

# Electricity Policy Document 307

Issue 27      September 2023

## Equipment Approved for Use on Electricity North West Network



## Amendment Summary

ISSUE NO. DATE	DESCRIPTION
<b>Issue 19</b> <b>July 2021</b>	<p>New Template Applied. Appendix Section E2 updated to include the new ABB ZX0.2 33kV Switchgear that we are trialling on the network. Section E4 added to cover new ground mounted distribution transformers to trial. Section A3 updated to cover the new section E4. Sections A3 and A4 updated to reflect company name changes.</p> <p>Prepared by: Matthew Kayes Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, Engineering and Technical Director</p>
<b>Issue 20</b> <b>November 2021</b>	<p>Section E4 added to cover new 500kVA 11kV Cable Connected ground mounted distribution transformers to trial.</p> <p>Prepared by: Matthew Kayes Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, Engineering and Technical Director</p>
<b>Issue 21</b> <b>January 2022</b>	<p>Headings corrected with numbering re-added for LV Switchgear (new 2.2.6) and Retrofit (new 2.2.7) CB's, subsequent numbering increased accordingly. Section A2 updated with Winders transformer ratings. Section A6 updated to include GE Grid Solutions Disconnectors and remove legacy disconnectors no-longer approved to use.</p> <p>Prepared by: Matthew Kayes Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, DSO Director</p>
<b>Issue 22</b> <b>April 2022</b>	<p>Section A6 updated to rename ABB as Hitachi Energy after Padiham installation. Section E5 added to cover new 132kV CB installed at Ulverston and PASS MO MEBO units.</p> <p>Prepared by: Matthew Kayes Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, DSO Director</p>
<b>Issue 23</b> <b>December 2022</b>	<p>Sections A3 and A4 updated to include Toshiba Ground Mounted Distribution Transformers and Kyte Powertech Tier 2 Eco Directive compliant transformers. Section A3 updated to cover iST Borrowdale Replacement Transformers.</p> <p>Prepared by: Matthew Kayes Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, DSO Director</p>

<b>Issue 24</b> <b>January 2023</b>	Appendix E updated to include a new mask for Asbestos Work which is on Trial within ENWL and ENWS.  Prepared by: Louise Law Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, DSO Director
<b>Issue 25</b> <b>April 2023</b>	<a href="#">Appendix A Section A13</a> updated to remove the Lucy ABSD Actuator from the Approved List of Equipment for use  Prepared by: Matthew Kayes Approved by: Policy Approval Panel and signed on its behalf by Steve Cox, DSO Director
<b>Issue 26</b> <b>August 2023</b>	<a href="#">Appendix A section A2</a> updated to add Kolektor Etra 11.5/23MVA Primary Transformer to the Approved List of Equipment for use. Efacec Primary Transformer Voltage added.  Prepared by: Matthew Kayes Approved by: Policy Approval Panel and signed on its behalf by Paul Turner, PAP Chairperson
<b>Issue 27</b> <b>September 2023</b>	Appendix B10 and Appendix C updated to refer to the latest updated Approved Equipment spreadsheet.  Prepared by: Simon Rushton Approved by: Policy Approval Panel and signed on its behalf by Paul Turner, PAP Chairperson

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## 1 Scope

This Electricity Policy Document (EPD) defines the range of equipment that can be newly installed or re-used on the electricity distribution network owned by Electricity North West Limited, hereinafter referred to as Electricity North West.

All equipment shall be approved by Electricity North West Policy and Standards Department.

## 2 Plant

All new equipment approved by Electricity North West Policy and Standards Department for installation can be found in [Appendices A to E](#).

All equipment that can be re-furbished or purchased where a fit for purpose unit can be sourced can be located in [Appendix F](#).

Any plant which has been condemned on site shall not be refurbished or re-used.

### 2.1 Transformers

#### 2.1.1 Bulk Supply Transformer

These transformers shall conform to Electricity North West Electricity Specification (ES) ES324. These transformers shall have a primary voltage of 132kV and a secondary voltage of 33kV, 25kV, 11kV or 6.6kV.

These transformers will form part of a bulk tender issued from time to time by Electricity North West.

If the transformers are of a design or from a manufacturing location not previously used on the Electricity North West electricity network type tests shall be carried out. A person nominated by the Policy and Standards Manager, Electricity North West shall witness the type tests.

The approved manufacturers and locations are given in [Appendix A, Clause A1](#).

#### 2.1.2 Primary Transformers

These transformers shall conform to Electricity North West Electricity Specification ES323. These transformers shall have a primary voltage of 33kV and a secondary voltage of 11kV or 6.6kV.

