





Contents

4	<i>Overview</i>
6	<i>Transformer Installation & Relocation</i>
8	<i>Transformer Servicing & Maintenance</i>
10	<i>Testing & Commissioning</i>
12	<i>On-site Transformer Cleaning & Painting</i>
14	<i>On-site Transformer Refurbishment</i>
16	<i>Cooler Bank Replacements</i>
18	<i>Marshalling Kiosk Replacements</i>
20	<i>Cable Box & Bushing Replacements</i>
22	<i>Containerised Substations</i>
24	<i>HV & LV Cabling</i>
28	<i>Switchgear Installations, Servicing & Maintenance</i>
30	<i>Offshore & Global Transformer Maintenance</i>
32	<i>DNO Safety Document Acceptance</i>



Overview

Winder Power Substation Services is part of the Winder Power Group. Substation Services' main objective is to provide a specialist service team to the power engineering industry.

Our highly experienced in house team has over 150 years combined experience in providing a full range of services to companies of all sizes, from major utilities to specialist contractors.

The Substation Services team can cater for many disciplines of power engineering installation, specialising in High Voltage (HV) and Low Voltage (LV) electrical installation works including:

- Transformer installations and commissioning.
- Transformer refurbishments, repairs, maintenance and conditional assessments.
- Transformer modifications and cooler bank upgrades.
- Transformer power rating enhancements.
- HV & LV switchgear installations and commissioning.
- HV & LV switchgear modifications, upgrades and maintenance.
- HV & LV cabling, installations and testing.
- Instrumentation & control cabling, installations and testing.
- Earthing installations and testing.

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Transformer Installation & Relocation

Winder Power Substation Services is committed to the provision of high quality electrical engineering design, manufacture, refurbishment and transformer installation on a turnkey basis.

Winder Power Substation Services will accurately interpret the client's needs from the outset and liaise closely with them throughout the project duration.

Winder Power Substation Services can install all types of power distribution equipment including transformers, switchgear and generators, and are able to undertake cabling up to and including 33kV. In addition, civil works can be undertaken where appropriate.

Whatever a customer's power engineering needs, from incoming supply to revenue earning machinery, Winder Power Substation Services can meet them all. By entrusting your project to our team, the manufacturing, transformer installation and commissioning can be planned, programmed and completed with the minimum of inconvenience and all from the one source. Winder Power Substation Services also operates a 24 hour breakdown service with fully trained engineers on hand to help restore your electrical power supply.

We can also relocate your transformer, then carry out all necessary tests to ensure satisfactory operation.

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Transformer Servicing & Maintenance

Winder Power Substation Services has extensive experience in delivering a full suite of transformer servicing activities, including:

- On site maintenance and repairs to power and distribution transformers.
- Oil treatment including oil changes, filtration and Ilovac oil analysis covering PCB.
- Dissolved gas and routine tests.
- On load tap changer servicing.
- Testing and commissioning of transformers and associated protection equipment.
- Transformer fault diagnosis.
- Cleaning and repainting transformer tanks and radiators.

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Testing & Commissioning

Substation Services offer a full range of on-site transformer testing and fault diagnosis including:

- Visual conditional assessments.
- Full range of oil sampling analysis.
- Transformer Ratio, Vector Group and Magnetising Current Testing.
- Insulation Resistance Testing inclusive of insulation measurements, test of windings and the transformer core.
- Fault diagnosis and Finger-print Testing inclusive of winding resistance and Sweep Frequency Response Analysis (SFRA).
- CT & VT Analysis.
- Testing of all types of auxiliary protection instruments.
- Full DNO pre-commissioning works.

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On-site Transformer Cleaning & Painting

Cleaning and painting the transformer will ensure the long-term protection of the high voltage assets.

We recommend that transformers & auxiliary equipment are cleaned and painted every 5 years for coastal and marine environments and every 10 years for transformers located inland and within industrial environments. Transformers showing signs of corrosion can develop major issues such as tripping out of service or failure.

If the site has no restrictions and exposed conductors, our qualified team can clean and paint transformers without the need for taking them out of service.

