



*Training Course:
Testing and Maintenance of Power Transformers
(11/0.4 kV)*

*16 - 27 February 2025
Istanbul (Turkey)
DoubleTree by Hilton Istanbul Esentepe*

Training Course: Testing and Maintenance of Power Transformers (11/0.4 kV)

Training Course code: EN235695 From: 16 - 27 February 2025 Venue: Istanbul (Turkey) - DoubleTree by Hilton Istanbul Esentepe Training Course Fees: 10080 € Euro

Introduction

This program is designed to provide participants with the technical knowledge and practical skills needed for testing and maintaining 11/0.4 kV power transformers. Emphasizing safety, reliability, and efficiency, the training will cover essential diagnostic techniques, maintenance practices, and compliance with industry standards.

Objectives

- Understand the principles and operation of 11/0.4 kV power transformers.
- Conduct routine and advanced transformer testing.
- Implement best practices for preventive and corrective maintenance.
- Identify and troubleshoot common transformer issues.
- Ensure compliance with international safety and performance standards.

Target Audience

- Electrical engineers and technicians.
- Maintenance and operations teams in power utilities.
- Professionals involved in substation management.
- Safety officers and compliance professionals.

Outlines

Day 1: Introduction to Power Transformers

- Overview of transformer types and applications.
- Structure and components of 11/0.4 kV transformers.
- Transformer ratings and specifications.

Day 2: Transformer Operating Principles

- Basics of electromagnetic induction and transformer operation.
- Load characteristics and efficiency considerations.
- Cooling methods and their importance.

Day 3: Testing Fundamentals

- Importance of testing in transformer lifecycle.
- Key testing parameters: voltage ratio, insulation resistance, winding resistance.
- Introduction to testing equipment and tools.

Day 4: Routine Testing Procedures

- Transformer oil testing: dielectric strength, moisture analysis.
- Insulation resistance testing using a megger.
- Voltage ratio and polarity testing.

Day 5: Advanced Diagnostic Testing

- Sweep Frequency Response Analysis SFRA.
- Partial Discharge PD testing techniques.
- Dissolved Gas Analysis DGA for fault diagnosis.

Day 6: Maintenance Practices

- Preventive maintenance schedules and checklists.
- Cleaning, tightening, and inspection of components.
- Importance of cooling system maintenance.

Day 7: Fault Identification and Troubleshooting

- Common transformer faults: overheating, short circuits, winding issues.
- Diagnostic approaches for identifying faults.
- Repair vs. replacement decisions.

Day 8: Transformer Safety and Compliance

- International standards IEC, IEEE for transformer testing and maintenance.
- Safety protocols during testing and maintenance activities.
- Case studies of safety incidents and lessons learned.

Day 9: Case Studies and Practical Applications

- Analysis of transformer failures and preventive measures.
- Hands-on testing and maintenance exercises in a controlled environment.
- Real-world examples of maintenance strategies.

Day 10: Future Trends and Innovations

- Smart transformers and IoT integration in testing.
- Condition monitoring systems for predictive maintenance.
- Energy-efficient transformer technologies.

Registration form on the Training Course: Testing and Maintenance of Power Transformers (11/0.4 kV)

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