1. Course Details:

Course Code : EPET-008
Course Title : Electric Generators: Operation, Performance Analysis, & Testing
Course Duration : 5 Days

2. Course Overview:

- This course provides excellent understanding on both a theoretical and practical level for power generators. This course focuses mainly on the operation and maintenance of Generation equipment with reference to auxiliary equipment necessary for its operation. Also, participants will learn what you can do, and should do with generators, to make sure your facility will keep running even if the electricity to your facility doesn't.

3. Learning Outcomes:

- Provide knowledge about generators exciters including ordering specifications, operation, analysis, maintenance, testing and protection.
- Gaining knowledge of synchronization methods and conditions
- Understanding the need for load sharing & shedding processes
- Recognizing modern protective relays and understand their basic operation
- Understanding diagnostic testing and inspection, advanced fault detection techniques, critical components, and common failure modes
- Discovering the maintenance required to minimize their operating cost and maximize generator's efficiency, reliability and longevity

4. Course Contents:

Review Electrical Parameters & Fundamentals

- DC Circuits
- Circuit Analysis
- Power and Energy Dissipation
- AC Circuits & Power Factor
- Power Dissipation
- Power Supplies & Power types
- Three Phase Connections
- Magnetic Circuits

AC Generators Basics, Theories & Construction

- Prime mover (Gas Turbines & Diesel)
- Generator Basics
- Synchronous Generator Construction
- The Speed of Rotation of a Synchronous Generator
- The Equivalent Circuit of a Synchronous Generator
- The Phasor Diagram of a Synchronous Generator
- Power in Synchronous Generators

Synchronous Generator Ratings & Capability Diagram

- Synchronous Generator Ratings & Capability Diagram
- The Voltage, Speed, and Frequency Ratings
- Synchronous Generator Capability Curves
- The Generator's Capability Diagram – Typical Case
- Generator Machine Losses

Earthing Systems & Neutral Earthing of Generator

- Equipment Earthing
- System Earthing
- Sensing of Ground/Earth faults
- Earthing Via Neutral Earthing Compensator

Excitation System, AVR & PSS

- Excitation Systems
- Elements of an Excitation System

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 Engineers and Supervisors
- Electrical Technicians and Manufacture specialists
- Engineering and Petrochemical Professionals