These transformers will form part of a bulk tender issued from time to time by Electricity North West.

If the transformers are of a design or from a manufacturing location not previously used on the Electricity North West electricity network type tests shall be carried out. A person nominated by the Policy and Standards Manager, Electricity North West shall witness the type tests.

The approved manufacturers and locations are given in [Appendix A, Clause A2](#).



### 2.1.3 Ground Mounted Distribution Transformers

These transformers shall conform to Electricity North West Electricity Specification ES322. Distribution transformers shall have a primary voltage of 11kV or 6.6kV and a secondary voltage of 433/250V.

These transformers will form part of a bulk tender issued from time to time by Electricity North West.

If the transformers are of a design or from a manufacturing location not previously used on the Electricity North West electricity network type tests shall be carried out. A person nominated by the Policy and Standards Manager, Electricity North West shall witness the type tests.

The approved manufacturers and locations are given in [Appendix A, Clause A3](#).

### 2.1.4 Pole Mounted Distribution Transformers

These transformers shall conform to Electricity North West Electricity Specification ES321. Distribution transformers shall have a primary voltage of 11kV or 6.6kV and a secondary voltage of 433/250V.

These transformers will form part of a bulk tender issued from time to time by Electricity North West.

If the transformers are of a design or from a manufacturing location not previously used on the Electricity North West electricity network type tests shall be carried out. A person nominated by the Policy and Standards Manager, Electricity North West shall witness the type tests.

The approved manufacturers and locations are given in [Appendix A, Clause A4](#).

### 2.1.5 Voltage Stabilisers

These stabilisers shall conform to Electricity North West Electricity Specification ES325.

These stabilisers will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers and locations are given in [Appendix A, Clause A5](#).

## 2.2 Switchgear

No switchgear trucks may be transferred between substations without the prior approval of the Electricity North West Policy and Standards Manager or his appointed deputy.

### 2.2.1 132kV Switchgear

This switchgear shall conform to Electricity North West Electricity Specification ES310.

132kV switchgear will be issued for tender on an individual basis by Electricity North West.

The approved manufacturers and switchgear types are given in [Appendix A, Clause A6](#).

### 2.2.2 33kV Switchgear

This switchgear shall conform to Electricity North West Electricity Specification ES312.

33kV switchgear will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers and switchgear types are given in [Appendix A, Clause A7](#).

### 2.2.3 11/6.6kV Primary Switchgear

This switchgear shall conform to Electricity North West Electricity Specification ES313.

11/6.6kV switchgear will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers and switchgear types are given in [Appendix A, Clause A8](#).

### 2.2.4 11/6.6kV Distribution Switchgear

This switchgear shall conform to Electricity North West Electricity Specification ES314.

11/6.6kV distribution switchgear will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers and switchgear types are given in [Appendix A, Clause A9](#).

### 2.2.5 33/11/6.6kV Pole Mounted Switchgear

This switchgear shall conform to Electricity North West Electricity Specification ES311 for Air Break Switches and ES315 for all other pole mounted equipment.

33/11/6.6kV pole-mounted switchgear will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers and switchgear types are given in [Appendix A, Clause A10](#).

### 2.2.6 433/250V Fusegear

This switchgear shall conform to Electricity North West Electricity Specification ES319.

433/250V switchgear will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers and switchgear types are given in [Appendix A, Clause A11](#).

### 2.2.7 Retrofit Actuators for Switches and Circuit Breakers

The actuators shall conform to Electricity North West Electricity Specification ES391. Detail on the application of automation and the communications involved can be found in ES390.

The approved manufacturers and types are given in [Appendix A, Clause A12](#). Note: If the mechanism of air break switch disconnectors is dependent manual the OEM (Original Equipment Manufacturer) of the switch must supply the actuator.

### 2.2.8 Substation Assembly

Substation Assembly Procedures shall conform to Electricity North West Electricity Specification ES320.

The approved suppliers and locations for this service are given in [Appendix A, Clause A13](#).

### 2.2.9 GRP Housings

GRP Housings shall conform to Electricity North West Electricity Specification ES301.

The approved manufacturers are given in [Appendix A, Clause A14](#).

### 2.2.10 Multi-Way Service Distribution Boards

Multi-way service distribution boards shall conform to Electricity North West Electricity Specification ES502.

The approved manufacturers and switchgear types are given in [Appendix A, Clause A15](#).

## 3 Protection

### 3.1 110V Battery and Charging Equipment

This equipment shall conform to Electricity North West Electricity Specification ES330.

