1. SCOPE

This document details the procedures for Meter Operators working on metering equipment connected to the ScottishPower Distribution Systems. Unless otherwise stated the term Distribution Business means both Distribution Businesses in the ScottishPower Group i.e. Scotland (SPD) and Manweb (SPM) areas.

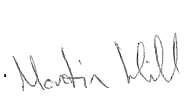
2. ISSUE RECORD

This is a Reference document. The current version is held on the EN Document Library.

It is your responsibility to ensure you work to the current version.

Issue Date	Issue No.	Author	Amendment Details
October 2000	1	Alastair Graham	This document in conjunction with EPS-01-003 and EPS-05-001 supersedes DOM 1.1.10
January 2004	2	Dougie Fitzsimmons	Section 9 Appendices, Appendix 1 Contact Numbers and Addresses
June 2011	3	Gordon MacKenzie	Contact number changes and minor detail updates
August 2016	4	Gordon MacKenzie	Contact number changes, and changes to authorisation requirements. Addition of new CT Metering schematic drawings.

3. ISSUE AUTHORITY

Author	Owner	Issue Authority
Name: Gordon MacKenzie Title: Senior Engineer Engineering Design & Standards	Name: Frank Berry Title: Circuits Manager Engineering Design and Standards	Name: Martin Hill Title: Head of Engineering Design and Standards  Digitally signed by Martin Hill Date: 2016.08.05 09:44:38 +01'00' Date: ……

4. REVIEW

This is a Reference document which has a five year retention period after which a reminder will be issued to review and extend retention or archive.

5. DISTRIBUTION

This document is not part of a Manual maintained by Document Control and does not have a maintained distribution list, but is published to the Energy Networks website.

© SP Power Systems Limited

6. CONTENTS

1. SCOPE **1**
2. ISSUE RECORD **1**
3. ISSUE AUTHORITY **1**
4. REVIEW **1**
5. DISTRIBUTION **1**
6. CONTENTS **2**
7. RELATED DOCUMENTS **3**
8. INTRODUCTION **3**
8.1 CONTACTS 3
8.2 OPERATIONAL SAFETY POLICY AND PRACTICES 3
8.3 REPORTING OF INCIDENTS, ACCIDENTS AND DANGEROUS OCCURRENCES OR DEFECTS, EVIDENCE OF TAMPERING 4
8.4 INSERTION AND REMOVAL OF CUT-OUT FUSES 4
8.5 ACCESS TO SUBSTATIONS 4
8.6 ACCESS TO METERING PANELS AND CUBICLES 4
9. TECHNICAL **4**
9.1 CONNECTION OF METERING 4
9.2 CT/VT CONNECTIONS 4
9.3 SECURITY PRACTICES 4
9.4 IMPULSES 5
9.5 COMMUNICATIONS LINK 5
9.6 AUDITING OF INSTALLATIONS 5
10. COMMERCIAL **5**
10.1 USE OF EXISTING PANELS OR CUBICLES 5
10.2 REMOVED METERS 6
10.3 CHARGES 6
10.4 SITE SPECIFIC INFORMATION 6
11. APPENDICES **7**
11.1 APPENDIX 1 – CONTACT NUMBERS AND ADDRESSES 7
11.2 APPENDIX 2 – PROCEDURE FOR AUTHORISATION (WHERE REQUIRED, AND WHERE UNABLE TO COMPLY WITH THE REQUIREMENTS LISTED IN SECTION 8.2 OF THIS DOCUMENT) – SUMMARY 8
11.3 APPENDIX 3 – TYPICAL LV INSTALLATION WIRING DIAGRAMS – SCOTTISHPOWER 9

7. RELATED DOCUMENTS

EPS-01-003 Policy on Third Party Meter Operators
OPSAF-13-001 Authorisation Procedures (Management Safety Procedure 5.1)
Meter Operator Code of Practice Agreement (MOCOPA)
ScottishPower Safety Rules (Electrical and Mechanical) 4th Edition
(EASL) Electricity Association Services Ltd. Code of Practice for Meter Operatives
(P & SA) Pool and Settlement Agreement of England and Wales
(SAS) Settlement Arrangements for Scotland

8. INTRODUCTION

This document provides information for Meter Operators working within the Public Electricity Supply licensed areas of ScottishPower and Manweb. It should be used in conjunction with the Meter Operator Code of Practice Agreement (MOCOPA).

