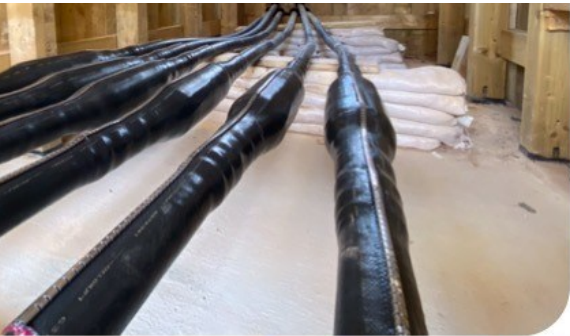




WOOTTON & WOOTTON

TRANSMISSION & DISTRIBUTION LTD



Current Projects in Progress—Q3/Q4 2020

- Wakefield North—Skelton Grange 132kV Gas Overlay, Wakefield, West Yorkshire
 - * Supply & install 102 x 132kV Tyco EHVS 3 piece straight joints
 - * Supply & install 12 x 132kV Tyco OHVT cable sealing ends
 - * Supply & install 12 x LBM3 link boxes
 - * Carry out all sheath testing
 - * Carry out 2 x AC VLF pressure test at 141kV

- Turweston HS2 132kV diversions, Near Brackley, Northamptonshire
 - * Install 12 x 132kV Südkabel cable sealing ends
 - * Install 12 x LBM2 linkboxes
 - * Install 12 x ABB surge arrestors

- New 132kV Substation Connection, Glan Llyn, Newport, South Wales
 - * Install 12 x 132kV Prysmian cable sealing ends
 - * Install 12 x LBM2 linkboxes
 - * Carry out all sheath testing
 - * Carry out 2 x AC VLF pressure test at 129.5kV with Partial Discharge & Tan Delta diagnostics

- Lea Marston—Chemsley Wood 132kV HS2 Diversion, Birmingham, West Midlands
 - * Install 3 x Prysmian 132kV sectionalised straight joints
 - * Install 6 x Prysmian 132kV non-sectionalised straight joints
 - * Install joint by earth mat
 - * Install 1 x LBM18 linkbox
 - * Carry out all cable spiking & receipt of safety documents
 - * Carry out all sheath testing
 - * Carry out an AC VLF pressure test at 129.5kV with Partial Discharge & Tan Delta diagnostics

- Orders for in excess of 10 x 132kV pressure tests with and without PD/TD diagnostics

- Order for the de-commissioning of 39,000m of 132kV oil filled cable

132kV Reinforcement Project - Shrewsbury, Shropshire

Western Power Distribution recognised the increasing load at Shrewsbury GSP and was predicted to exceed its n-1 firm capacity of 117MVA by the end of DR5. Therefore, they installed a third 132/33kV transformer, auxiliary transformer and associated apparatus to accommodate the growth

Wootton & Wootton were contracted to provide a turnkey package for the project management, excavation & reinstatement, installation of 132 & 33kV cables. This included the installation of temporary work platforms, all terminations and cable sealing ends, sheath testing and 132kV pressure testing upon completion.

The works were successfully completed on budget and ahead of schedule.



Scope:

To excavate backfill & reinstate 240m of track to accommodate 132 & 33kV cables

Installation of 3 x direct laid (160m) 132kV 400mm Cu, XLPE, Pb sheath, CWS, & MDPE outer sheath Cables between the new GT4 and the new S/S structures within the AIS compound

Installation of 9 x (45m) 33kV 630mm Cu XLPE CWS Cables between the new GT4 and the existing switchgear

Installation of 3 x (30m) 33kV 630mm Cu XLPE CWS Cables between the new GT4 and the Auxiliary transformer

Installation of 1 x (15m) 33kV 630mm Cu XLPE CWS Cables between the new GT4 Auxiliary transformer to the LNER

To install 6 x 132kV Prysmian sealing ends

To install 6 x link boxes including bonding lead installation and connections

To install 16 x 630mm 33kV 400 series Euromold terminations onto the 132/33kV transformer and associated auxiliary transformer

To supply & install 1 x 33kV Outdoor termination onto the LNER

To supply & install scaffold structures at each 132kV CSE position

To drill all transformer gland plates and supply & install all cable management & cleating requirements

Carry out Pressure test, Tan Delta test and Partial Discharge mapping of the 132kV cable system upon completion

To supply full time project management and monitored security system for the duration of the project, authorised standby supervision where required, verify cable system design and supply the client with as laid drawings and appropriate handover paperwork.

132kV Oil Filled Cable Overlay – Ferrybridge to Osbaldwick, West Yorkshire

Northern Powergrid decided to overlay the existing oil filled 132kV circuit with modern day XLPE as the existing cables were prone to leaks, resulting in environmental concerns and had reached the end of their design life.