110V Batteries will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers are given in [Appendix B, Clause B1](#).

### 3.2 48V Battery and Charging Equipment

This equipment shall conform to Electricity North West Electricity Specification ES331.

48V Batteries will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers are given in [Appendix B, Clause B2](#).

### 3.3 30V Battery and Charging Equipment

This equipment shall conform to Electricity North West Electricity Specification ES339.

30V Batteries will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers are given in [Appendix B, Clause B3](#).

### 3.4 Fuses

This equipment shall conform to Electricity North West Electricity Specification ES334.

Fuses will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers are given in [Appendix B, Clause B4](#).

### 3.5 132kV Free Standing Current Transformers

This equipment shall conform to Electricity North West Electricity Specification ES342.

132kV Current Transformers will be issued for tender on an individual basis by Electricity North West.

The approved manufacturers and types are given in [Appendix B, Clause B5](#).

### 3.6 132kV Free Standing Capacitor Voltage Transformers

This equipment shall conform to Electricity North West Electricity Specification ES343.

132kV Capacitor Voltage Transformers will be issued for tender on an individual basis by Electricity North West.

The approved manufacturers and types are given in [Appendix B, Clause B6](#).

### 3.7 132kV Metering Current and Voltage Transformers

This equipment shall conform to Electricity North West Electricity Specification ES344.

132kV Metering Current and Voltage Transformers will be issued for tender on an individual basis by Electricity North West.

The approved manufacturers and types are given in [Appendix B, Clause B7](#).

### 3.8 Surge Arresters

This equipment shall conform to Electricity North West Electricity Specification ES348.

Surge Arresters will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers and types are given in [Appendix B, Clause B8](#).

### 3.9 Neutral Earthing Resistors

This equipment shall conform to Electricity North West Electricity Specification ES350.

Neutral Earthing Resistors will form part of a bulk tender issued from time to time by Electricity North West.

The approved manufacturers and types are given in [Appendix B, Clause B9](#).

### 3.10 Relays

This equipment shall conform to the requirements of the relevant switchgear specifications.

Relays are purchased as part of the switchgear tenders.

The approved manufacturers and type are given in [Appendix B, Clause B10](#).

## 4 Overhead Circuits

### 4.1 Anti-Climbing Devices

Anti-climbing devices shall conform to Electricity North West Electricity Specification ES400A2.

The approved suppliers and parts for this service are given in [Appendix C](#).

### 4.2 Conductor Drums

Drums used in the supply of Conductors for wood pole overhead lines shall conform to Electricity North West Electricity Specification ES400C1.

The approved suppliers and parts for this service are given in [Appendix C](#).

### 4.3 Connectors and Fittings

Connectors and fittings for overhead lines shall conform to Electricity North West Electricity Specification ES400C29.

The approved suppliers and parts for this service are given in [Appendix C](#).

### 4.4 Overhead Line Conductors

Wood pole overhead line conductors (up to and including 132kV) shall conform to Electricity North West Electricity Specification ES400C3.

The approved suppliers and parts for this service are given in [Appendix C](#).

Steel tower overhead line conductors (33kV and 132kV) shall conform to Electricity North West Electricity Specification ES400C4.

The approved suppliers and parts for this service are given in [Appendix C](#).

### 4.5 Overhead Line Copper Work

Overhead Line copper work shall conform to Electricity North West Electricity Specification ES400C30.

The approved suppliers and parts for this service are given in [Appendix C](#).

### 4.6 Equipment, Installation for Low Voltage Aerial Bundled Conductor

Equipment used for the installation of Low Voltage Aerial Bundled Conductor shall conform to Electricity North West Electricity Specification ES400E7.

The approved suppliers and parts for this service are given in [Appendix C](#).

### 4.7 Fasteners and Washers for Wood Pole Overhead Lines

Fasteners and Washers for wood pole overhead lines shall conform to Electricity North West Electricity Specification ES400F1.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### **4.8 Steel Tower Fall Arrest System**

Steel tower fall arrest systems shall conform to Electricity North West Electricity Specification ES400F2.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### **4.9 Cable Guards**

Cable guards shall conform to Electricity North West Electricity Specification ES400G1.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### **4.10 Helical Fittings**

Overhead line Helical fittings shall conform to Electricity North West Electricity Specification ES400H2.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### **4.11 Insulators**

Overhead line insulators shall conform to Electricity North West Electricity Specification ES400I4.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### **4.12 Notices and Nameplates, Associated Fixings and Marker Posts**