It is the responsibility of Meter Operators to comply with the Meter Operators Code of Practice Agreement and to ensure that their Operatives are aware of the requirements of relevant legislation. Operatives shall act in such a way as to secure the safety of themselves and others.

8.1 Contacts

A list of contact addresses and phone numbers are listed in Appendix 1.

8.2 Operational Safety Policy and Practices

ScottishPower has revised its policy on authorising meter operators to remove and replace cut-out fuses on single and three phase cable-heads.

As a result of the review ScottishPower has rescinded the current process for this level of authorisation on the 1st April 2015 and accept that meter operators that meet the following criteria are competent to install Smart Electrical meters in our Distribution Licensed areas.

Meter Operating companies must:

- Be members of the Association of Meter Operators
- Be signatories to the Meter Operators Code of Practise Agreement

Meter Installers:

- Be trained and competent and be able to demonstrate compliance with the Smart Metering Installation Code of Practise.
- Be registered to install Smart Meters (Electricity) with Energy & Utilities Skills.

For Meter Operators who cannot meet the above criteria then the following authorisation process must be complied with.

It is ScottishPower policy that all work on or adjacent to the ScottishPower System be carried out in accordance with the ScottishPower Safety Rules (Electrical and Mechanical) 4th Edition and all persons involved in such work be authorised where required in accordance with Management Safety Procedure 5.1 ‘Authorisation Procedures’ (OPSAF-13-001).

Following assessment by an Examining Person to verify adequacy of training, experience and technical knowledge meter operatives may be authorised to remove and replace cut-out fuses and work on isolated metering equipment. Meter operatives shall not be authorised to carry out live meter changes.

The procedure for authorisation is outlined in Appendix 2.

© SP Power Systems Limited

8.3 Reporting of Incidents, Accidents and Dangerous Occurrences or Defects, Evidence of Tampering

A list of points of contact is given in Appendix 1.

8.4 Insertion and Removal of Cut-out Fuses

Removal of cut-out fuses prior to work or insertion after work shall only be carried out by persons specifically authorised for these activities in accordance with ScottishPower Safety Rules and Procedures, or as detailed in Section 8.2 of this document. This authorisation will normally include permission to short circuit CT's via a test block and remove/replace voltage (potential) metering panel fuses.

Note: SMICOP authorisation to remove cut-out (service) fuses does not include permission to short circuit CT's via a test block and remove/replace voltage (potential) metering panel fuses.

8.5 Access to Substations

Where access to substations jointly under the control of the distribution business and a customer is required, arrangements shall be made via the customer.

On the infrequent occasions when access is required to a ScottishPower distribution business substation a request for accompaniment shall be made.

8.6 Access to Metering Panels and Cubicles

Access to distribution business metering panels and cubicles shall be restricted to those meter operatives who have been specifically authorised for this purpose and issued with the appropriate keys. If on opening a panel door exposed conductors are encountered which cannot be proved not Live and, taking account of the work to be carried out, are so near that danger may arise, advice shall be sought from the appropriate distribution business numbers (see Appendix 1) before work proceeds.

9. TECHNICAL

9.1 Connection of Metering

Typical meter connection arrangements for both LV & HV CT Operated Meters are shown in Appendix 3.

9.2 CT/VT Connections

Before work commences the Meter Operator shall ensure all relevant CT's are shorted and voltage transformer supplies are isolated.

For details of CT and VT limits of error to be applied the appropriate distribution business numbers shown in Appendix 1 should be contacted.

9.3 Security Practices

Seals may be removed from network equipment to allow the metering equipment to be changed. The following sealing points may be encountered on site:

(a) Meter case
(b) Meter terminal cover
(c) Panel to wall
(d) Test terminal block
(e) Fuse carriers and links
(f) Data collection outstations

© SP Power Systems Limited

(g) Meter cubicles
(h) Multicore termination boxes
(i) Load control boxes
(j) Voltage transformer distribution points
(k) Cut-out
(l) Reset devices
(m) Spreader boxes (two feeder sites)
(n) Security covers
(o) Section Boards
(p) Timeswitches / Teleswitches
(q) Isolator switches/RCDs

Any seals removed during installation of metering equipment shall be replaced by the Meter Operator. All broken or damaged seals shall be removed from site and the site left in a tidy manner.