Wootton & Wootton were contracted to install the cables within the shared National Grid and Northern Powergrid substation, install intermediate straight joints, cable sealing ends & decommission the existing oil filled cables upon completion and energisation of the new circuit.

Despite a very tight outage programme with a lot to do in a short space of time our teams exceeded expectations and completed works both on schedule and on budget.



Scope:

- To install 45 x 132kV Prysmian 1c 132kV XLPE 400mm Cu CWS/Pb straight joints
- To install 9 x 132kV Tyco 1c 132kV XLPE 400mm Cu CWS/Pb straight joints
- To install 1 x 132kV Pfisterer 1c 132kV 400mm Cu CWS/Pb straight joint
- To install 3 x 132kV Tyco 1c 132kV 400mm Cu CWS/Pb Cable Sealing Ends
- To install 3 x 400mm 132kV XLPE cables into position on modified CSE structures within shared National Grid/Northern Powergrid substation
- Busbar work including disconnection & reconnection of 3 x 4m pieces of 50mm Cu busbar, cleaning & re-tinning of copper work and busbars and installation of new busbar clamps
- Modify existing sealing end structures to accept the new CSE's
- Successfully DC sheath test cable upon completion
- Assist with 132kV AC power frequency pressure tests upon completion
- Removal of 3 x existing 132kV sealing ends
- Removal of 3 x 300l plinth mounted oil tanks
- Removal of gauges & all ancillary equipment
- Full de-oiling & decommissioning of the 8.5km redundant oil filled cable circuit
- Permanent capping of the existing cables using plumbed brass caps
- Standby supervision for civil and scaffolding works
- Co-ordination & planning of outages with client engineering resource and Northern Powergrid engineers.

132kV Reinforcement Project – Selly Oak, Birmingham

Western Power Distribution recognised that there was to be a significant load growth in Birmingham out of Selly Oak switching station and have therefore looked to reinforce/upgrade the substation to allow for the future needs of the city.

Wootton & Wootton were contracted to provide a turnkey package for the project management, excavation & reinstatement, installation of 132 & 11kV cables. This included the installation of temporary work platforms, all terminations and cable sealing ends, Sheath testing and 132kV pressure testing upon completion including Partial Discharge mapping and Tan Delta diagnostics.

The project was completed on budget and within predicted timescales.



Scope:

Excavate backfill & reinstate track to accommodate 132kV cable

Installation of 3 x 132kV 630mm Cu, XLPE, Pb sheath, CWS, & MDPE outer sheath Cables between the CSE structures and the new 132/11kV Transformer CSE structures

Installation of 9 x 11kV 630mm Cu XLPE CWS Cables between the new Transformer and the new switchgear

Installation of 3 x 11kV 630mm Cu XLPE CWS Cables between the new Transformer to the Auxiliary Transformer including cable management

Installation and termination of 4c 95 waveform LV cable

Installation 2 x 132kV CSE Structures

To install 6 x 132kV Prysmian sealing ends

To install 6 x LBM2 link boxes including bonding lead installation and connections

To install 15 x 630mm 11kV 400 series Euromold terminations onto the 132/11kV transformer, switchgear & auxiliary transformer

To supply & install scaffold structures at each 132kV CSE position

To drill all transformer gland plates and supply & install all cable management & cleating requirements

Carry out Pressure test, Tan Delta test and Partial Discharge mapping of the 132kV cable system upon completion

To supply full time project management, authorised standby supervision where required and supplied the client with appropriate handover paperwork.

132kV Works—Dagenham Data Centre

Wootton & Wootton were contracted to complete 132kV jointing, terminating and link boxes for a new data centre being built near Dagenham, East London. In addition, we procured all of the jointing materials including the materials handling to minimise the storage and waste requirements onsite for our client.

The works were successfully completed on time & budget.



Scope:

Supply, storage and handling of 66 x 132kV Tyco 3-piece joints, 6 x 132kV PHVS GIS Tyco terminations, 6 x 132kV OHVT cable sealing ends.

To install 66 x 132kV Tyco EHVS 3 piece joints

To install 6 x 132kV Tyco PHVS GIS terminations

To install 6 x 132kV Tyco OHVT cable sealing ends

Installation of associated link boxes

All cable sheath testing

Final end to end sheath testing

132kV Substation Re-build—Undisclosed Location

Wootton & Wootton were contracted to complete jointing for a 132kV substation rebuild as part of a wider project to install a new transformer and generally renew a National Grid yard. There is both Südkabel and Prysmian accessories on the project.

The works were successfully completed on time & budget.