Notices and nameplates, associated fixings and marker posts shall conform to Electricity North West Electricity Specification ES400N1.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### **4.13 Painting of Lattice Steel Towers**

Paint for use on lattice steel towers shall conform to Electricity North West Electricity Specification ES400P3.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### **4.14 Rescue Kits for Wood Poles and Steel Tower Overhead Lines**

Rescue kits for wood poles and steel tower overhead lines shall conform to Electricity North West Electricity Specification ES400R1.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### **4.15 Overhead Line Steelwork**

Overhead line steelwork shall conform to Electricity North West Electricity Specification ES400S11.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### 4.16 Permanent Shrouding

Permanent shrouding for overhead line structures shall conform to Electricity North West Electricity Specification ES400S12.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### 4.17 Temporary Shrouding for Low Voltage Overhead Line Structures

Temporary shrouding for low voltage overhead line structures shall conform to Electricity North West Electricity Specification ES400S15.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### 4.18 Stay Strand

Galvanised steel stay strand shall conform to Electricity North West Electricity Specification ES400S3.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### 4.19 Binding Wire

Aluminium and copper binding wire shall conform to Electricity North West Electricity Specification ES400W1.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### 4.20 Wood Poles

Wood poles shall conform to Electricity North West Electricity Specification ES400W2.

The approved suppliers and parts for this service are given in [Appendix C](#).

#### 4.21 Barbed Wire

Barbed wire shall conform to Electricity North West Electricity Specification ES400W4.

The approved suppliers and parts for this service are given in [Appendix C](#).

### 5 Underground Circuits

### 6 Re-Use of Off Circuit Plant

The policy for the re-use of off circuit plant is given in EPD308. In addition to this policy switchgear may only be re-used if it is listed in [Appendix F](#), as approved for re-use on Electricity North West's distribution system. The procedures for the re-use of off-circuit plant are contained in Electricity North West Code of Practice (CP) CP304 and further refurbishment guidance can be found in CP352 Guidance Notes 1 to 4.

## 7 Equipment on Trial

The equipment approved for use on a trial basis is listed in [Appendix E](#). This equipment must not be used outside the scope of the trial installation without reference to, and the approval of, the Policy and Standards Manager, Electricity North West.

## 8 Definitions

DOCUMENTS REFERENCED	
EPD308	Disposal of Network Assets
CP304	Management of Plant Refurbishment, Disposal and Transfer of Ownership
CP352 GN1	Asset Strategy for Distribution Ring Main Units
CP352 GN2	Asset Strategy for Distribution Extensible Switchgear
CP352 GN3	Asset Strategy for Distribution Transformers
CP352 GN4	Asset Strategy for Distribution LV Plant
ES301	Distribution Substation Housings, Replacement Doors and Roofs
ES310	Gas Insulated Switchgear
ES311	Overhead Line Air Break Switch Disconnectors
ES312	36kV Single Busbar Indoor Switchgear (Cable Connected)
ES313	6.6kV and 11kV Single Busbar Indoor Switchgear (Cable Connected)
ES314	12kV and 7.2kV 21.9kA Switchgear
ES315	12kV and 7.2kV Pole Mounted Reclosers
ES319	LV Distribution Fuseboards
ES320	Preparation and Assembly of Substation Plant (11/6.6kV and LV)
ES321	Pole Mounted Distribution Transformers
ES322	Ground Mounted Distribution Transformers
ES323	33kV/11kV or 6.6kV System Transformer Technical Clauses and Schedules
ES324	132kV/Lower Voltage Transformers, Earthing/Auxiliary Transformers and Neutral Earthing Reactors



<b>ES325</b>	Voltage Stabilisers
<b>ES330</b>	110V Battery and Charging Equipment
<b>ES331</b>	48V Battery and Charging Equipment
<b>ES334</b>	HV and LV Fuses
<b>ES339</b>	30V Battery and Charging Equipment
<b>ES342</b>	132kV Open Terminal Freestanding (Post Type) Current Transformers
<b>ES343</b>	132kV Free Standing (or Post Type) Capacitor Voltage Transformers
<b>ES344</b>	132kV High Accuracy Metering Current and Voltage Transformers
<b>ES348</b>	Surge Arresters
<b>ES350</b>	Specification for Neutral Earthing Resistors at BSP and Primary Substations
<b>ES390</b>	Distribution Automation System for Application on the 11kV and 6.6kV Networks
<b>ES391</b>	Actuators for Long & Crawford Switches
<b>ES400A2</b>	Anti-Climbing Devices
<b>ES400C1</b>	Specification for Drums used in the Supply of Conductor for Wood Pole Overhead Lines
<b>ES400C3</b>	Wood Pole Overhead Line Conductors (up to and including 132kV)
<b>ES400C29</b>	Connectors and Fittings for Overhead Line Conductors
<b>ES400C30</b>	Overhead Line Copper-work
<b>ES400E7</b>	Specification for Equipment, Installation for Low Voltage Aerial Bundled Conductor
<b>ES400F1</b>	Specification for Fasteners and Washers for Wood Pole Overhead Lines
<b>ES400F2</b>	Specification for Steel Tower Fall-arrest System
<b>ES400G1</b>	Cable Guards for Wood Pole Overhead Lines
<b>ES400H2</b>	Supply and Delivery of Helical Fittings
<b>ES400I4</b>	Overhead Line Insulators
<b>ES400N1</b>	Notices and Nameplates, Associated Fixings and Marker Posts – Overhead Lines

