

NUMBERING & NOMENCLATURE OF HV APPARATUS

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PURPOSE AND SCOPE

This procedure describes the allocation of Numbering and Nomenclature to High Voltage Equipment on the National Grid Electricity Transmission (NGET) System.

It implements Grid Code requirement Operating Code (OC) No. 11 "Numbering and Nomenclature of High Voltage Apparatus at Certain Sites." In that:

- NGET HV Equipment on Users' Sites; and
- User HV Equipment on NGET Sites;

shall have numbering and nomenclature in accordance with the system used by NGET.

To ensure, so far as possible, the safe and effective operation of the total Transmission System and to reduce the risk of human error faults by requiring, in certain circumstances, that the numbering and nomenclature of Users' HV Equipment shall be in accordance with the numbering system used by NGET.

PART 1 – PROCEDURAL

1 RESPONSIBILITIES

Market Operation (MO) – Control Support & Review and Asset Management (AM) – Transmission Network Control Centre (TNCC) are responsible for agreeing with other NGET Business Units the application of the principles of this procedure.

The NGET Business Unit that initiates the modification to the NGET HV system, whether the modification is substation or Overhead Line (OHL) related, will be responsible for beginning the process of agreeing the associated numbering and nomenclature. The timing of this process should be in line with the timescales identified within UKBP_TP500 – **Network Development Process**. If the HV system changes are OHL related, the NGET Business Unit will be responsible for approaching TNCC to address the allocation of any required line route codes and Circuit Identification Plates (CIP). This allocation will also be with the agreement of the Area OHL Team Leader.

2 INTRODUCTION

For the purpose of this document, the term Numbering will refer to the number of the equipment e.g. X120.

The term Nomenclature will refer to the equipment identification e.g. 400kV Bus Section 1 Circuit Breaker. The term Nomenclature will also apply to all names associated with Substations, Circuits, and Overhead lines.

The combined numbering and nomenclature would be

400kV Bus Section 1 Circuit Breaker X120.

The terms Disconnecter and Isolator are synonymous. However, for the purpose of this document the preferred term is Disconnecter.

An OHL Route and its towers shall not be numbered or have a CIP such that they could be readily confused with any other geographically close route or tower. The designation letters Q, I, and O are not considered appropriate for use.

3 NGET HV EQUIPMENT ON USERS SITES

When NGET HV Equipment is added at a Users Site, the provisions of Grid Code OC 11.4.2 shall be complied with.

4 USERS HV EQUIPMENT ON NGET SITES

When User HV Equipment is added at an NGET Site, the provisions of Grid Code OC 11.4.3 shall be complied with.

5 CHANGES TO EXISTING NUMBERING AND NOMENCLATURE

Where NGET has a requirement to change the existing numbering or nomenclature of NGET HV Equipment on a User's Site, or there is a requirement for a change to the existing numbering or nomenclature on Users HV Equipment at a NGET Site the provisions of Grid Code OC 11.4.4 shall be complied with.

6 AVAILABILITY OF NGET'S CURRENT NUMBERING AND NOMENCLATURE SYSTEM

Upon request Users will be provided the details of NGET's current numbering and nomenclature system to assist them in planning the numbering and nomenclature for their HV Equipment on NGET Sites.

7 LABELLING

When either NGET or a User installs HV Equipment the respective Party shall be responsible for the provision and erection of clear and unambiguous labelling showing the numbering and nomenclature. Where either Party is required to change the numbering and/or nomenclature of existing HV equipment, they will be responsible for the erection of clear and unambiguous labelling showing the new numbering and nomenclature.

8 CHANGES TO NUMBERING SYSTEM

NGET will not change its standard system of numbering and nomenclature defined within this document. For non-standard designs, reference should be made to section A20.

It is not intended that any of the requirements of this document be applied retrospectively, except where safety implications justify the necessary expenditure.

9 FORMS AND RECORDS

Not applicable.

PART 2 - DEFINITIONS AND DOCUMENT HISTORY

10 DEFINITIONS

10.1 Grid Code Operating Code 11

Applies to both NGET and Users. OC11 defines users as: Generators, Network Operators, Non-Embedded Customers and DC Converter Station owners with a User System directly connected to the NGET System to which Power Stations and/or Customers are connected.

