

Course Overview:

This course covers the theory, operation, maintenance and testing of power transformers and auxiliary equipment. Topics included are transformer fundamentals, transformer ratings, transformer cooling, nitrogen gas systems and insulation systems. The source concludes with in-depth discussions on transformer testing techniques. This course is applicable to technicians and engineers who need a sound understanding of power transformer operation and maintenance.

Students will learn safe and proper maintenance and testing procedures on pad-mounted, power transformers. The course covers transformers used in commercial and industrial power distribution systems, including oil and dry-type units. Larger power transformers used in utility applications are also covered.

Load and no-load tap changer maintenance, ac and dc testing, routine inspections and oil sampling and testing are covered in detail. Students will learn how to perform routine oil tests, and understand how to perform the major tests that are required. A variety of electrical test equipment from various manufacturer's will be discussed.

Course Objective:

- Explain the basic operation of a transformer.
- Discuss turns ratios and calculate terminal voltage and current.
- Discuss terminal markings and various single phase and three phase wiring schemes. (WYE vs DELTA)
- Explain how to perform a polarity test on a potential transformer.
- Discuss the electrical testing performed on transformers such as insulation resistance testing, excitation and power factor testing.
- Discuss the various tests performed on insulating oil.

Course Outline:

- Transformer Principles
- Vector Diagrams
- Transformer Classifications
- Magnetizing Circuits
- Transformer Construction (Construction)
- Cooling
- Tap Changers
- Transformer Connections
- Transformer Maintenance
- Transformers and Relaying

Who Should Attend:

Field and shop technicians, field engineers, supervisors and others responsible for the testing and maintenance of power transformers rated 750kVA to 500MVA and 4.16kV to 500kV

Training Language:

EN / AR

Training Methodology:

- Presentation & Slides
- Audio Visual Aids
- Interactive Discussion
- Participatory Exercise
- Action Learning
- Class Activities
- Case Studies
- Workshops
- Simulation