

## electrical power testing capabilities



Electrical and mechanical testing, performance assessments, failure investigation, magnetic field assessments, cable ratings, thermal analysis, research and development - just a few of the services that ERA's professional engineering staff can provide. All of these services can be tailored to meet specific requirements.

### independent service

ERA Technology provides an independent assessment service for power system equipment, including: cables, accessories, switchgear, transformers, motors, generators, etc. The service is complemented by an extensive materials testing facility, including scanning electron microscopy, that enables microscopic and forensic analysis where required.

Laboratory facilities are also available for practical performance assessment of power system components.

### other services

Other services offered in the field of electrical power include: 50Hz magnetic field surveys, thermal imaging power system studies, system planning and design, power quality investigations, condition assessment, expert witness, and expert advice to: loss adjusters, independent power producers, and regulatory bodies.

*ERA's independence ensures strict confidentiality and impartial advice*

## key electrical testing facilities

ERA Technology Ltd has a range of electrical testing and measuring facilities that are used to conduct tests on electrical plant and equipment at our laboratories and onsite. These include:

### ac testing

- High Voltage ac test capability up to 100kV.
- Partial discharge measurements up to 100kV (0.5pC sensitivity in Faraday cage).
- 3 phase ac to 22kV (phase to earth).
- LV 50Hz load current generation to 3kA (sample impedance dependant).
- 3-phase, 25Hz - 2kHz, variable frequency testing, 1.5kVA (6A max output current).

### dc testing

- DC voltage to 100kV.

### transient testing

- Impulse voltage testing to 75kVp.
- Short circuit testing to 40kA, 35V, duration 2 seconds.
- Single and 3-phase short circuit testing, 90V - 1.1kV, 10A - 10kA(1.1MVA).

## Mobile testing equipment:

### partial discharge testing

- Trailer mounted medium voltage 50Hz partial discharge testing to 25kV, 1A maximum charging current (includes tan  $\delta$  and withstand).
- OWTS Power cable system partial discharge mapping (Oscillating Wave Test System), 36kV, test object capacitance range 0.01mF to 2mF.
- Robinson Hotstick acoustic probe.
- PDGold™ on-line partial discharge measuring and mapping

### voltage withstand testing

- Medium Voltage VLF Pressure Testing to 36kV, 0.1Hz, 45mA maximum charging current (~7km of 11kV power cable, dependant on cable capacitance).
- AC/DC voltage ramp / withstand testing to 12kV.

### other associated services include:

- Insulation Resistance and Polarisation Index measurements to 5kV.
- Frequency domain response analysis for testing distribution transformers, or similar.
- AC / DC Magnetic field measurements.
- Optical cable testing.
- Environmental conditioning.

This testing facilities list is not exhaustive, therefore please contact ERA for further information on how we can assist with your testing requirements.

## ERA Technology

ERA Technology works at the leading edge of many advanced technologies. The business was founded in 1920 and today provides specialist, high value-added, technology-based services including design and development, testing, assessment and expert advice.

ERA's services reduce technical and commercial risk, improve the operational performance of engineering infrastructure assets, and enhance the competitiveness of products and systems.

ERA Technology Ltd is a part of Cobham plc.

ERA Technology Ltd  
Cleeve Road  
Leatherhead  
Surrey KT22 7SA  
UK

Tel: +44 (0) 1372 367007  
Fax: +44 (0) 1372 367009  
E-mail: [info@era.co.uk](mailto:info@era.co.uk)  
[www.era.co.uk](http://www.era.co.uk)



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