If the distribution business metering equipment shows signs of interference then the Meter Operator shall report the details immediately to the Revenue Protection Unit (see Appendix 1).

9.4 Impulses

If a customer who has been receiving impulses from ScottishPower appoints a Meter Operator it shall be assumed the customer has made alternative arrangements to receive these impulses.

Any work carried out on metering equipment connected to the ScottishPower distribution system shall be in accordance with standards set out in P & SA Code of Practice 4 and SAS Code of Practice S4.

9.5 Communications Link

Antennae and Communication Equipment installed by Meter Operators within or on ScottishPower Substations shall not impair the building structure or integrity, nor shall it impair the normal operation of ScottishPower equipment or in any way compromise safety.

9.6 Auditing of Installations

ScottishPower shall undertake appropriate audits of metering installations and when a Meter Operator's installation is considered to be unsafe and requires immediate action, the cost shall be re-charged to the Meter Operator. Defects not requiring immediate action shall in the first instance be reported to the Meter Operator.

10. COMMERCIAL

10.1 Use of Existing Panels or Cubicles

Meter Operators may mount their meters on the doors of distribution business owned metering panels or cubicles provided:

(a) Access to distribution business equipment is not infringed

(b) Any holes left by the removal of metering equipment are blanked off

(c) Removed metering equipment belonging to the distribution business is returned in accordance with Section 10.2

(d) On completion of work the panels or cubicles are left in a safe and secure condition.

All appropriate sections of MOCOPA Code of Practice, and the relevant ScottishPower Safety Rules and Smart Meter Installation Code of Practise shall be followed for all sites.

© SP Power Systems Limited

10.2 Removed Meters

Removed metering equipment belonging to the distribution business shall be returned within 5 working days of removal or by prior arrangement with the Metering Business. Contact numbers and addresses for return are listed in Appendix 1. Equipment shall be protected from damage at all times and must be returned in the same condition as found on site. Equipment shall be labelled with the name, address and MPAN of the site from which it was removed.

10.3 Charges

Where the Meter Operator requires a member of ScottishPower staff to attend site a charge may be levied. A minimum charge shall be made for all site visits.

10.4 Site Specific Information

Reporting of technical or condition issues associated with Distribution Network Operators equipment shall follow the information provided within the current edition of the MOCOPA Guidance for Service Termination Issue Reporting. This Guide is intended to support meter operatives in making a correct diagnosis, give direction on the actions meter operatives should take, and help meter operatives to determine the most appropriate asset condition code for reporting purposes.

If you come across a dangerous situation involving DB equipment that is not covered here, telephone the relevant DB immediately.

The reporting codes are categorised as follows:

A. **Emergency Codes** – a situation in which the DB equipment does (or is likely to) pose a danger, including danger of death of or injury to persons and/or danger of damage to or destruction of property. You must report these issues immediately to the DB by telephone, whilst you are on Site. Refer to “Identifying the Distribution Business” in Section 2 for further details.

B. **Remedial Work Codes** – a situation in which the condition of the DB equipment generally prevents metering work from being carried out or prevents a meter from being exchanged but where the situation is not a Category A issue. You must stop work, make the Site safe, and report these issues to the DB using the data flow process.

C. **Asset Condition Codes** – a characteristic of the DB equipment that is neither a Category A issue nor a Category B issue. Report these characteristics to the DB using the data flow process. It is not generally necessary to inform the customer of an Asset Condition Code reported as this may create an unreasonable expectation of DB intervention.

The Data Transfer Catalogue contains the definitive list of codes. Changes to codes and their descriptions can only occur through the Data Transfer Catalogue (DTC) change proposal governance. The data flows and business processes relating to the codes in this Guide are D0126 and D0135, which are explained in the MOCOPA document ‘*Guideline for Service Termination Asset Reporting - by telephone and the use of D0126 & D0135*’.

The Meter Operator shall provide essential commissioning information to meet the requirements of COP4 to the distribution business and supplier within 5 working days of the meter being installed. Contact numbers and addresses are listed in Appendix 1.