10.2 User

A term utilised in various sections of the Grid Code to refer to the persons using the National Electricity Transmission System, as more particularly identified in each section of the Grid Code concerned. In the Preface and General Conditions the term means any person to whom the Grid Code applies.

10.3 User Site

In England and Wales, a site owned (or occupied pursuant to a lease, licence or other agreement) by a User in which there is a Connection Point. For the avoidance of doubt, a site owned by NGET but occupied by a User as aforesaid, is a User Site.

10.4 NGET Site

A site owned (or occupied pursuant to a lease, licence or other agreement) by NGET in which there is a Connection Point. For the avoidance of doubt, where a Site is owned by a User but occupied by NGET, the site is an NGET Site.

10.5 Offshore Transmission System

A system consisting (wholly or mainly) of high voltage electric lines owned or operated by an Offshore Transmission Licensee and used for the transmission of electricity from one Power Station to a sub-station or to another Power Station or between sub-stations, and includes any Plant and Apparatus and meters owned or operated by any Offshore Transmission Licensee in connection with the transmission of electricity but does not include any Remote Transmission Assets. An Offshore Transmission System extends from the Interface Point, to the Offshore Grid Entry Point(s) and may include Plant and Apparatus located Onshore and Offshore.

11 AMENDMENTS RECORD

Issue	Date	Summary of Changes / Reasons	Author(s)	Approved By (Inc. Job Title)
1	April 1999	New document	Steven Pape	General Manager
2	April 2011	Changes to incorporate the new designs now being developed since the documents last review in 1999. These include • Double busbar substation extensions • Extended mesh corner substations • Transformer circuits banked on LV side • Interconnectors for double busbar to double busbar and double busbar to mesh corner substations • Network Rail connections • Z Substation • Single section substations Process change for the identification of new organisation structure.	Mark Jones – Asset Management Colin Jennings – Network Operations	EEPIG
3	July 2014	• A general update of the document including new business unit names • Z substation reference removed. • New diagrams 15, 17 and 18 added • Reference to Maintenance Isolating Devices and Disconnecting Circuit Breakers added • Interconnectors now named Bus Connectors	Mark Jones – Electricity Transmission Asset Management Colin Jennings – Market Operation	Andy Pearman Electricity Transmission Operations
3A	March 2015	Error corrected on Diagram 18	Mark Jones – Electricity Transmission Asset Management Colin Jennings – Market Operation	-
3B	June 2015	Corrections made on Diagrams 1 to 17	Mark Jones – Electricity Transmission Asset Management Colin Jennings – Market Operation	Zac Richardson Operational Support Manager

12 IMPLEMENTATION

12.1 Audience Awareness

Audience	Purpose Compliance (C) / Awareness (A)	Notification Method Memo / letter / fax / email / team brief / other (specify)
ETAM Operations	Compliance	Slide to be included in Team Brief
ETAM, Capital Delivery, Market Operation, Transmission Network Control Centre, Delivery Vehicles	Compliance	e-mail
Third Parties	Awareness	Via the transmission document control process

12.2 Training Requirements

Training Needs N/A / Informal / Workshop / Formal Course	Training Target Date	Implementation Manager
N/A	N/A	N/A

12.3 Compliance

Compliance will be addressed through design and the investment process Procedure.

12.4 Review Date

3 years from publication date.

PART 3 - GUIDANCE NOTES AND APPENDICES

13 REFERENCES

Grid Code - Operating Code (OC) 11	Numbering and Nomenclature of High Voltage Apparatus at Certain Sites
UKBP/TP119	Transmission Operation Diagrams and Technical Data Schedules
UKBP/TP169	Electricity Transmission Asset Management Asset Data Structure
UKBP/TP500	Network Development Process
STCP 10/1	Asset Nomenclature

APPENDIX A - NUMBERING AND NOMENCLATURE OF HV EQUIPMENT

PHILOSOPHY

To ensure, so far as possible, the safe and effective operation of the total Transmission System and to reduce the risk of human error faults by requiring that the numbering and nomenclature of HV Equipment shall be in accordance with a standard numbering system.

