

DAY 1

The Technology of Electrical Equipment and Devices

- Power Transformers
- Power Supplies (UPS) and Batteries
- Generators - Switchgear - Disconnect Switches
- Grounding and Neutral Ground Resistors (NGR)
- Motor Control Centers (MCC)
- Variable Frequency / Speed Drives (VFD/VSD)
- Protection and Numerical Relays Functionalities
- Motor and Feeder Protection

DAY 2

Transformer Tests and Analysis of Test Results

- Functional Tests for Transformer
- Site Acceptance Tests
- Transformer Cooling
- Transformer Vector Groups Selection
- Transformer Maintenance
- Sweep frequency response analysis for transformer diagnostics
- Ester base oil for new power and distribution transformers

DAY 3

The Use of Test Equipment and Interpretation of Results

- Degradation of Solid and Liquid Insulation in Switchgears
- Digital Multimeter
- Insulation Resistance Tester
- Temperature Probes and Pyrometers
- Resistance Temperature Detection and Sensors
- Digital Hydrometers
- Cable Fault Locators

DAY 4

The Interpretation of Electrical Drawings and Motor Control Systems

- Importance of Electrical Diagrams
- Single-line Diagrams Symbols and Interpretation
- Types of Control Circuits
- Methods of Starting AC motors
- Soft Starters
- Maintenance of AC motors
- Troubleshooting of AC motors
- Induction motors vs. Synchronous Motors

DAY 5

Maintenance Strategies and Conditioned Based Maintenance

- Importance of Maintenance
- Maintenance Strategies
- Thermal Imaging
- Partial Discharge
- Variable Speed Drives Maintenance
- UPS Maintenance
- Battery Charging and Maintenance
- Wrap-up Session with Q&A