© SP Power Systems Limited

11. APPENDICES

11.1 Appendix 1 – Contact Numbers and Addresses

Emergency Contacts:

To Report Incidents and Dangerous Occurrences or Distribution Apparatus in a Distressed or Damaged State:

Central & Southern Scotland: Telephone: 0800 092 9290
Cheshire, Merseyside, North Wales & North Shropshire: Telephone: 0800 001 5400

Authorisation of Meter Operatives:

ScottishPower
SP Energy Networks
Dealain House
Napier Rd, Wardpark
Cumbernauld
G68 0DF

Jack Neilson, Authorisation Compliance Manager: Telephone: 0141 614 2162
Email: jack.neilson@scottishpower.com

Queries Regarding Existing Metering Equipment, Site Specific Information

Metering Services: Telephone: 0141 565 3000 (North)
Telephone: 01925 422063 (South)

CT/VT Ratio queries: P283Metercommissioning@scottishpower.com (North)
SPMP283@spenergynetworks.co.uk (South)

All other Enquiries and General Safety Information:

Central & Southern Scotland: Telephone: 0330 1010 444
Cheshire, Merseyside, North Wales & North Shropshire: Telephone: 0330 1010 444

By use of the appropriate Data Transfer Network flow.

Training and Assessment of Meter Operatives:

Telephone: 0141 614 9980 Option 4 Commercial Training – Gulnar Mushtaq, Dealain House (Dealain & Hoylake training centres)

Reports of Security Seals Missing or Tampering with ScottishPower Equipment on Customers Premises:

Revenue Protection: Telephone: 0800 074 1976
Email: revenue.protection@scottishpower.com

Returned Metering Equipment: Telephone: 0141 614 7391

© SP Power Systems Limited

11.2 Appendix 2 – Procedure for Authorisation (where required, and where unable to comply with the requirements listed in Section 8.2 of this document) – Summary

The general procedure for authorisation consists of a request for authorisation/training, examination and approval of authorisation.

Contractor's staff, Customers' staff and third parties shall be nominated by their employer based on sample form contained in OPSAF-13-001 (MSP 5.1). Recommendation shall then be made by the Company Manager or nominee as appropriate.

Contractors' staff, Customers' staff and third parties may be trained by their employer. Training shall be carried out in line with the requirements set out in the ScottishPower "Route to Authorisation Manual". However prior to being recommended for examination the candidate shall undergo assessment and, where appropriate, top-up training at a ScottishPower Training Centre.

SP ENERGY NETWORKS

APPENDIX 9

REQUEST FOR AUTHORISATION

Part 1 **Statement by Employer or Manager :**

Full Name of Nominee : ..... Pers / SP Ref No. [ ]

Designation : ..... N.I. No [ ][ ][ ][ ][ ][ ][ ][ ][ ]

Employer / Business Unit : ..... Contractor Safety Passport No. [ ]

I confirm that in my opinion the above named **Person** is Competent to carry out the following work :-

Specific Contract / Site : .....

Description of Work to be Carried Out :

I confirm that the candidate: has sufficient technical knowledge and/or experience to avoid danger; is conversant with Section 7 of the Health and Safety at Work etc. Act 1974, and the requirements of the Electricity at Work Regulations, 1989; is over 18 years of age. (If not yet 18 years, please give date of birth -)

Please find herewith the following documentation in support of this application : *(Please tick as appropriate)*

CV detailing experience [ ] *(Minimum requirement)*

Training Records / Certificates [ ] *(Linesmen – proof of Pole / Tower Top Rescue & Permanent Attachment req'd)*

Copy Previous Auth Cert(s) and/or Certificates from other RECs [ ]

First Aid Certificate [ ] *(Pre-requisite for Live Work)* Expiry Date : ..... *copy of valid First Aid Cert must be submitted when applying for WL-1 or WL-2.)*

Copy NPTC Cert. [ ] *(Tree Contractors Only)*

Voltage	*Authorisations Required (including Limitations / Exclusions / Live Work Procedures)*
LV	
11kV	
33kV	
132kV	
275/400kV	

Signed : ..... Date : .....

Designation : .....

For (Company / Employer) : .....

Business Address : .....

.....

Post Code: ..... Tel. No. : .....

Contact Name : ..... Fax No. : .....

e-mail Address : ..... Mobile No. : .....

Contractor – please indicate your intended method of payment for training .....

For Energy Networks Personnel Only Keys Required : .....

Part 2 **Statement by ScottishPower Project Manager / Line Manager :**

I confirm that the authorisations as requested above are required by the candidate to carry out the work detailed above on the Energy Networks **System**. I further confirm that I have examined and approved the attached supporting documentation as valid proof of the candidate's Competency to carry out this work.

