



**Narec offers an expert independent testing and development service to the electrical power sector operating across the complete voltage spectrum. Our work is addressing the needs of future electrical networks and exploring life extension opportunities for ageing network assets.**

As the custodian of the UK's High Voltage Reference Measurement Standards, Narec upholds the highest industry standards for testing and certification.

Narec's High Voltage Clothier Laboratories have been serving the transmission and distribution industry for over forty years, with the capability to test the performance of high, medium and low voltage

electrical equipment under extreme conditions.

Narec opened EnergyLINK Low Voltage Laboratory in 2003, which is dedicated to developing, demonstrating and testing new generation and connection technologies, while ensuring safe and reliable integration with existing systems.

Full range of high, medium and low voltage testing, certification and calibration to ISO17025

Problem solving and diagnostics for the performance of high voltage electrical equipment

High voltage system design and development

Consultancy and research, including materials and forensic analysis

Bespoke electrical testing packages for specialist applications, including aerospace and renewable energy technologies

Testing to all relevant standards including IEC, ISO and ANSI

Dedicated team with decades of experience in the industry



*Advancing Renewable Energy*

## Facility Specification and Services

“Narec was the only company prepared to work with us to develop a bespoke testing method to meet our requirements, which was above and beyond the standard which would normally be expected for this type of equipment. Narec was able to look at our requirements and optimise both the testing method and the testing programme, making more efficient use of our time and budget. The comprehensive documentation that was subsequently produced to us has set a real industry benchmark.”

Alex Lucas, Line Design Engineer, Balfour Beatty Utility Solutions.

### High Voltage Laboratory

**Lightning Impulse**

Maximum 3.2MV

**Switching Impulse**

Maximum 2MV

**Power Frequency**

Maximum 1.2MV

**Direct Voltage**

Maximum 1MV

**Temperature rise and short term withstand tests**

Maximum 8000A

### Low Voltage Laboratory

A fully configurable and isolated three phase electrical network.

Capacity up to 1MWe.

A comprehensive suite of generation technologies, prime movers, physical models of electrical and heat loads, model generation components and distribution elements network.

Extensively equipped with bench marked prime-mover and network devices (up to 50kVA).

Six separate low voltage configurable busbars.

Full bandwidth, multiple channel, automated test and measurement systems.

Full connectivity for external generation technology testing and analysis.

### High Voltage Services

**Other electrical test facilities and services:**

**Ageing tests:** Accelerated ageing at high voltage, voltage endurance and thermal cycling, humidity and ageing.

**High current test:** ASTA accredited test facility and 6 kA and 8 kA (3 ph, 50 Hz) test rigs for thermal testing. Tests performed on bushings, switchboards, circuit breakers and cable terminations etc.

**HV Calibration:** UKAS accredited for DC and impulse calibration, with custom built and environmentally controlled facilities traceable to national standards for AC, partial discharge, ratio and phase angle (CTs and VTs) calibration. Owner of the UK national measurement standards.

**Lightning testing:** Lab capabilities allow for high voltage lightning protection system testing for the aerospace (radomes and nose cones) and renewable generation sectors (wind turbine blades).

**LV Test:** Certification testing for micro generation and inverter technologies e.g. ER G83 and ER G59 compliance testing in our LV test laboratory.

**High, medium and low voltage ASTA accredited type test:** In addition to our AC, impulse voltage, and temperature rise test capabilities, we also offer a fully managed type test service coordinated by our Testing Authority Observer.

**Other services:**

**Consultancy:** Environmental management and testing, forensic investigations, process control and investigation, materials specification and evaluation and power systems analysis, including insulation coordination.

**Environmental assessment and testing:**

Cyclic temperature and humidity exposure, chemical resistance testing.

**Chemical and materials analysis:** Organic and inorganic analysis, material failure and corrosion investigation.

**Materials investigation and testing:** Characterisation and performance tests on oils and polymeric materials.

**Additional special facilities:** Dry dock facilities for saltwater immersion and simulated seabed testing for marine equipment.

**For more information contact:**

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