- A1 Naming of Substations**
- A2 Sequence Numbering of Equipment in Substations**
- A3 Identification of Circuits**
- A4 Identification of Busbars**
- A5 Identification of Cables**
- A6 Identification of Transformers**
- A7 Identification of Reactors, Compensators and Quadrature Boosters**
- A8 Identification of Free Standing Voltage and Current Transformers**
- A9 Asset Labelling**
- A10 400kV Switchgear**
- A11 275kV Switchgear**
- A12 132kV Switchgear**
- A13 Switchgear below 132kV (excluding Metal Enclosed type)**
- A14 Metal Enclosed Type switchgear below 132kV**
- A15 HV DC Switchgear**
- A16 Nomenclature for Shorting / Discharge Switches associated with Static Capacitors, Compensators and Filters**
- A17 Earthing Switchgear**
- A18 Neutral Earthing**
- A19 Gas Zone Numbering**
- A20 Non-Standard Designs**
- A21 Abbreviations**

Diagrams 1-18 – Diagrams showing differing circuit configurations and their associated nomenclature

A1 NAMING OF SUBSTATIONS

A1.1 NGET Substations

Substation names shall be nominated by ETAM - Investment Delivery who will agree the proposed names with MO - Control Support & Review and AM - Transmission Network Control Centre in consultation with ETAM – Business Assurance & Systems. For information on substation codes see TP169 – Electricity Transmission Asset Management Asset Data Structure.

No substation shall be given the same name as that of any other NGET substation or User Site on the system unless it is located on the same site as an existing NGET substation or User Site.

No substation shall be given a name that could be readily confused with the name of any other substation or User Site on the system.

Where circumstances dictate that a NGET site needs to assume the name of an existing substation or User site, or a name that could readily be confused with an existing substation or User site, NGET ENI will consult and agree the necessary adjustment of names with the relevant User.

Where two or more substations are located geographically close together they may be named independently or given the same name with equipment numbered such there is no duplication.

A1.2 User Substations

User site names shall be nominated by such User, who will consult on and agree the name to be adopted with NGET.

No User site shall be given the same name, or one that could readily be confused with, that of any other User site or substation on the system unless it is located on the same site footprint as an existing User site.

Where circumstances dictate that a User Site needs to assume the name of an existing substation or User site, or a name that could readily be confused with an existing substation or User site, NGET ENI will consult and agree the necessary adjustment of names with the relevant User.

If a substation of the same voltage is being extended or replaced at the same location, then the new substation will, where practicable, take the same name as the existing one. The duplication of numbering / nomenclature on the equipment shall be avoided and this will be achieved by either;

- sequencing the busbars within the new substation from the existing ones; i.e. MBB3 and MBB4 where MBB1 and MBB2 already exist.
- rename the existing busbars from MBB1 and MBB2 to MBB3 and MBB4 then use MBB1 and MBB2 at the new substation.

The same rationale will apply to Bus Sections, Bus Couplers and Circuit Bays.

A1.3 Traction Supply Points

Traction supply points are sites where National Grid connect to a railway network ATFS (Auxiliary Trackside Feeder Station) via a Feeder circuit.

A2 SEQUENCE NUMBERING OF EQUIPMENT IN SUBSTATIONS

Further to the requirements of Section A6 for all transformers to be uniquely numbered and Section A7 for reactors, compensators and boosters to be uniquely numbered, the following will apply:

- a) Where the above installations are associated with an even numbered busbar section, then an even numbered sequence shall be used. The same principle will be adopted for odd numbered busbars.
- b) Where there is a single busbar section within a substation, this will be numbered Main Busbar 1, Reserve Busbar 1. If the site is designed to be extended from the centre with use of a Bus Section, then one side will adopt odd numbering with the lower number at the centre and even on the other side.
- c) Where the above installation is connected to the system via a static compensator transformer, then the circuit numbering will follow the sequence that is used for other transformer circuits.
- d) Where the next number in sequence could lead to confusion or ambiguity with adjacent equipment, the following number in sequence should be used.

Sequence numbering that could lead to ambiguity at substations of different voltage on the same complex should be avoided. For example, if MSC 1 exists at a 400kV location then it shall not be used at the 132kV location. Instead the MSC will be suffixed with a different number.