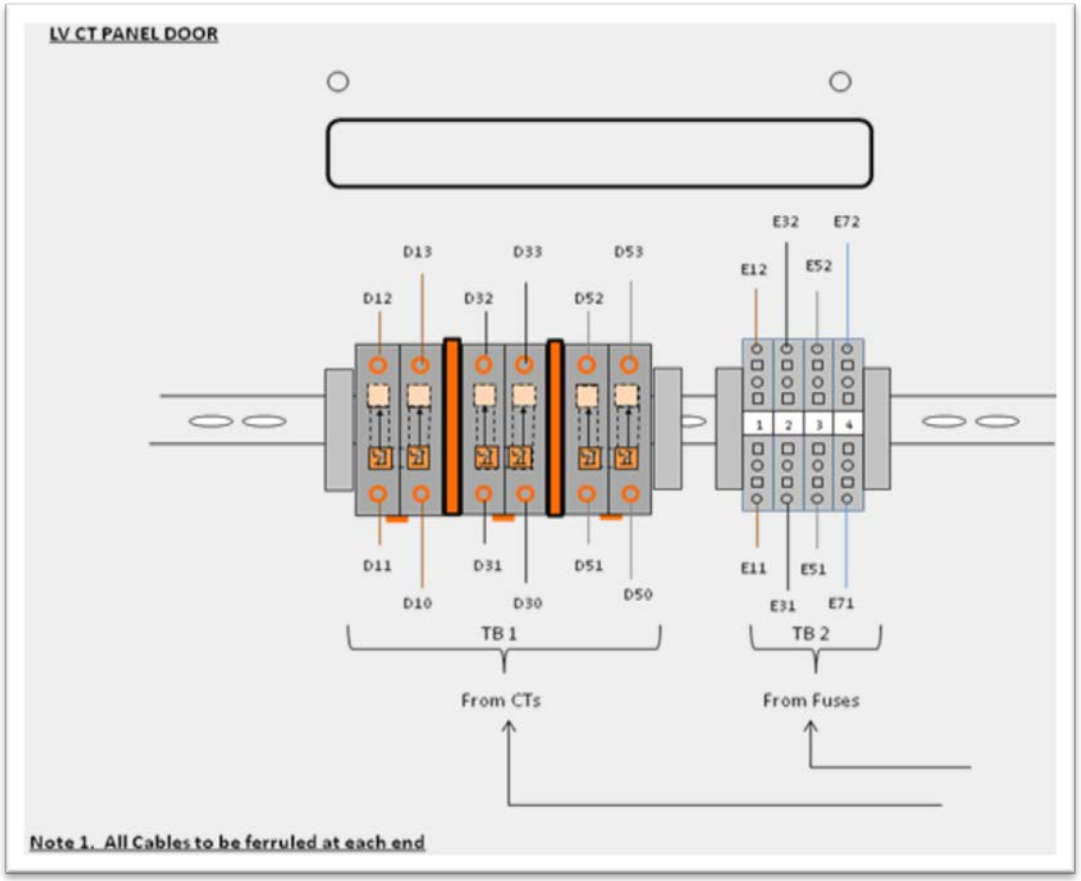
I request that arrangements be made for training / assessment and interview for authorisation for the above nominee.

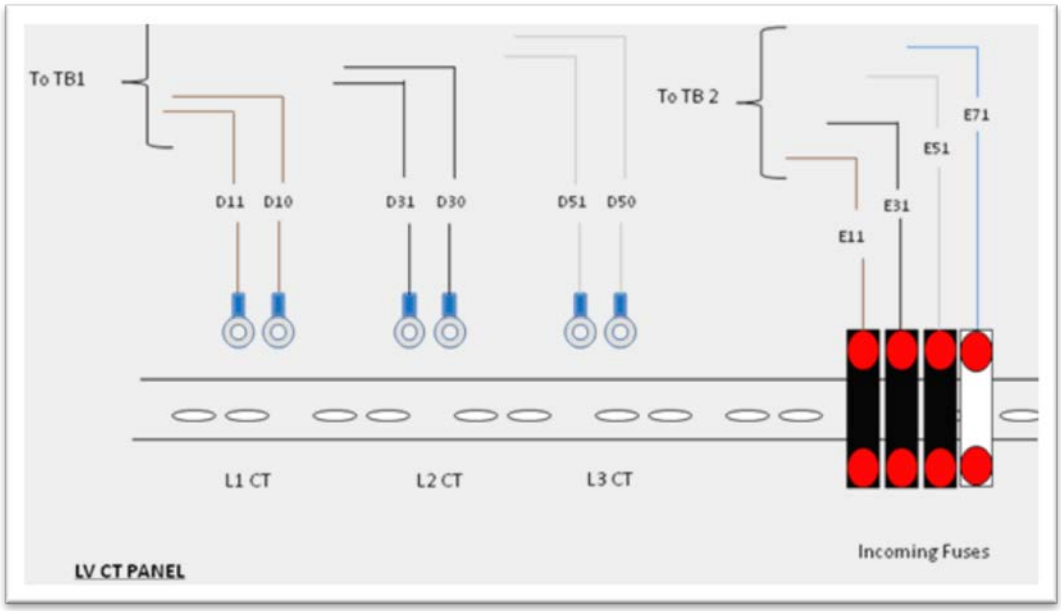
Please allocate training costs to ScottishPower Project No : (if applic) .....