<b>ES400P3</b>	Specification for Printing of Lattice Steel Posts
<b>ES400R1</b>	Specification for the Supply of Rescue Kits for Wood Pole and Steel Tower Overhead Lines
<b>ES400S3</b>	Galvanised Steel Stay Strand
<b>ES400S11</b>	Overhead Line Steelwork for Wood Pole Lines and Ancillary Steelwork for Lattice Steel Towers
<b>ES400S12</b>	Specification for Permanent Shrouding for Overhead Line Structures
<b>ES400S15</b>	Temporary Shrouding for LV Overhead Lines Structures
<b>ES400W1</b>	Specification for Aluminium and Copper Binding Wire, Plain and PVC Covered
<b>ES400W2</b>	Wood Poles and Miscellaneous Wooden Items
<b>ES400W4</b>	Specification for Barbed Wire
<b>ES502</b>	Multi-way Service Distribution Boards

## 9 Keywords

Approved; Overhead; Protection; Switchgear; Transformers; Underground

## Appendix A – Plant Approved for use on Electricity North West’s Distribution System (To be read in conjunction with relevant section)

### A1 Bulk Supply Transformer Manufacturers and Locations

The following manufacturing facilities are approved to supply (if ratings other than those stated are purchased witnessed type testing must be carried out):

Siemens (VA Tech and EBG) – Linz, Austria	90MVA, 60MVA and 30MVA.
GE Grid Solutions– Stafford, UK	All Ratings
GE Grid Solutions – Gebze, Turkey	90MVA
SGB – Regensburg, Germany	90MVA
Efacec – Porto, Portugal	60MVA

### A2 Primary Transformer Manufacturers and Locations

The following are approved to supply (if ratings other than those stated are purchased witnessed type testing must be carried out):

GE Grid Solutions – Stafford, UK	All Ratings.
Brush – Loughborough, UK	All Ratings.
Efacec – Porto, Portugal	11.5/23MVA 33/11kV.
Winder Power – Leeds, UK	4/8MVA, 7.5/15MVA, 11.5/23MVA and 16/32MVA.
Kolektor Etra – Ljubljana, Slovenia	11.5/23MVA 33/6.6kV with separate cooling bank design ref 5014.

### A3 Ground Mounted Distribution Transformer Manufacturers and Locations

#### **Tier 1 Eco Directive Compliant.**

Efacec – Porto, Portugal.

Kyte Powertech – Ireland.

#### **Tier 2 Eco Directive Compliant.**

Toshiba Transmission & Distribution Systems - Telangana - 502329, India – 11kV and 6.6KV Tier 2 Unit Type and Cable Connected Type in the following ratings :- 315kVA, 500kVA, 800kVA and 1000kVA.

Kyte Powertech – Ireland in the following types and ratings only :- 11kV Unit Type 315kVA, 500kVA and 1000kVA and 6.6kV Cable Connected 315kVA, 500kVA and 800kVA.

iST – Wythenshaw – Borrowdale Replacement Transformers in the following ratings only :- 11kV 25kVA and 50KVA Single Phase and 100kVA Three Phase. 6.6kV 50kVA Single Phase and 100kVA Three Phase.

## A4 Pole Mounted Distribution Transformer Manufacturers and Locations

Kytopowertech – Ireland – All Tier 2 ratings as per ES321.

Toshiba Transmission & Distribution Systems- Telangana - 502329, India – All Tier 2 Ratings as per ES321 at both 11kV and 6.6kV.