Scope:

To install 6 x 170kV Südkabel cable sealing ends

To install 12 x Prysmian cable sealing ends

To install all associated linkboxes

132kV Works—Wickham Market Battery Storage, Suffolk

Wootton & Wootton were contracted to complete jointing for the 132kV connection of a new 50MW battery storage site being built at Wickham Market, Suffolk.

The works were successfully completed on time & budget.



Scope:

To install 3 x Tyco 132kV EHVS cable sealing end

To install 3 x NKT CD145 GIS terminations

132kV Oil Filled Cable Overlay – Whinmoor, Leeds

Northern Powergrid decided to overlay the existing oil filled 132kV circuit with modern day XLPE as the existing cables were prone to leaks, resulting in environmental concerns and had reached the end of their design life.

Wootton & Wootton were contracted to supply & install intermediate straight joints, cable sealing ends, associated link boxes, undertake AC VLF pressure testing prior to energisation & decommission the existing oil filled cables upon completion and energisation of the new circuit.

Our teams exceeded expectations and completed works both on schedule and on budget.

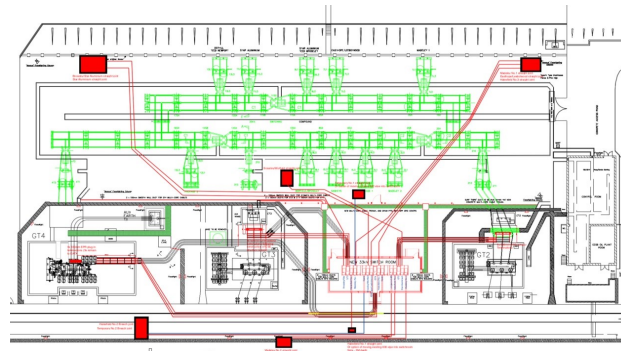


Scope:

- Supply and handling of 30 x 132kV Tyco 3-piece joints & 12 x 132kV OHVT cable sealing ends.
- To install 30 x 132kV Tyco 1c 132kV XLPE 1200mm Cu CWS/Pb straight joints
- To install 12 x 132kV Tyco 1c 132kV 1200mm Cu CWS/Pb Cable Sealing Ends
- To undertake steelwork modifications on the CSE structures at the tower to accept the new cable accessories
- Carry out all sheath testing during and upon completion of jointing
- Carry out 132kV AC VLF pressure tests upon completion
- Removal & disposal of 6 x existing 132kV sealing ends
- Decommissioning & removal of oil tanks & all ancillary equipment
- Fully de-oil & decommission 2 x 1235m redundant oil filled cable circuits
- Permanent capping of the existing cables using plumbed brass caps
- Standby supervision for civil and scaffolding works
- Coordination & planning of outages with client engineering resource and Northern Powergrid engineers.

AIS to GIS 33kV Project – Ironbridge, Shropshire

Western Power Distribution decided to build a new switch house and replace the existing 33kV outdoor oil circuit breakers and air insulated isolators at Ironbridge BSP for GIS circuit breakers. The works required the re-routing of 13 feeders, 3 Grid Transformers and two temporary connections to maintain the network while works were undertaken. The works were successfully completed on time & budget ahead of schedule.



Scope:

- To excavate all track required, joint holes & areas of mass excavation as necessary.
- To provide standby supervision as required to carry out work in the AIS compound
- To install all new cables – 400mm² XLPE & 630mm² XLPE
- To install cable management at each transformer position
- To reinstate all excavations to match the existing
- To install 18 x 33kV 630mm Outdoor terminations
- To install 45 x 33kV Euromold terminations
- To install 15 x 33kV Euromold surge arrestors
- To install 27 x 33kV Size 3 630mm Pfisterer terminations
- To install 6 x 33kV Size 3 Pfisterer breech joints
- To install 9 x 33kV 400mm Straight Joints
- To install 24 x 33kV Transitional Straight Joints

33kV Works—HS2 Enabling Works, Nr Leamington Spa

Wootton & Wootton were contracted to undertake 33kV cabling and jointing for our client as part of the HS2 enabling works in the Midlands. The project was 7.5km in length on local roads near Leamington Spa and using our multi-skilled operatives we cable and jointed 14 sections under road closures.

The works were successfully completed ahead of schedule & within budget despite, material failures, a strict programme due to road closures and the high profile nature locally of the over arching project.



Scope:

Installation of 45,000m of 33kV single core 185mm² copper power cable and 15,000m of 19 pair telephone cables

To install 78 x 33kV Lovink joints

All cable sheath testing

Final end to end sheath testing

33/11kV Transformer Replacement Project - Halesfield Substation, Shropshire

Western Power Distribution (WPD) has decided to change the existing 3 x 33/11kV transformers as the existing ones have reached the end of their design life. Wootton & Wootton were contracted to provide a turnkey package for the excavation & reinstatement, installation of 11kV cables and associated jointing and terminating.

