ICTD

المركز العالمي للتدريب والتطوير

International Centre For Training & Development

Load Management & Energy Conservation

Course Introduction:

Energy management in buildings is the control of energy use and cost while maintaining indoor environmental conditions to meet comfort and functional needs, significant energy and dollars savings are available through energy management. The most important single ingredient for successful implementation of an energy management program is the plan.

This course introduces the principles of energy management and will take you step by step through the process of developing and energy management plan to achieve more efficient energy consumption and lower total operating costs. The instructor will show how to incorporate and develop a fully integrated energy plan. This approach can be equable valuable for both to large multi-facility organizations, as well as to small, single-owner operations with just few employees.

Course Objectives:

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

- R**ecognize** and understand the energy management process and all components of a comprehensive energy management plan/program
- **implement** an effective and successful planning strategy for energy conservation and efficiency
- **apply** available tools to gain competitive advantage by seizing external and internal opportunities so as to improve the efficiency of buildings operations
- **determine** through assessment techniques the energy management matrix that will allow you to set goals and energy targets
- **transform** your buildings/facilities into sustainable and optimal energy performers
- To provide participants with the knowledge to meet the requirement for an energy management plan for commercial and institutional and industrial buildings and the tools associated in the process for development, quality control and implementation.

Who Should Attend?

Energy engineers, energy managers, engineers, plant managers, commissioning engineers, building/facility managers, engineers and architectural consultants, project managers, operating and maintenance personnel and other individuals interested and involved in energy efficiency and conservation of commercial and institutional buildings.

Course Outline:

Introduction

- The need and value of energy management

- The energy management profession and principles
- The energy management process
- Energy management organizational structure

Organizing for Energy Management

- Energy policy
- Educational planning
- Strategic planning
- Reporting
- Energy managers and functions
- Energy management communications
- Energy management committee
- Energy management matrix

Energy Management Plan

- Long, medium and first-year plan
- Setting targets and measures
- Setting priorities
- Developing action plan
- Marketing, awareness and communication plan
- Training resources
- Implementation
- Reporting and monitoring

Energy Accounting Systems

- Energy accounting process
- Utility rates

Analyzing Energy Data

- Electrical, natural gas and water use profile
- Key performance indicators(energy use and cost utilization indices)
- Calculating electrical load and occupancy factors
- Benchmarking energy use
- Energy monitoring program
- Energy forecasting

Surveys and Energy Auditing

- Energy audits and basic components
- Surveying energy uses and losses

- Commercial and industrial energy audits
- Buildings commissioning is not an audit
- Commissioning , re-commissioning and retro-commissioning for energy management
- Implementing the audit recommendations and the energy action plan

Improving Operations and Basic Energy Management

- Control energy system use
- Energy procurement (purchase lower-cost energy)
- Optimize energy systems operation
- Purchase efficient replacement systems
- Optimizing more complex systems operations
- Load management and demand control techniques

Energy Conservation Opportunities

- Identifying and evaluating energy conservation opportunities
- ECO in boilers, cogenerations, steam and condensate systems, waste-heat recovery, building envelope, HVAC systems

Electric Energy Management
Energy Management Control Systems
Energy Management for Lighting Systems
Codes, Standard and Legislation
Implementing Energy Conservation Measures
Measurement and Verification of Energy Savings
Metering for Energy Management
Monitoring Results

Evaluating Success and Establishing New Goals

- Establish key performance indicators
- Tracking performance
- Developing new goals

Sustainability and High Performance Green Buildings

- LEED principles for energy management

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies

- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (**ICTD**) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:30 - 08:50	Morning Coffee/Tea
08:50 - 10:20	First Session
10:20 - 10:40	Recess (Coffee/Tea/Snacks)
10:40 - 12:20	Second Session
12:20 - 12:40	Recess (Coffee/Tea/Snacks)
12:40 - 14:30	Last Session