Substation Services can offer a full range of on-site cleaning & painting including:

- Steam clean to remove oil residue, contaminants, flaking paint & any visual residues.
- Rust removal and surface preparation & treatment.
- Masking of all auxiliary equipment, labels & sight glasses.
- Spray paint using undercoat then semi-gloss coat to the following equipment: transformer tank, cooler banks, radiators, conservator, and auxiliary equipment.
- De-masking all equipment and provide replacement labels.

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On-site Transformer Refurbishment

Winder Power Substation Services is well equipped to carry out full overhauling and transformer refurbishments (upgrades) to customers' own equipment on voltages up to 132kV:

Winder Power understand the importance of keeping the clients assets online. To ensure minimal disruption, we will work with the client to put together a suitable programme.

Winder Power offer a range of services for on-site refurbishment works including:

- Cooler-bank replacements.
- Regasketing units.
- Painting works.
- Commissioning works.
- Bushing refurbishment & replacement.
- Marshalling Kiosk replacement and rewiring.
- Molecular sieve

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Cooler Bank Replacement

Winder Power Substation Services is a market leader in the UK for on-site power transformer upgrades, replacement cooler banks, modifications, ONAF power rating enhancement and refurbishment works.

Winder Power Substation Services has a proven track record in this field and within the past two years, has provided over 30 transformer cooler bank upgrades.

Due to the cost involved with a new transformer there is growing demand for transformer upgrades with new cooler banks. In many cases the transformer tank itself is generally in good condition but the cooler bank can often be in poor condition, with the potential risk of failure. By carrying out a cooler bank transformer upgrade the life expectancy of a power transformer can be increased to last as long as the main transformer tank, which could be anything from 10-20 years depending on the specific site conditions. This has the benefit of reducing the asset owner's capital expenditure.

Winder Power Substation Services offers a bespoke service on cooler bank transformer upgrades, from smaller tasks such as treating & repainting metallic surfaces and repairing oil leaks, through to a fully engineered, new cooler bank design. This would be supplied complete with a new A-Frame and Conny, radiators, pipework, marshalling kiosk, cooling fans and other associated protection & control devices.

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Marshalling Kiosk Replacements

Winder Power is a leading supplier of marshalling Kiosks / remote control kiosks for use in electrical substations and other outdoor applications.