When extensions to existing substations are undertaken, the existing number sequencing should be reviewed but only altered where reasonably practicable.

A3 IDENTIFICATION OF CIRCUITS

A3.1 The identification of circuits connecting substations at different named sites shall be as follows:-

A circuit connecting two substations shall be designated by the names of the substations concerned in alphabetical order of sites.

e.g. Kitwell – Ocker Hill

A circuit connecting three substations together in a standard configuration (see Diagram 10 3 ended Circuit) shall be designated by the names of all the substations concerned in alphabetical order of sites.

e.g. Creyke Beck – Keadby – Killingholme

Parallel circuits between the same substations shall be suffixed with a unique sequence number.

e.g. for two ended parallel circuits:

Grendon-Sundon 1
Grendon-Sundon 2

For three ended parallel circuits;

Heysham – Hutton – Penwortham 1
Heysham – Hutton – Penwortham 2

A3.2 A circuit connecting busbars of the same voltage at the same named complex or a circuit connecting busbars of the same voltage at a particular substation shall be designated as follows:

- Nominal voltage (400kV, 275kV, 132kV, etc).
- Bus Connector
- A sequence number

e.g. 400kV Bus Connector 1

The exception to this numbering is when the Bus Connector connects to a Mesh Corner. In this case the suffixed number will be the same as the Mesh Corner number.

A3.3 Numbering and Nomenclature of Overhead Line Routes

OHL circuits can run on one or multiple routes, for example:

- Bushbury – Willenhall circuit runs on the YYD route
- Kirkstall -Elland circuit runs on the YW and VR routes

Route codes shall not include the letters I, O or Q

A3.4 Tower identification

Towers will be identified as follows;

- The Route letters which can be prefixed by a number if required
- A number. This number shall be sequenced so as not to be repeated. In the case of single digit numbers, 1, 2, 3 etc will be used and not 01, 02, 03 etc.

When additional towers are being added to an existing route the following shall apply;

If a temporary tower is being built to facilitate a tower replacement then it will take the same identification as the tower its replacing and be suffixed with the letter T for (Temporary)

If a tower or run of towers is being added to facilitate a small, double circuit diversion then an existing tower number shall be taken and suffixed with sequenced letters. The original tower number taken will also be included in the suffixed letter sequence.

If a tower or run of towers is being added to facilitate a small double circuit diversion that is being split onto two separate single tower spans for the diversion, then an existing tower number shall be taken and suffixed with sequenced letters for one of spans and another tower number shall be taken and suffixed with sequenced numbers for the other span. In both cases the original tower number taken will also be included in the suffixed letter sequence.

For larger circuit diversions consideration will be given to adding a new route code into the circuit and sequencing the towers accordingly.

For major scheme works that require OHL reconfigurations; if the tower numbering is significantly out of sequence then consideration should be given to re-sequencing the towers into a standard format. See Diagram 9

A3.5 Circuit Identification Plates and Flag Brackets

All Towers shall be fitted with a Circuit Identification Plate and Flag Bracket.

Irrespective of whether a circuit connects into a substation or by-passes it, when a circuit passes a Substation, the Circuit Identification Plate (CIP) and Flag Bracket on the Towers should change. This allows three-ended circuits to be split into legs with no potential duplication of CIP or Flag Bracket thus avoiding safety issues. It also allows for future OHL reconfiguration and substation turn-in to take place without bearing the cost and effort of changing the affected CIP and Flag brackets on any affected towers. It is not intended for this to be retrospectively applied.

See Diagram 9

A3.6 Allocation of Circuit Colours and Routes

Circuit Identification colours and route codes are allocated from the TNCC after agreement with Operations - Over Head Lines.

Flag brackets are allocated by Operations - Over Head Lines

A3.7 Circuits to Traction Supply Points

Circuits that connect National Grid to an ATFS will be labelled as follows;

The circuit will be suffixed with the same sequence number of the Supergrid Transformer circuit that it connects to. If the SGT is number 1 then the circuit will carry the suffix 1 through to the ATFS. If the SGT is number 3B then the circuit will carry the suffix 3B through to the ATFS.