## A5 Voltage Stabilisers

Watford Controls – Corby, UK – LV only

Cooper Power Systems (Langley Engineering) – HV only

## A6 132kV Switchgear Manufacturers and Types

GIS Hitachi Energy (formally ABB) ELK-04

GE Grid Solutions (formally Alstom Grid) F35-2

Siemens 8DN8 – II

CG Global GT01

AIS GE Grid Solutions (formally Alstom Grid) DT1 (Dead Tank Circuit Breaker) manufactured in Germany

GE Grid Solutions (formally Alstom Grid) DT1 MKII (Dead Tank Circuit Breaker) manufactured in Charleroi, USA – subject to the following conditions being met:-

1. Lockable DILO DN8 valve covers are fitted as standard.

GE Grid Solutions S3C 145kV Disconnecter with Motorised Earth Switches Only.

Ruhrta ZBF41 145kV 2000A Disconnecter with MA6 Motorised Mechanism Only

Ruhrta AEBF260 Earthing Switch with MA6 Motorised Mechanism Only

Ruhrta AEBF4 Earthing Switch with MA6 Motorised Mechanism Only

## **A7 33kV Switchgear Manufacturers and Types**

ABB ZX1.2

Schneider (formally Areva) HMX

Schneider (formally Areva) WSA 2000

Schneider (formally Areva) FBE

Siemens 8DA10

Siemens NxPlus

Siemens NXPlus V1 including Bus Bar Earthing Switch.

Lucy Electric (Power Isolators) DSB Substation Disconnecter – Manual operation only

Lucy Electric (Power Isolators) Fault Thrower – Solenoid operation only

## **A8 11kV/6.6kV Primary Switchgear Manufacturers and Types**

Schneider (formally Areva) HWX

Schneider (formally Areva) PIX

Cutler-Hammer W-VAC

Hawker Siddeley (FKI) Eclipse

Schneider Genie Evo

## **A9 11kV/6.6kV Distribution Switchgear Manufacturers and Types**

Schneider - CE2, CE6, SE6, CN2, RN2c, RN6c, MU2, MU6, RE2c, RE6c. Where a relay is used the Approved version is a VIP300 or Micom P116 with cortec code P116A1N2N14121111N only.

Schneider – RN2D, RN6D and RE2D with 21kA rated cable boxes and Micom P116 relay with cortec code is P116A1N2N14121111N only. MU2D and MU6D.

Lucy Electric - SABRE VRN, SABRE VRN2, SABRE VRN2a, AIMU, FRMU Mk2A

## **A10 33kV/11kV/6.6kV Pole Mounted Switchgear Manufacturers and Types**

### **A10.1 33kV Pole Mounted Line Air Break Switch Disconnectors**

Morris Line Equipment (MLE).

### **A10.2 11kV/6.6kV Pole Mounted Reclosers**

Whipp & Bourne GVR.

### **A10.3 11kV/6.6kV Pole Mounted Air Break Switch Disconnectors**

MLE 'R' Type – handle operated

MLE 'RXL' Type – rod or handle operated

Gevea 3-silicone insulator – rod or handle operated

Gevea 2-silicone insulator (for temporary installations only) – rod operated

Lucy Electric (formally Power Isolators) – “Rapier AX and RX” – rod or handle operated

### **A10.4 11kV/6.6kV Pole Mounted Link and Fuse Mounts**

GE Power J&P

MLE

MLE “Trip all phase ASL mounts – 1phase/2gang”

MLE “Trip all phase ASL mounts – 3phase/3gang”

Sefag Mount

Cooper Busmann ASL – to fit all of the above

### **A11 433V/250V Fusegear Manufacturers**

Schneider – Scarborough, UK

Lucy – Oxford, UK (Including AcuLok TMO)

### **A12 Multi-Way Service Distribution Boards Manufacturers**

MODE Range Schneider – Scarborough, UK

MODE Mk II Range Schneider – Scarborough, UK

DB Range Bemco – Glasgow, UK

SDB Range Bemco – Glasgow, UK

### **A13 Retrofit Actuators Manufacturers and Types**

Long & Crawford T4GF3 Long Controls – PowerDrive

Bullgate Engineering Services – Bullgate

J3/J4 Long Controls – PowerDrive (Type 1 and J4 Mk 2 Only)

Bullgate Engineering Services - Bullgate

	R3/4	Long Controls – PowerDrive
Merlin Gerin	CE6	Merlin Gerin CE6 Actuator
		Long Controls - PowerDrive
	SE6	Merlin Gerin SE6 Actuator
		Long Controls – PowerDrive
Lucy Electric	RN2c	Merlin Gerin RN2c Actuator
		Long Controls – PowerDrive
	SABRE	Lucy SABRE Actuator
		Long Controls – Power Drive
Air Break Switch Disconnectors	FRMU	Lucy FRMU Actuator
		Long Controls FRMU Actuator
		Long Controls FRMU Actuator Mk2A (Comm Code 995412)
		Long Controls Spring Actuator Version 01.
South Wales Switchgear	DRT4	Long Controls – Power Drive.