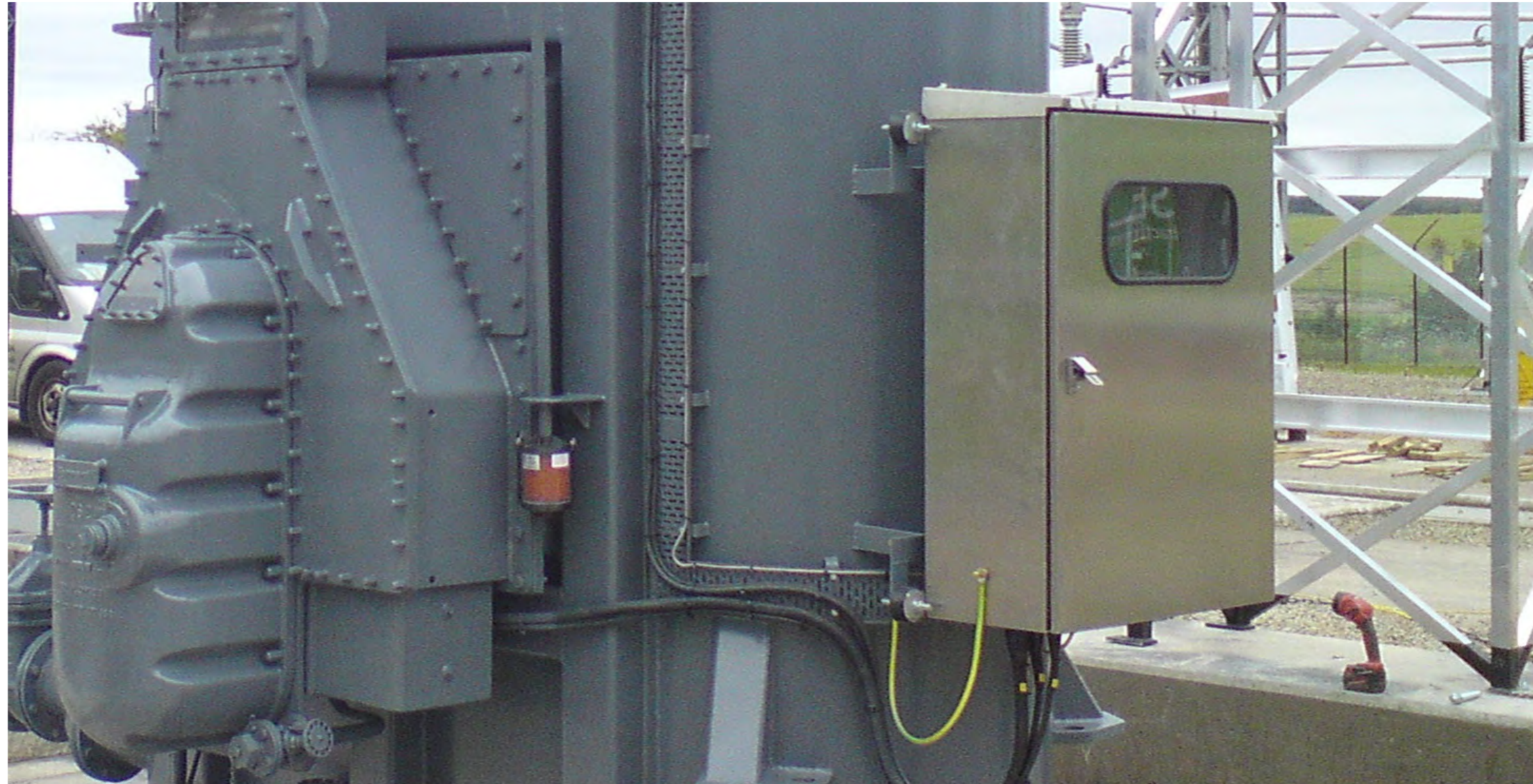
Marshalling kiosks are used to provide convenient connection points for the various control, protection and instrumentation wires which are used in different substation plants.

Our outdoor marshalling kiosks are custom designed for each individual application, whilst the design process ensures that the correct amount of equipment is included for both the current application and also for any future expansion that may be required. The marshalling kiosks / remote interface kiosks can be provided with front and rear access, or in some applications front only access where substation space may be limited.

Key Features:

- Single or double bay marshalling kiosks.
- Kiosk manufactured from 2.0mm gauge stainless steel grade 316 natural finish.
- Supplied with oil and winding temperature indicators with contacts and capillary length to suit.
- Single or double opening doors at front and back of cabinet as required.
- Up to IP65 protection.
- 3-point locking and metal swing handle with opening for padlock.
- Door stays in each door.
- Document holders.
- External lifting eyes and ground fixing points with anchor bolt kit.
- External breather gland to alleviate condensation.
- Cable management facilities and base gland plates.
- Supplied fully assembled.
- Also, we offer painted Kiosk.

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Cable Box & Bushing Replacements

The improvement and development of HV & LV cable boxes and terminations has resulted in eliminating the old compound filled cable box.

Substation Services can provide bespoke engineering solutions in both the utility and industrial market. This includes the provision of air insulated cable boxes to replace old compound boxes up to 66kV.

We also offer solutions for the replacement of HV & LV bushings up to 132kV and also provide maintenance and repairs on to outdoor bushings.



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Containerised Substations

Winder Power is a specialist in the design, manufacture and supply of containerised substations. These containers are supplied in either ISO 20 or 40 foot options, modified to suit any bespoke design arrangement up to 6.6kV, 11kV, 20kV & 33kV.

A typical standard arrangement of one of our containerised substations are:

- New or refurbished oil or midel type distribution transformers.
- New or refurbished cast resin transformers.
- MV breakers and switchgear to the customers specific requirements.
- Bespoke LV distribution boards to the customers exact requirements.
- Fluorescent and emergency lighting.
- Mesh fence segregation with door access between the HV & LV compartments.
- HV & LV cable entry points as required.
- 30V battery tripping unit.
- Air conditioning with thermostatic control.
- Battery back up.
- Internal earth bars.
- Safety and ID labelling inside and out to suit.