The SGT circuit will be labelled SGT (suffixed with the appropriate number) from the busbar disconnectors on the HV side up to and including the SGT LV line disconnector. It will then be labelled a Feeder (suffixed with the appropriate number) from the disconnector to the ATFS. From the ATFS it will be a Feeder circuit (suffixed with the appropriate number) up to the SGT LV line disconnector in the National Grid substation.

The circuit configuration and labelling convention can be seen in Diagram 6

A3.8 Offshore Transmission System Numbering and Nomenclature

The numbering and nomenclature of Offshore Transmission assets, although not specifically covered, will follow the principles defined within this document and tables in accordance with System Operator – Transmission Owner Code STCP 10-1.

Where Offshore Transmission circuits connect into a NGET substation at the busbars, the numbering assigned will be feeder based and the circuit name will be the name of the Offshore Transmission substation.

e.g. the West of Duddon Sands 1 circuit at Heysham would be labelled West of Duddon Sands 1 and carry numbering X*04, X*06, X*05 etc)

A4 IDENTIFICATION OF BUSBARS

The numbering and nomenclature of busbars shall be as follows:-

- Nominal busbar voltage (400kV, 275kV, 132kV, etc).
- Busbar designation (Main Busbar, Reserve Busbar, Mesh Corner, etc).
- Busbar section number (1, 2, 3, etc).

e.g. 275kV Main Busbar 1

The first section of Busbar in a substation will be Busbar 1, the next section will be Busbar 2. Any further Busbar sections added will be sequenced out in following way

Extensions to Busbar section 1 will be come Busbar section 3, Busbar section 5 etc...

Extensions to Busbar section 2 will be come Busbar section 4, Busbar section 6 etc...

See Diagram 2

In the case of substations where a section of one busbar is common to two sections of an associated busbar, the former shall bear the numbers of both corresponding sections of the latter.

e.g. 400kV Main Busbar 1
400kV Main Busbar 2
400kV Reserve Busbar 1 / 2 □ □ □

In the case of a mesh type substation the corners of the mesh should be numbered consecutively in an anti-clockwise direction when viewed from above.

See Diagram 3

A5 IDENTIFICATION OF CABLES

The numbering and nomenclature of cables shall be as follows:-

- The circuit name.
- The nominal cable voltage (400kV, 275kV, 132kV, etc).

e.g. Bustleholm – Nechells 275kV Cable

A5.2 If there is more than one cable of the same voltage within any one circuit, irrespective of whether the cables are in series, parallel or a combination of both, each cable shall be identified uniquely as follows;

- The circuit name.
- The nominal cable voltage (400kV, 275kV, 132kV, etc).
- A suffixed, sequenced letter.

e.g. Bredbury – South Manchester 275kV Cable A
Bredbury – South Manchester 275kV Cable B
Bredbury – South Manchester 275kV Cable C

A6 IDENTIFICATION OF TRANSFORMERS

A6.1 The identification of all transformers (except earthing transformers) shall include a prefix indicating the ratio of the nominal voltages, e.g. 400/132kV.

A6.2 The numbering and nomenclature of transformers connected to the NGET System, other than those directly associated with converting, compensating equipment or generators and their auxiliaries and with due regard to the development of the substation, shall be as follows:-

