

May 25 2022

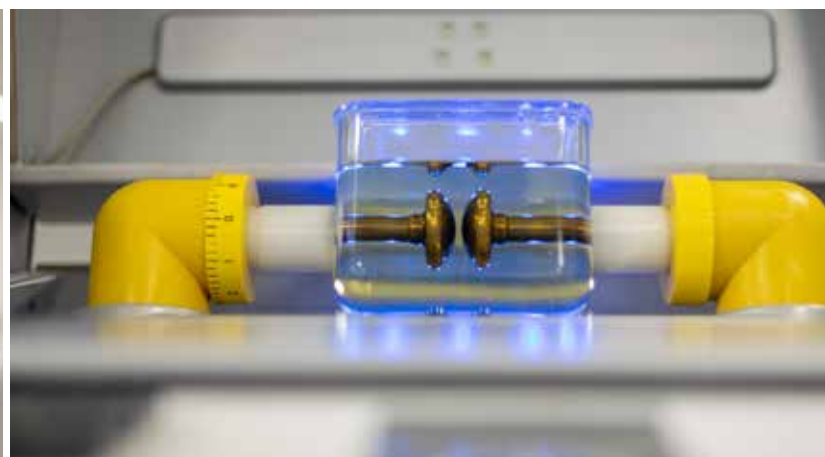
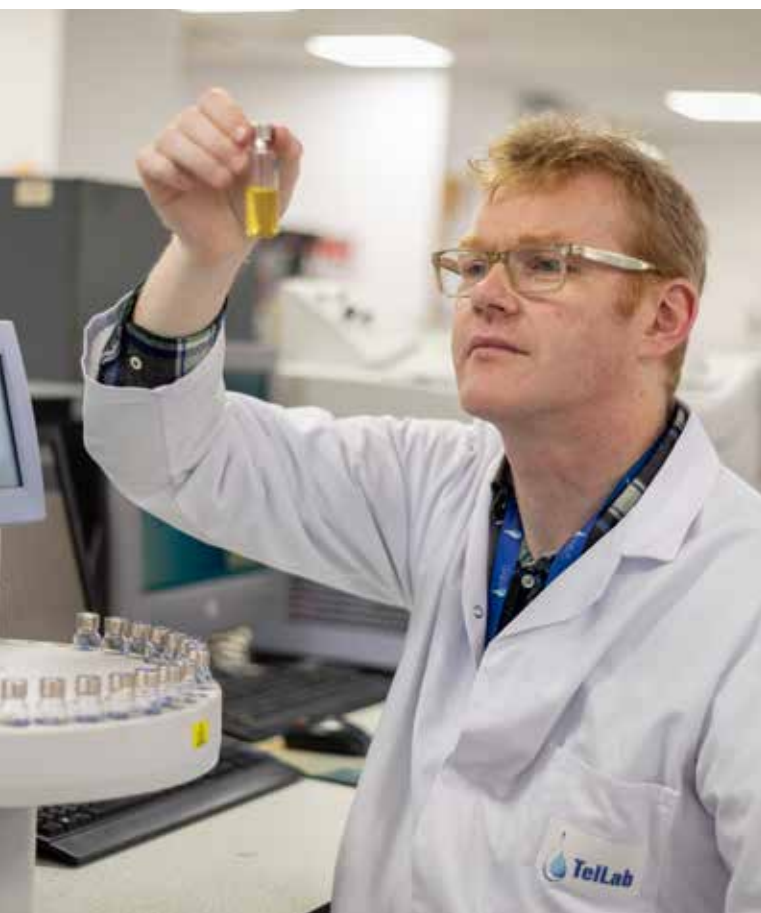
One-day course for
engineers &
technicians responsible
for managing
transformer assets.

TRANSFORMER OIL ANALYSIS TRAINING COURSE

Oil-filled transformers are critical assets in the transmission and distribution of electrical power. Continued operation of an oil-filled transformer after the oil's properties have changed to the point where it can no longer provide its key functions will dramatically reduce the life of the transformer and increase the risk of failure.

The objectives of this course are to increase understanding of

- The transformer insulation system, potential problems and their effect on transformer life
- The most common dielectric fluids: mineral oils, silicone fluid, synthetic and natural esters
- The benefits of oil testing and the importance of correct oil sampling
- How to develop an effective testing programme
- Interpreting results to make better maintenance and asset-management decisions



Course date: Wednesday 25 May 2022

Venue: T.E Laboratories Ltd, Loughmartin Business Park,
Tullow, Co. Carlow. R93 N529, Ireland.

Course content

The transformer

- Development and history
- Stresses within a transformer

The insulation system

- Functions of the oil/fluid
- Types of oil/fluid
- Modern insulating materials

Insulation ageing

- Life limiting factors
- Ageing accelerators
- Insulation and transformer life expectancy

Condition-based monitoring

- Types of tests
- Benefits of testing
- Essential oil tests
- Gas in oil analysis (DGA)
- Quality of oil sampling
- Developing a program

Interpreting test results

- Interpreting oil test results to prevent unscheduled outages
- Interpreting Gas in Oil (DGA) analysis results
- Limitations of monitoring and diagnostic tests.
- Maintenance options
- Case studies

Transformer Life extension

- Controlling the age accelerators
- Dehydrating transformers
- Reclaiming oil
- Confronting the sludge problem
- Exercise – Candidate participation

Laboratory visit

The course will also include a tour of TellLab's transformer oil analysis laboratory.

Cost

€975.00 per person ex VAT, including all course notes, teas/coffees and lunch.

Early-bird fee: €850.00 if booked and paid in advance of 10 May, 2022.

Group discounts available:

3 or more attendees 10% discount.

TellLab

Founded in 1991, T.E. Laboratories (TellLab) has deep expertise in chemical analysis. We are Ireland's only specialised transformer oil analysis laboratory, with a track record of over 20 years, performing analysis for the majority of Irish power generators and many large-scale electricity users. Our environmental laboratory facilities are INAB accredited, and we operate to ISO 9001 standards.

Training Coordinator

Charles O'Connor has been involved in transformer maintenance and failure investigation for more than 30 years. As head of failure investigation at South Africa's Council for Scientific Research (CSIR), Charles worked extensively with ESKOM research in the field of transformer failures, gaining an in-depth knowledge of failure mechanisms and being instrumental in developing mitigation strategies and technologies.

Before returning to Europe in 2008, he spent a further 10 years in the Middle East, where he formed a successful specialist transformer rehabilitation company.

As Chief Technical Officer of Global Transformer Solutions (GTS), Charles conducts training and consultancy in transformer condition monitoring and rehabilitation in Europe, North America, the Middle and Far East, Africa and Australia.

Learn how oil analysis can provide vital information on

Transformer Internal Condition

By measuring

- Dissolved gases
- Dissolved metals

Paper Condition

By measuring

- Furans content
- Methanol content

Corrosive Sulphur Risk

By measuring

- DBDS
- Metal passivator

Oil Quality

By measuring

- Water content/relative humidity
- Acidity
- Breakdown voltage
- Dielectric losses
- Resistivity
- Presence of additives
- Interfacial tension
- Oil density, colour and appearance
- Particle count
- PCB content



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