## A14 Retrofit Circuit Breakers

Hawker Siddeley SWR

Hawker Siddeley BSR

P&B Switchgear VOR-M

P&B Switchgear VOR-S

RPS LMVP Mk1 and Mk2

Schneider VMX (legacy VCB approved historically).

Siemens LMT Sion



## **A15 Substation Assembly**

Schneider – Leeds, UK

## **A16 GRP Housing Manufacturers**

Manufacturers and their Approved GA's are listed below.

Envico Engineering, Swansea, UK

1. ENW MM 01 GA – A
2. ENW MM 02 GA – A

Kingsley Plastics, Devon, UK

1. A2-022-02E
2. A2-004-02B
3. A2-016-02H

Kinpars Industrial Plastics, Lauder, UK

1. UU-ES-001
2. UU-ES-001-BR
3. UU-ES-002
4. UU-LG-001

## **A17 Container Housing Manufacturers**

Bradgates, Shepshed, UK

Portastor, York, UK

## **A18 Metal Clad Distribution Substation Manufacturers**

Schneider – Istanbul, Turkey

Compact MDS Substation

The following ratings have been fully type tested and approved for use (subject to ES352):-

11kV            200kVA, 315kVA and 500kVA only.

6.6kV           200kVA and 315kVA only.

## **A19 Substation Door Manufacturers**

TS Designs, Marlow

Prima Doors, Hazel Grove, UK.

Bradbury, Scunthorpe.

## **A20 Substation Lock Manufacturers**

Assa Abloy, Willenhall UK.

Blakeys, Brierfield, UK Switchgear X56 and Safety Locks Only.

## **A21 Substation Signage Suppliers**

Freestyle Signs – Wargrave, Berkshire

Franken Plastics – Germany. (Certain signs only – SAP has approved comm codes).

## **A22 Other Equipment**

### **A22.1 Inspection Equipment for Non-Exposed Busbar Substations**

H Roberts & Sons Allen Vanguard 120-502 CEM/ILL Telescopic Arm Lightweight With Light Pod (HR 120-520).

H Roberts & Sons Allen Vanguard SMC 140mm Diameter Mirror (HR 120-503) for use with the Telescopic Handle.

Horizon Wireless Inspection HD Camera Kit A21 (GP-WICK) for use with Approved HV Switching Rods.

### **A22.2 Test Equipment**

#### **Ductors**

Megger DLRO10

Megger DLRO10HD

Megger DLRO100EB

#### **Thermal Imaging and Temperature Sensing**

FLIR TG165

FLIR E5

### **A22.3 Switching Lanyards**

Clydesdale Remote Operating Device (ROD) UI (Comm code 110415)

## **Appendix B – Protection Approved for use on Electricity North West’s Distribution System (to be read in conjunction with relevant section)**

### **B1 110V Battery and Charging Equipment**

PE Systems Ltd – Leigh, UK

PB Design – Clevedon, UK

Dale Power Solutions – Scarborough, UK

### **B2 48V Battery and Charging Equipment**

PE Systems Ltd – Leigh, UK

### **B3 30V Battery and Charging Equipment**

PE Systems Ltd – Leigh, UK

### **B4 Fuses**

Cooper Bussmann (UK) Ltd – Burton-on-the-Wolds, UK

### **B5 132kV Free Standing Current Transformers**

ABB IMB145 (Porcelain only)

Arteche CA145 (Porcelain only)

### **B6 132kV Free Standing Capacitor Voltage Transformers**

Trench CVE145

### **B7 132kV Metering Current and Voltage Transformers**

Trench IVOKT145

### **B8 Surge Arresters**

6.6 / 11kV      ABB POLIM-D

Siemens 3EK4 150-1CK4 Z (with a stud length of 61mm)

33kV            ABB MWK

Siemens 3EK7 360-5CK4-Z Y11 Y21

132kV          ABB PEXLIM Q132-XV145E

Siemens 3EQ1 132-2PP31 4KA1

## **B9 Neutral Earthing Resistors**

Cressall Resistors Ltd – Leicester, UK

Acrastyle – Ulverston, UK

Cruikshanks – Glasgow, UK

## **B10 Relays**

Refer to associated document “ES281 enwl-approved-equipment-list-Aug2023.xlsx”.

