1. Course Details:

Course Code : EPET-009
Course Title : Electric Distribution Systems (Operation, Testing & Protection)
Course Duration : 5 Days

2. Course Overview:

- Electric energy to growing loads, existing distribution systems grow and expand. As well, new networks are constructed in the new developing residential, industrial and agricultural areas. Thus, large investments are spent to construct a distribution system, such that in typical power systems, 40% of the investments are spent in the distribution system which is double the investment in the transmission system (20%) and as much as the investment in the generation plants (40%). In addition, the consumers are now progressively interested in power quality and an uninterrupted supply, i.e. a reliable distribution system is required.

3. Learning Outcomes:

- Understand electric power distribution systems
- Set principles common to all types of distribution systems
- Classify distribution systems according
- Be familiar with principle of operation, construction and performance indices of main components of distribution systems
- Be familiar with procedures of distribution system protection
- Be familiar with testing procedures of different components of distribution systems
- Be familiar with common failures of main components of distribution systems

4. Course Contents:

Power Network Fundamentals and Systems Protection

- Power Network Fundamentals
- Faults and Protection
- Fault Levels for transformer
- Types of the Protection Relay
- Arc Flash Mitigation
- Importance of Earthing
- Network Earthing

Power and Distribution Transformers Operations and Maintenance

- Transformer Characteristics
- Transformer Cooling and Protection
- On-load Tap Changer Operation
- Transformer Site Testing
- Transformer Maintenance
- Dry Transformer
- Ester base Oil for New Power and Distribution Transformers

Circuit breakers, Switchgear and Condition Monitoring

- Circuit Breaker Ratings and Operation
- Switchgear Maintenance
- HV Vacuum Circuit Breakers
- Hybrid Outdoor Circuit Breakers
- Switchgear maintenance - transformer maintenance
- Instruments for Partial Discharge Monitoring
- Instruments for Thermal Imaging and Corona Detection

Gas-insulated Switchgear Common Voltage Cables Faults and Locating Methods

- Overview of Gas-insulated Switchgears
- Power Cables Construction and Characteristics
- Common Underground Cable Faults
- Cable Fault Locating
- Heat Shrink and Cold Shrink Cable Terminations and Joints

5. Our Methodology:

- Make coaching and monitoring innovative and using modern
- Media training also using on the go training by using interactive means and focusing on
- The exercises, practical applications and real situations study.
- Live delivery method, instructor-led training.
- Experienced consultant, trainers, and professional.
- Qualified trainer with high-level experience

6. Attendance Reports:

- Send daily attendance reports to trainingdep
- Send full attendance report to training dep. by the end of thecourse
- Attend 100 % from the course days also providedaily

- Issue attendance certificate for participant who attend minimum 80% from the course duration

7. Pre/Post Reports:

- Pre- assessment before starting training.
- Post assessment after finish training
- Full report for the deferent between Pre-& Post assessment

8. Who Should Attend?

- Electrical power engineers
- Supervisors
- Electrical Professionals
- Professionals responsible for the operation and maintenance of distribution
- Qualified distribution system technicians