- A6.2.1** A transformer with a nominal primary voltage of 400kV or 275kV which connects with a lower voltage system, shall be designated a SUPERGRID TRANSFORMER. All such Supergrid Transformers shall be numbered uniquely in relation to each other and to any other transformers, excluding generator transformers, with 400kV or 275kV windings at a particular named site and, where appropriate, the provisions of paragraphs A6.3, A6.4 and A6.5 shall apply.
- A6.2.2** A transformer with a nominal primary voltage of 132kV which connects with a lower voltage system shall be designated a GRID TRANSFORMER. All such transformers shall be numbered uniquely in relation to each other and to any other transformers, excluding generator transformers, with 132kV high voltage windings at a particular named site and, where appropriate, the provisions of paragraphs A6.3, A6.4 and A6.5 shall apply. This nomenclature shall apply at named sites where 66kV is the primary voltage and there is no transformation from 132kV.
- A6.2.3** A transformer with the next highest primary voltage below that of a Grid Transformer shall be designated an INTERBUS TRANSFORMER and all such transformers at a particular named site shall be numbered uniquely.
- A6.2.4** Other transformers at a particular named site shall be designated by reference to the ratio of the nominal voltages and shall be numbered uniquely.
- e.g. 11/6.6kV Transformer 1
- A6.3** A transformer connected to AC/DC converting equipment and provided for the transmission of power shall be designated CONVERTER TRANSFORMER. All such transformers shall be numbered uniquely at a particular named site and, where appropriate, the provisions of paragraphs A6.2.1 or A6.2.2 shall apply.
- A6.4** A transformer provided at a user site to supply the station board and having a nominal high voltage of 400kV, 275kV or 132kV shall be designated STATION TRANSFORMER. All such transformers shall be numbered uniquely at a particular named site and, where appropriate, the provisions of paragraphs A6.2.1 or A6.2.2 shall apply.
- A6.5** A transformer provided solely for the purpose of connecting an item of compensating equipment, and not for the transmission of power, shall be designated COMPENSATOR TRANSFORMER. All such transformers shall be numbered uniquely at a particular named site and, where appropriate, the provisions of paragraphs A6.2.1 or A6.2.2 shall apply.
- A6.6** All transformers covered by the provisions of paragraphs A6.2, A6.3, A6.4 and A6.5 and being of the same nominal high voltage shall be numbered uniquely at a particular named site.
- e.g. at a 400kV site:-
400/275kV Supergrid Transformer 1
400/11kV Station Transformer 2
400/275kV Supergrid Transformer 3
400/132kV Converter Transformer 4
400/132kV Supergrid Transformer 5
400/11kV Station Transformer 6
400/132kV Supergrid Transformer 7
- A6.7** The numbering and nomenclature of transformers directly associated with users equipment shall be as follows:-
- A6.7.1** A transformer connected to a generator and provided for the transmission of the generator output to the main system shall be designated GENERATOR TRANSFORMER and shall be numbered the same as the associated generator.

A6.8 A transformer provided to supply a power station unit board and connected to a generator shall be designated UNIT TRANSFORMER and shall be numbered the same as the associated generator. Where more than one UNIT TRANSFORMER is provided the individual transformers shall be numbered as the associated generator and be identified by the addition of a consecutive letter as a suffix.

A6.9 Where two or more transformers in a substation or power station are banked on to a circuit breaker on either the high voltage or the low voltage side the individual transformers shall have the same number and be identified by the addition of a consecutive letter as a suffix.

e.g. 275/132kV Supergrid Transformer 1A

275/132kV Supergrid Transformer 1B

A6.10 The numbering and nomenclature of a transformer directly connected to another transformer shall be as follows:-

A6.10.1 A transformer providing a system neutral connection and not supplying auxiliaries shall bear the designation and number of the transformer to which it is connected followed by the voltage of the winding to which the transformer is connected and the words EARTHING TRANSFORMER.

e.g. Supergrid Transformer 3 13kV Earthing Transformer.

A6.10.2 A transformer supplying local auxiliaries and not providing a system neutral connection shall bear the designation and number of the transformer to which it is connected, and the voltage ratio of the auxiliary transformer, followed by the words AUXILIARY TRANSFORMER.

e.g. Supergrid Transformer 4 13kV/415V Auxiliary Transformer.

A6.10.3 A transformer providing a system neutral connection and supplying auxiliaries shall bear the designation and number of the transformer to which it is connected, followed by the voltage of the winding to which the transformer is connected and the words EARTHING AND AUXILIARY TRANSFORMER, with the voltage of the equipment supplied preceding the word AUXILIARY.

e.g. Supergrid Transformer 1 13kV Earthing and 415V Auxiliary transformer.

A7 IDENTIFICATION OF REACTORS, COMPENSATORS AND BOOSTERS

The preferred name for capacitive Compensation Circuits will be Mechanically Switched Capacitors (MSC). These may be made up of one or more individually switched static capacitors.

The numbering and nomenclature of reactors/inductors, capacitors, compensators and boosters shall be as follows:-

a) Nominal Voltage e.g. 400 kV, 66 kV

b) Description e.g. series reactor, mechanically switched capacitor. In all cases the word reactor, capacitor or booster shall be qualified by an appropriate adjective.

c) Number

(i) In the case of equipment connected to a mesh type substation this number shall be the number of the associated mesh corner.

