Electrical Networks Operation and Maintenance

Course general description:

Distribution equipment plays an important role in the safe distribution of electrical power. The equipment needs to be operated in a safe manner securing continuity of supply to consumers. **This requires the equipment to be:**

- Well designed, installed, commissioned
- Operated, and maintained in a satisfactory manner
- Within a management system
- Effective in meeting the reliability goals and
- Aware of the need for maintenance balanced against equipment downtime and cost

The course focuses mainly on the operation and maintenance of distribution equipment, with reference to auxiliary equipment necessary for its operation.

Audience:

This course is designed for:

1- Electrical Professionals
2- Electrical Engineers
3- Technicians
4- Professionals responsible for the operation and maintenance of distribution equipment, who will benefit from sharing experiences in the planning, organization, and implementation of maintenance activities,.

Course objectives:

Delegates will gain a detailed appreciation of the following:

1- The need and management for maintenance
2- Management and implementation of safe systems of work
3- Co-ordination of maintenance activities and maintaining system safety
4- Switchgear maintenance - transformer maintenance
5- Cable installation and rating; condition monitoring using non-intrusive technology
6- Routine inspections, properties of insulating oils

Course duration:

5 days

Course location:

Cairo-Dubai-Istanbul

Course contents:

Day-1

- Maintenance of electrical equipment
- Managing maintenance
- Safety
- Electrical emergencies
- Safe working distances
- Intersystem safety precautions
- Wrap up session

Day-2

- Power network fundamentals
- Faults and protection

- Fault levels
- Earthling introduction
- Network earthling
- Earthling systems
- Earth bonding
- Wrap up session

Day-3

- Transformer characteristics
- Transformer cooling
- Transformer protection
- On load tap changer operation
- Transformer site testing
- Transformer maintenance

Day-4

- Circuit breaker history
- Circuit breaker ratings and operation
- Circuit breaker examples
- Switchgear maintenance
- Fault reporting
- Properties and deterioration of insulating oils
- Thermal imaging
- Condition monitoring
- Wrap up session

Day-5

- HV cable ratings and installation methods
- HV cable volt drop
- LV cabling systems, an introduction to the wiring regulations
- Cable fault locating

Methodology:

- 50% lectures & concepts
- 10% Videos
- 10% Case studies
- 10% Exercises
- 10% Discussions
- 10% Software (if applicable or examples)

Course code: (TEEI010)