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2023

## **Appendix C – Overhead Circuits Equipment Approved for use on Electricity North West’s Distribution System (to be read in conjunction with relevant section)**

Refer to associated document “ES281 enwl-approved-equipment-list-Aug2023.xlsx”

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**Appendix D – Underground Circuits Equipment Approved for use on  
Electricity North West’s Distribution System (to be read in conjunction  
with relevant section)**

## Appendix E – Equipment Approved for use on a Trail Basis on Electricity North West’s Distribution System

### E1 Pole Mounted Automatic Switch Disconnectors

Schneider Electric                      RL27

### E2 33kV Switchgear Manufacturers and Types

ABB    ZX0.2

Ormazabal                                  CPG.0

Schneider                                  DVCAS

### E3 LV Switchgear Manufacturers and Types

Lucy Electric                              AcuLok

### E4 Ground Mounted Transformer Manufacturers and Types

Gedelsa – for the following ratings only:-

- 1000kVA 11kV 3 phase Unit Type.
- 800kVA 11kV 3 phase Unit Type.
  
- 1000kVA 11kV 3 phase Cable Connected
- 800kVA 11kV 3 phase Cable Connected.
- 500kVA 11kV 3 phase Cable Connected.

Unless where stated all Approved Ground Mounted Distribution Transformers are Eco Directive Tier 1 compliant only.

### E5 132kV Switchgear Manufacturers and Types

Hitachi Energy                              GL312g (utilises G<sub>3</sub> gas).

PASS M0 MEBO.

## E6 Personal Protective Equipment (PPE) on Trial

Clean-Air Powered Air Purifying Respirator (PAPR) (manufactured by Protective Wear Supplies Ltd (PWS))

- Unimask PWS product code: 720300.02
- Neoprene face seal PWS product code: 720300.08NEO
- Clean-Air Basic Filter PWS product code: 810000NA
- Belt PWS product code: 710093
- QuickLOCK hose PWS product code: 710060
- Storage Bag PWS product code: 700007



**WARNING: When working live with this mask and Arc Resistant Visor must be worn over the top.** Failure to use the correct PPE at defined times could increase the severity of personal injury.



## Appendix F – Equipment Approved for Refurbishment and Re-Use on Electricity North West’s Distribution System

This appendix shall be read in conjunction with the refurbishment guidance in CP352 Guidance Notes 1 to 4. Any Plant which has been condemned on site shall not be refurbished or re-used.

### F1 Ring Main Units

#### F1.1 SF<sub>6</sub> Insulated

Brush	Falcon
Long & Crawford/GEC	LCGT
Schneider (Merlin Gerin/YSE)	RN2
	RN2c
	RN6c
	Ringmaster 1
	Ringmaster 2
Alstom (now Schneider)	RT
Lucy Switchgear	SABRE - VRN
	SABRE - VRN2
	SABRE – VRN2a

#### F1.2 Oil Insulated

English Electric	T3/OF
South Wales Switchgear	CROF
Lucy Switchgear	FRMU
Long & Crawford / Alstom	T3GF3
	T4GF3

### F2 Distribution Extensible Switchgear

AEI/GEC	BVP17 and BVRP17
Brush	VSI including R4/2, R8/1 and R8/2 trucks and some of the R4/1 trucks. (Subject to the development of a modification to the loose CT Chamber Insulation Sheets).

	IL, IL2, IL/R, IL2/R, ILSA, ILSA/R
Brush / HSS	VMV12
Cutler Hammer	W-Vac
Ferguson Pailin	IB4
	IB5
GEC	HWX and HWX15
	VMX
	VMXC
Long & Crawford	All GF3, GF3F, GF3M and GF3T.
	GF3D
	J3, J4, J4N, R4 and R4X.
Reyrolle	LMT2
	LMVP
	LM23T
	IMS23
	RMS
SWS / HSS	DRT4 and DRT4-OS
	D4X, D4X6, D4XD, D6XD, D8/12X and D8X
	CRT4 AND CRT4-OS
	C4X, C4X1 and C8X
	CF4X
	HG12/20 and HG12/25
Switchgear & Cowans	A4, UA4, FA4,UAE4, FA50, FA51, FA6, FA71, UA12, UA50, UA51, UA6, UA64, UA71 and UAE64. NOTE:- All other variants shall NOT be refurbished.
	ID
Whipp & Bourne	CV.
Yorkshire Switchgear	YSF6

### **F3 Distribution Pole Mounted Switchgear**

Whipp & Bourne

GVR.