(ii) In the case of equipment connected to a transformer tertiary winding or the LV connections, this number shall be the number of the associated transformer. If

the associated transformer is a banked transformer the appropriate letter shall also be included.

- (iii) In other cases this number shall be a unique sequence number, e.g. 400kV Series Reactor 1, 400kV Mechanically Switched Capacitor 2, 400kV Shunt Reactor 3

- d) Where two items qualify for the same number and nomenclature, the word WINDING shall be added to reactor nomenclature followed by an identification letter. Similarly the word BANK shall be added to capacitor nomenclature followed by an identification letter.

e.g. 13 kV Shunt Reactor 4B Winding A
13 kV Static Capacitor 1 Bank A

A8 IDENTIFICATION OF FREE STANDING VOLTAGE AND CURRENT TRANSFORMERS

The numbering / nomenclature of free standing voltage and current transformers shall be as follows.

The designation and number of the associated equipment or circuit to which the voltage or current transformer is directly connected.

The nominal voltage of the Voltage or Current Transformer.

The words VOLTAGE TRANSFORMER or CURRENT TRANSFORMER as appropriate.

Where two items qualify for the same nomenclature, reference to adjacent plant/equipment may be used. Alternatively the two items can be suffixed with sequenced numbers.

e.g. Supergrid Transformer 2 400 kV Voltage Transformer.
X120 400 kV Current Transformer (X124 side).

Or Supergrid Transformer 2 400 kV Voltage Transformer 1
Supergrid Transformer 2 400 kV Voltage Transformer 2
X120 400 kV Current Transformer 1
X120 400 kV Current Transformer 2

The preference is to suffix the equipment with sequenced numbers. This labelling can then be shown on the appropriate Operation diagrams.

A9 ASSET LABELLING

A9.1 Switchgear Labelling

All switchgear shall carry labelling that is clear and unambiguous and of a type identified in this procedure in addition to its circuit designation

e.g. for 400/132 kV SGT3 HV circuit breaker the label would read SGT3 X310

Where the operation of equipment requires action at phase level, each phase shall be clearly identified.

A9.2 Panel Labelling

The labelling associated with HV and LV assets should, where reasonably practicable, align. Due to the complexity of the protection arrangements, or the non-standard circuit configuration, this may not always be possible.

A9.2.1 Line Circuits

- a) Switchgear control, protection equipment and metering panels associated with a circuit shall be labelled in accordance with Section 3, except that the name of the substation at which the panel is located shall be omitted. For multi-ended circuits the order of naming shall be alphabetically.

e.g. On the Norwich - Walpole 1 and 2 circuits
At Walpole the panel labels would read:
Norwich 1,
Norwich 2.

On the Brinsworth – Drax - Keadby circuit
At Brinsworth the labels would read:
Drax - Keadby
- b) Each control handle or other control facility shall have a label adjacent to it designating the equipment controlled.
- c) Where a circuit is terminated with a transformer circuit breaker, labelling shall be in accordance with the provisions of paragraph 9.2.2 d)

A9.2.2 Transformer Circuits

- a) Switchgear control, protection equipment and metering panels associated with a transformer circuit shall be labelled in accordance with Section 6. Where the use of the full identification is impractical the voltage ratio prefix may be omitted.

e.g. Supergrid Transformer 6.
- b) Each control handle or other control facility shall have a label adjacent to it designating the equipment controlled.
- c) HV and LV relay panel labelling for a typical 400/132 kV Supergrid Transformer shall be:-

Supergrid Transformer 1 400 kV Relay Panel
Supergrid Transformer 1 132 kV Relay Panel
- d) At substations where a transformer circuit breaker acts as the termination of a line circuit the HV and LV relay panels shall be

e.g. On the Alverdiscott - Indian Queens -Taunton 1 circuit

At Alverdiscott, labels would read:
Supergrid Transformer 1 (Indian Queens - Taunton 1) 132 kV relay panel

A9.2.3 Other Equipment

- a) Switchgear control, protection equipment and metering panels associated with other equipment shall be labelled in accordance with the nomenclature of the equipment.

e.g. 13kV Shunt Reactor 4A