



EE054: Electrical Installations in Hazardous Areas: *Classification, Safe Handling, Operation & Maintenance*

Training Description:

This course provides an understanding of the hazards involved in using electrical equipment in potentially explosive atmospheres. It is based on the newly adopted international IEC Series which are directly applicable to most countries in the world.

Explosion-proof installations can be expensive to design, install and operate. The wider approaches described in these standards can significantly reduce costs whilst maintaining plant safety. The course explains the associated terminology and its correct use. It covers from area classification through to the selection of explosion-protected electrical apparatus, describing how protection is achieved and maintained in line with these international requirements.

Training Objectives:

By the end of the training, participants will be able to provide a clear understanding of hazardous area current custom and practice with particular respect to the following:

- ✓ Defining the hazard, classifying hazard materials, understanding the nature of the risk and the necessity to eliminate sources of ignition
- ✓ The relationship between area classification and the various different types of Ex apparatus
- ✓ The relationship between electrical equipment and gas groups and temperature classes
- ✓ The installation and maintenance of the different types of equipment i.e. flameproof, increased safety, intrinsic safety etc.
- ✓ The need for, and typical approach to, electrical equipment inspection
- ✓ The documentation of the hazardous area

Training Designed for:

The course is intended for Managers involved with energy management, Electrical Engineers and Technical Staff who have to deal with the aspect of electrical and industrial power system protection, control and operation.

Training Program:

DAY ONE:

- ❖ Pre-Test
- Introduction
- ❖ Area classification
 - Hazards and hazardous areas
 - Basic properties of combustible and ignitable
 - Basis of area classification
 - Zonal classification
 - Plant operations – normal and abnormal
 - Policy and guidelines for implementation
 - Area classification examples

DAY TWO:

- ❖ **Design philosophy and selection of equipment/apparatus**
 - Risks
 - Apparatus grouping
 - Surface temperature classification
 - Concepts and techniques of explosion protection
 - Typical applications of methods of protection
 - Mixed techniques
 - Selection of explosion-protection technique for safeguarding
- ❖ **Earthing**
 - Earthing and bonding
 - Static electricity
 - Clean and dirty earthing
 - Electrical interference
 - Earthing terminology

DAY THREE:

- ❖ **Electrical Installations**
 - Installation requirements
 - IEC standard contents
 - Other relevant installation standards and codes
 - Safety documentation
 - Practical aspects of IS installations
 - Other considerations affecting installation
 - Other installation issues

DAY FOUR:

- ❖ **Inspection and maintenance**
 - Inspection and maintenance
 - Scope of IEC
 - General requirements
 - Inspections and insulation test
 - Maintenance
 - Testing
 - Earthing integrity verification
 - Inspection requirements

DAY FIVE:

- ❖ **Safe Working Practices**
 - Safety observations
 - Danger signals of electrical malfunctioning
 - Need for inspection and maintenance
 - Maintenance and safe practices
 - Fault-finding – safety ensured
 - Insulation testing in hazardous area



- Earthing in hazardous area
- ❖ Course Conclusion
- ❖ POST-TEST and EVALUATION

Training Requirements:

“Hands-on practical sessions, equipment and software will be applied during the course if required and as per the client’s request”.

Please note that the above topics can be amended as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:-

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

As per the course location - This rate includes participant’s manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:30	Recess (Prayer Break & Lunch)
13:30 - 15:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department