The works were successfully completed on time & budget ahead of schedule on all 3 outages



Scope:

- To excavate joint holes & track as necessary
- To pull out the existing cables and clean the existing ducts with brush, foam pig & jetting where required
- To install new cables between the joint hole and transformer and transformer to NER (7 x 11kV 630mm XLPE CWS cables per transformer)
- To install cable management at each transformer position
- To supply & install 40T of washed pebbles within transformer bunds
- To reinstate all excavations to match the existing
- To install 7 x sets of 3 11kV 630mm Euromold terminations
- To install 1 x sets of 3 11kV 630mm Outdoor terminations
- To install 6 x sets of 3 11kV transitional straight joints
- To drill transformer gland plates
- To carry out all necessary cable spiking

11kV Works - Didcot 'B' Power Station OCGT, Oxfordshire

Power Station Owner & Operator Npower need to relocate the existing OCGT (open cycle gas turbine) 11kv switch room to allow for the decommissioning & demolition of Didcot B Coal fired Power station. This meant considerable rerouting of cables and jointing works.

The works were successfully completed on time & budget despite the very awkward access to the switchgear cable boxes & cable management underneath the S/S.



Scope:

Installation of the new 11 KV 800mm XLPE CWS cabling between the new switch room and OCGT 1,2,3, & 4 including all cable management

Installation of the new 11 KV 800mm XLPE CWS cabling between the new switch room and Station Transformer 1 & 2 including all cable management

Installation of the new 11 KV 300mm Triplex cabling between the new switch room and Auxiliary Transformers 1&2.

Installation of the new LV 1c 240mm AWA cabling between the new LVAC Board & Auxiliary Transformer 1 & 2.

To install 24 x 11Kv transitional Bifurcating joints 2 x 1c 800mm XLPE CWS – 1c 1600mm PILC.

To install 48 x 1c 800mm XLPE CWS Nexans Heat shrink indoor terminations.

To install 12 x 300mm Triplex Nexans Heat shrink indoor terminations.

To install 28 x 240mm LV terminations onto the LVAC board & Tx cable boxes.

To carryout AC VLF pressure tests on the new switchboard

To carryout AC VLF pressure tests before and after jointing.

St Vincent & the Grenadines— Phase 1

Vinlec is responsible for the Generation & Transmission and Distribution of electricity to, 42,000 customers on the 32 islands of St Vincent & The Grenadines in the West Indies.

They recognised the necessity to upgrade the High Voltage network to keep up with demand and to expand the 33kV network interconnecting the new & existing diesel power stations with an existing Hydro station. Wootton & Wootton was contracted to install all associated cable joints & termination on the newly installed 33&11kV cables.

South Rivers Hydro Station, Kingstown S/S, Lowman's Bay Power Station, Cane Hall Power station

Scope

To supply labour tools and equipment to install:

- 24 x 33kV outdoor terminations
- 30 x 33kV indoor switchgear terminations
- 15 x 33kV indoor transformer terminations
- 9 x 11kV indoor switchgear terminations
- 9 x 11kV indoor transformer terminations
- 12 x 33 KV straight joints

To supply labour tools and equipment to breakdown the existing 11kV cable box & modify gland plate to suit

After a difficult & frustrating project in a country where there is little in the way of infrastructure we completed the works within the given timeframes and on budget.



St Vincent & the Grenadines—Phase 2

Cane Hall Transformer replacement

It was necessary to re install the existing transformer after it had been sent back to the manufacturers to have the tertiary winding re wound, upon completion it was shipped back to Kingstown, St Vincent. Wootton & Wootton was awarded the project to carryout the following works:

Scope

To supply project management & liaise with client on a daily basis

To supply labour tools & equipment to accept delivery & position 33/11kv 10MVA transformer onto plinth

To supply labour tools & equipment to install primary & secondary bushings, primary & secondary cable boxes, radiators / cooling fins, conservator, associated pipework & Buchholz, terminate all control cables, fill transformer with new insulating oil and carryout oil filtration works

To supply labour tools & equipment to commission the transformer, to include; winding pressure tests; HV & LV CT primary injection test; Ratio checks; temperature indicator tests & cable pressure testing

To supply labour tools and equipment to install 3 x 33kV indoor switchgear terminations

To supply labour tools and equipment to install 3 x 33kV indoor transformer terminations

To supply labour tools and equipment to install 3 x 11kV indoor switchgear terminations

Upon completion hand over all associated QA documentation & test certificates

After a difficult & frustrating project in a country where there is little in the way of infrastructure & support the transformer was successfully energised on time and on budget despite the daily challenges, which we overcame with professionalism and dedication.

