



*Training Course:
Oil Analysis for Transformer Liquids*

31 August - 4 September 2025

Cairo (Egypt)

Holiday Inn & Suites Cairo Maadi, an IHG Hotel

Training Course: Oil Analysis for Transformer Liquids

Training Course code: EN236077 From: 31 August - 4 September 2025 Venue: Cairo (Egypt) - Holiday Inn & Suites Cairo Maadi, an IHG Hotel Training Course Fees: 4200 € Euro

Introduction

This specialized training program, designed by Global Horizon Training Center, equips participants with comprehensive knowledge and practical skills in the oil analysis of transformer insulating liquids—a critical component of transformer maintenance and reliability. Transformer oil plays a vital role in cooling, insulation, and protecting internal components. Regular analysis is essential for detecting early signs of deterioration, contamination, and developing faults. This course provides a systematic approach to transformer oil testing, interpreting results, and making informed decisions to ensure operational efficiency and asset longevity.

Objectives

By the end of this course, participants will be able to:

- Understand the role and function of transformer insulating oils.
- Identify key types of tests used in oil analysis e.g., DGA, Furan, Moisture, Acidity.
- Perform oil sampling procedures correctly to avoid contamination.
- Interpret oil analysis results to diagnose transformer health.
- Develop action plans based on oil testing outcomes and industry standards.
- Align oil analysis with predictive maintenance strategies.

Course Methodology

The course utilizes a combination of:

- Expert-led presentations and technical briefings
- Real-world case studies and diagnostic examples
- Step-by-step analysis of laboratory reports
- Group discussions on failure prevention and predictive maintenance
- Knowledge checks and interactive Q&A sessions

Organizational Impact

Organizations that invest in transformer oil analysis training will:

- Improve equipment reliability and reduce unplanned outages
- Lower maintenance costs through early fault detection
- Extend the service life of power transformers
- Strengthen predictive and condition-based maintenance programs
- Ensure compliance with international electrical safety and testing standards

Target Audience

This course is ideal for:

- Electrical and maintenance engineers
- Transformer service technicians
- Substation supervisors and technical staff
- Power plant and utility professionals
- Quality assurance and reliability specialists
- Professionals involved in asset management and condition monitoring

Outlines:

Day 1: Fundamentals of Transformer Liquids

- Role of transformer insulating oils mineral oil, ester fluids, etc.
- Functions: insulation, cooling, arc suppression, diagnostics
- Overview of transformer components interacting with oil
- Aging mechanisms of transformer oils

Day 2: Oil Sampling Techniques and Handling

- Importance of proper oil sampling
- Sampling methods offline, online, valve-based
- Contamination prevention and sample preservation
- Best practices for transporting and storing samples

Day 3: Oil Analysis Techniques

- Dielectric Breakdown Voltage
- Moisture content Karl Fischer titration
- Interfacial tension
- Acid number and sludge formation
- Dissolved Gas Analysis DGA overview

Day 4: Dissolved Gas Analysis DGA and Interpretation

- Principles of DGA
- Key gases and fault types thermal, arcing, corona
- Standards IEC 60599, IEEE C57.104
- Interpretation methods: Key Gas, Roger's Ratio, Duval Triangle
- Case studies on transformer failure prediction

Day 5: Action Planning, Risk Assessment, and Reporting

- Setting diagnostic thresholds and alerts
- Integrating oil analysis into asset management
- Decision making: repair, monitoring, or replacement
- Generating technical reports and documentation
- Course review and knowledge check

Registration form on the Training Course: Oil Analysis for Transformer Liquids

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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Personal E-Mail:
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Person Responsible for Training and Development

Full Name (Mr / Ms / Dr / Eng):
Position:
Telephone / Mobile:
Personal E-Mail:
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Payment Method

- ☐ Please find enclosed a cheque made payable to Global Horizon
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