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HV & LV Cabling

Winder Power Substation Services engineers have extensive HV & LV transformer cabling experience gained from working with many of the UK's leading power and utilities companies.

Our specialist knowledge encompasses the field of installing, terminating and jointing power cables from low voltages up to 33kV.

Winder Power Substation Services team is also highly experienced in the installation of signalling and communications cables as well as providing a full design solution. The use of extensive calculations and schematics is critical to providing the most effective approach to the required design criteria.

The Substation Services team also provide a range of civil works for cable installation needs, including:

- Ducting and trenching.
- Laying appropriate sand layers and cable tiles.
- Reinstating the original surface, including concreting and tarmacking.

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HV & LV Cabling

Cable Containment

Winder Power Substation Services specialises in cabling containment systems and offer bespoke solutions. This includes utilising cable ladder, tray and uni-strut supports whereby the cables are fastened utilising the latest technology in cable ties, cleats, brackets and band-it fixing methods.

Cable Testing

Our specialist commissioning engineers can also carry out many cable tests including:

- Insulation resistance.
- Phase rotation.
- Continuity.
- Impedance.
- Current leakage.
- High voltage withstand pressure.
- Fault location.
- Partial discharge.

Additional Cable Services

The following transformer cabling services can also be offered:

- HV & LV cable pulling diversions and jointing, providing full compliance with all necessary regulations.
- All work is regularly subjected to inspection and approval from our Substation Services team prior to customer hand over.

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Switchgear Installations, Servicing & Maintenance

Winder Power Substation Services caters for any type of switchgear installation, from a small single LV circuit breaker panel to a large multiple panel 33kV switchboard.

Modifications, refurbishment & maintenance

As well as carrying out new switchgear installations, Winder Power Substation Services also undertake switchgear modifications to existing units along with a complete retrofit of internal apparatus. The team also overhaul existing switchgear panels to give them a new lease of life.

HV & LV switchgear installations & testing

The Winder Power Substation Services team has extensive expertise and knowledge in providing the best cost effective, engineered solution, to cater for any application.

Along with the switchgear installation, Winder Power Substation Services can also provide bespoke protection devices, control equipment and metering instruments which are either integral to the switchgear panel or are in a separate remote enclosure. All types of switchgear commissioning can also be provided.



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Offshore & Global Transformer Maintenance

Substation Services have engineers which are trained to work offshore having obtained the basic offshore safety induction and emergency training.

We have successfully refurbished and provided maintenance for oil and gas companies on platforms such as North Cormorant, Eider and Douglas and other offshore platforms in the North Sea.

Our engineers have worked globally maintaining, testing and installing transformers in Bahrain, Libya, Jamaica, Iraq, Singapore, Germany, France, Netherlands to name but a few regions. We can undertake:

- Transformer decommissioning.
- New transformer positioning.
- Assembly & commissioning.
- Basic maintenance: cleaning of surface and air ducts.
- Checks of electrical connections and mechanical tightness.
- Condition diagnostics.
- Failure investigation.
- Upgrades, modifications and repairs of terminals and cable boxes.
- Enclosure replacements.
- Adjustment and installation of temperature control system: temperature control unit settings, temperature sensors, fans, pumps etc.
- Also we can provide engineers for Substation inspections for asset register and/or defect reporting.

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DNO Safety Document Acceptance

Substation Services also provide authorised persons to hold permits and act as a standby man for the following utility customers:

- Electricity North West Ltd
- National Grid
- Northern Powergrid (Yorkshire & Northeast)
- Scottish Power Energy Networks (SPEN & SP Manweb PLC)
- Scottish & Southern Electricity Networks (SSE)



ELECTRICITY DISTRIBUTION NETWORKS

- Scottish & Southern Electricity Networks
- SP Energy Networks
- Electricity North West
- Northern Powergrid
- UK Power Networks
- Western Power Distribution

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winder power

substation services

Winder Power Limited
Grangefield House, Richardshaw Road
Pudsey, Leeds LS28 6QS
United Kingdom

+44(0)1132 555 666
sales@winder.co.uk

www.winderpower.co.uk







