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EE085:
Electrical Energy Saving in Industrial & Commercial Utilities

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Training Description:

Increasing use of electrical energy is common to all parts of society and represents a significant contribution to global carbon emissions. This course provides companies and individuals with a foundation level understanding of electrical energy use and losses, introduces the tools required for electrical energy analysis and management, and presents case studies of latest industry practice in energy efficiency improvements. This will be of significant benefit to those wishing to understand the principals behind electrical energy reduction within their own or client premises.

This course also focuses on providing state-of-the-art knowledge of energy efficiency management strategies and technology options for improving electrical energy utilization in the residential, commercial and industrial sectors.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Knowledge of electric energy utilization processes in residential, commercial and industrial environments
- ✓ Have fundamental understanding of mechanisms associated with electric energy use and losses related to residential, commercial and industrial processes
- ✓ Understand of modern technologies available for improving the utilization of electrical energy in residential, commercial and industrial processes
- ✓ Appreciate of possible impacts on the electricity grid that can arise as a result of the application of these technologies and how such adverse impacts can be controlled
- ✓ Have Foundation level skills and knowledge associated with energy auditing and the quantification of savings and benefits achievable in residential, commercial and industrial processes through the application of the above technologies
- ✓ Have an overview of specific case studies related to energy efficiency improvements and financial justification
- ✓ Be empowered to liaise with project managers, owners, vendors, consultants and utilities on related projects at concept, tendering and implementation stages

Training Designed for:

This course is intended for all Managers, Engineers, Senior Technical Staff, Plant Designers, Plant and Building Managers, Plant Operations Managers, Energy Auditors and Building Service Engineers who wish to improve their understanding or advise customers on electrical energy efficiency solutions to improve energy utilization in the residential, commercial and industrial sectors. Personnel working in all areas of electrical energy design who wish to understand the various aspects of electrical energy consumption, energy analysis, and electrical energy efficiency improvements.

Training Program:

DAY ONE:

- ❖ Pre-Test
- ❖ Introduction

- ❖ Surveying Electrical Consumption
  - Identifying electricity consumers
  - Determining system efficiency
  - Using Electrical Metering
  - Justification for Metering
  - Meters
  - Meter Selection
  - Determining Consumption
  - Evaluating Examples Using Meters

DAY TWO:

- ❖ Using Load Management Techniques
  - Electrical Quantities
  - Load factor
  - Electric Bill Audit
  - Graphic Records of Demands
  - Equipment audit
  - Target demand
  - Methods of control
  - Manual Control
  - Automatic Control
  - Demand controllers
  - Electric Rates
  - Calculating the Cost of Electricity

DAY THREE:

- ❖ Improving Electrical Equipment Efficiency
  - Energy
  - Watts Electric Circuit
  - Electrical quantities
  - Capacitors
  - Induction motors
  - Motor Operation
  - Motor efficiency
  - Determining motor loading
  - Variable-speed drives
  - Transformers
  - Energy saving devices

DAY FOUR:

- ❖ Conducting a Lighting Survey
  - The Importance of Lighting
  - Lighting levels
  - Measuring Lighting Levels

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- Lighting survey
- Improved switching
- Remove Existing Lighting
- Replace existing lighting

❖ Reducing lamp size

- Improved lighting controls
- Modify work stations
- Task lighting
- Using natural light

DAY FIVE:

❖ Evaluating Lamps and Fixtures

- Lighting fixtures and their maintenance
- Incandescent and fluorescent lamps
- Scheduling lamp replacement
- HID, mercury, metal halide, high-, and low-pressure sodium lamps
- Maintenance

❖ 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.

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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