatar
2	April 20-24, 2025	Boardroom 1, Elite Byblos Hotel Al Barsha, Sheikh Zayed Road, Dubai, UAE
3	July 07-11, 2025	Ajman Meeting Room, Grand Millennium Al Wahda Hotel, Abu Dhabi, UAE
4	October 05-09, 2025	Al Khobar Meeting Room, Hilton Garden Inn, Al Khobar, KSA

**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 classification of location for electrical installations at petroleum facilities in accordance with API 500, 505 & RP14FZ. It covers the conditions for fire and explosion in petroleum facilities; the law and regulators, recommended practices and standards; the hazardous (classified) locations API 500/505 including hazardous area classification; the installation, maintenance, and operation of electrical equipment; the API RP 500, API RP 14F, API 505 and API 14FZ; the area classifications for API hazardous classified and unclassified; the classification based on API RP; the API RP 505 and 500 'preferred' symbols for classified locations; and the atmospheric mixtures of explosive gas and air.



Further, the course will also discuss the extent of areas, release of gas and temperature; the API RP 500 and 505 flammable (explosive) limits; the API RP design installation and maintenance; why API RP 14F and 14FZ are not used to classify areas; the electrical equipment for hazardous (classified) areas; the electrical enclosures, API RP 14F explosion-proof and typical motor name plate; the API and NEC general purpose equipment; the API RP 14F hermetically sealed and API RP 14F intrinsically safe; and the pressurized or purged, clean air (non classified area) and API RP 14F cables and accessories.



During this interactive course, participants will learn the API RP 14F installation 6.8 conduit and cable seals and sealing methods; the grounding, electrical motors and portable equipment; the API14 RP FZ design, installation and maintenance of electrical systems; the API RP 14FZ listings, markings and documentation; the equipment selection division 1, oil immersion (type “o”), increased safety (type “e”) equipment, powder filling equipment and encapsulation (type “m”) equipment; and the API RP 14FZ electrical distribution systems.

### **Course Objectives**

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

- Classify the locations for electrical installations at petroleum facilities in accordance with API 500, API 505 and API RP 14FZ
- Identify conditions for fire and explosion in petroleum facilities
- Discuss the law and regulators including recommended practices and standards
- Explain hazardous (classified) locations API 500/505 and hazardous area classification
- Install, maintain and operate electrical equipment and discuss API RP 500, API RP 14F, API 505 and API 14FZ
- Recognize area classifications for API hazardous classified and unclassified
- Classify hazard based on API RP and discuss API RP 505 and 500 ‘preferred’ symbols for classified locations
- Identify the atmospheric mixtures of explosive gas and air including the extent of areas, release of gas and temperature
- Recognize API RP 500 and 505 flammable (explosive) limits and carryout API RP design installation and maintenance
- Explain why API RP 14F and 14FZ are not used to classify areas
- Identify electrical equipment for hazardous (classified) areas, electrical enclosures, API RP 14F explosion-proof and typical motor nameplate
- Differentiate API and NEC general purpose equipment as well as API RP 14F hermetically sealed and API RP 14F intrinsically safe
- Describe pressurized or purged, clean air (non classified area) and API RP 14F cables and accessories
- Employ API RP 14F installation 6.8 conduit and cables seals and sealing methods
- Discuss grounding, electrical motors and portable equipment
- Design, install and maintain electrical systems as well as API14 RP FZ
- Review API RP 14FZ listings, markings and documentation
- Determine equipment selection division 1, oil immersion (type “o”), increased safety (type “e”) equipment, powder filling equipment and encapsulation (type “m”) equipment
- Discuss electrical distribution systems as per API RP 14 FZ

### **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 classification of locations for electrical installations at petroleum facilities in accordance with API 500/ API 505 and API RP14FZ for engineers and technicians working in industrial facilities.

### **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**

Doha	<b>US\$ 6,000</b> per Delegate. 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.
Abu Dhabi	<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.
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.

### **Accommodation**

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

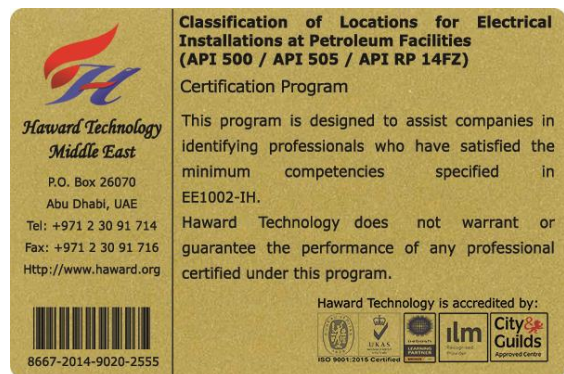
**Course Certificate(s)**

- (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. 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.

\* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \*



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



### CEU Official Transcript of Records

**TOR Issuance Date:** 14-Nov-19

**HTME No.** 8667-2014-9020-2555

**Participant Name:** Fahim Al Qahtani

Program Ref.	Program Title	Program Date	No. of Contact Hours	CEU's
EE1002-IH	Classification of Locations for Electrical Installations at Petroleum Facilities (API 500 / API 505 / API RP 14FZ)	Nov 10-14, 2019	30	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), 2201 Cooperative Way, Suite 600, Herndon, VA 20171, 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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\* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \* CEUs \* Haward Technology \*

## 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. 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 **Earthing, Bonding, Grounding, Lightning & Surge Protection, Hazardous Areas Classification** and Detailed Engineering Drawings, **Motor Controllers, Motor Control Circuit, Basic Electricity, Electrical & Special Hazards, CEMS Operations and Maintenance, ABB 11KV Distribution Switchgear, Electrical Switching Practices, HV Switchgear Maintenance, Operation & Maintenance of Rotork make MOVs, Maintaining Instrument Air Compressors, Circuit Breaker, HV/LV Electrical Authorisation, Personnel Protection, HV/LV Equipment, 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, Electric Power Substation & Systems, Electrical Engineering Principles, Electrical Fault Analysis, Electrical Networks & Distribution Cables, Circuit Breakers, Switchgears, Transformers, 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	<b>PRE-TEST</b>
0830 - 0900	<i>Conditions for Fire &amp; Explosion in Petroleum Facilities</i>
0900 - 0930	<i>Law &amp; the Regulators, Recommended Practices &amp; Standards</i>
0930 - 0945	Break
0945 - 1030	<i>Hazardous (Classified) Locations API 500/505</i>
1030 - 1100	<i>Hazardous Area Classification</i>
1100 - 1130	<i>CFR 250.114 Install, Maintain, &amp; Operate Electrical Equipment</i>
1130 - 1230	<i>API RP 500 &amp; API RP 14F</i>
1230 - 1245	Break
1245 - 1345	<i>API 505 &amp; API 14FZ</i>
1345 - 1420	<i>Area Classifications for API Hazardous Classified</i>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day One

#### **Day 2**

0730 - 0830	<i>Area Classifications for API Unclassified</i>
0830 - 0930	<i>Classification Based on API RP</i>
0930 - 0945	Break
0945 - 1030	<i>API RP 505 'Preferred' Symbols for Classified Locations</i>
1030 - 1100	<i>API RP 500 'Preferred' Symbols for Classified Locations</i>
1100 - 1130	<i>Atmospheric Mixtures of Explosive Gas &amp; Air</i>
1130 - 1230	<i>Extent of Areas, Release of Gas &amp; Temperature</i>
1230 - 1245	Break
1245 - 1345	<i>Gas Release &amp; Extent of Areas API RP 500</i>
1345 - 1420	<i>API RP 500 &amp; 505 Flammable (Explosive) Limits</i>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day Two

#### **Day 3**

0730 - 0830	<i>API RP Design Installation &amp; Maintenance</i>
0830 - 0930	<i>API RP 14F &amp; 14FZ are Not Used to Classify Areas</i>
0930 - 0945	Break
0945 - 1030	<i>Sec 4 Electrical Equipment for Hazardous (Classified) Areas</i>
1030 - 1100	<i>Electrical Enclosures</i>
1100 - 1130	<i>API RP 14F Explosion-Proof</i>
1130 - 1230	<i>Typical Motor Name Plate</i>
1230 - 1245	Break
1245 - 1345	<i>Difference with API &amp; NEC General Purpose Equipment</i>
1345 - 1420	<i>API RP 14F Hermetically Sealed</i>
1420 - 1430	<b>Recap</b>
1430	Lunch & End of Day Three





**Day 4**

0730 - 0830	<i>API RP 14F Intrinsically Safe</i>
0830 - 0930	<i>Pressurized or Purged</i>
0930 - 0945	<i>Break</i>
0945 - 1030	<i>Clean Air (Non Classified Area)</i>
1030 - 1100	<i>API RP 14F Cables &amp; Accessories</i>
1100 - 1130	<i>API RP 14F Installation 6.8 Conduit &amp; Cable Seals &amp; Sealing Methods</i>
1130 - 1230	<i>Grounding Sec, 610</i>
1230 - 1245	<i>Break</i>
1245 - 1345	<i>Electrical Motors</i>
1345 - 1420	<i>Portable Equipment</i>
1420 - 1430	<i>Recap</i>
1430	<i>Lunch &amp; End of Day Four</i>

**Day 5**

0730 - 0830	<i>API14 RP FZ Design, Installation &amp; Maintenance of Electrical Systems</i>
0830 - 0930	<i>API RP 14FZ Listings, Markings &amp; Documentation</i>
0930 - 0945	<i>Break</i>
0945 - 1030	<i>Equipment Selection Division 1</i>
1030 - 1100	<i>Oil Immersion (Type "o")</i>
1100 - 1130	<i>Increased Safety (Type "E") Equipment</i>
1130 - 1200	<i>Powder Filling Equipment</i>
1200 - 1215	<i>Break</i>
1215 - 1245	<i>Encapsulation (Type "m") Equipment</i>
1245 - 1315	<i>API RP 14FZ Electrical Distribution Systems</i>
1315 - 1330	<i>Course Conclusion</i>
1330 - 1430	<b>COMPETENCY EXAM</b>
1430	<i>Lunch &amp; End of Course</i>

**Practical Sessions**

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



**Course Coordinator**

Reem Dergham, Tel: +974 4423 1327, Email: [reem@haward.org](mailto:reem@haward.org)