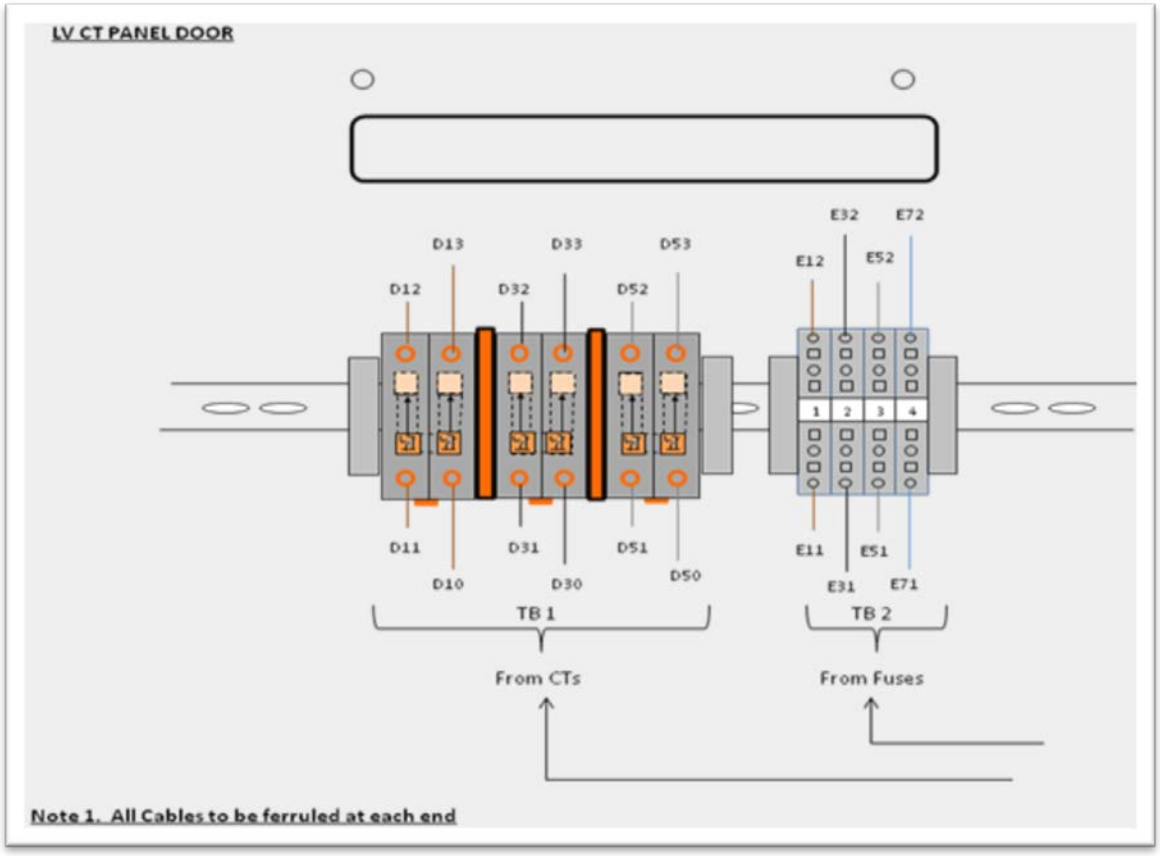
Signed : ..... Pers No : ..... Date : .....

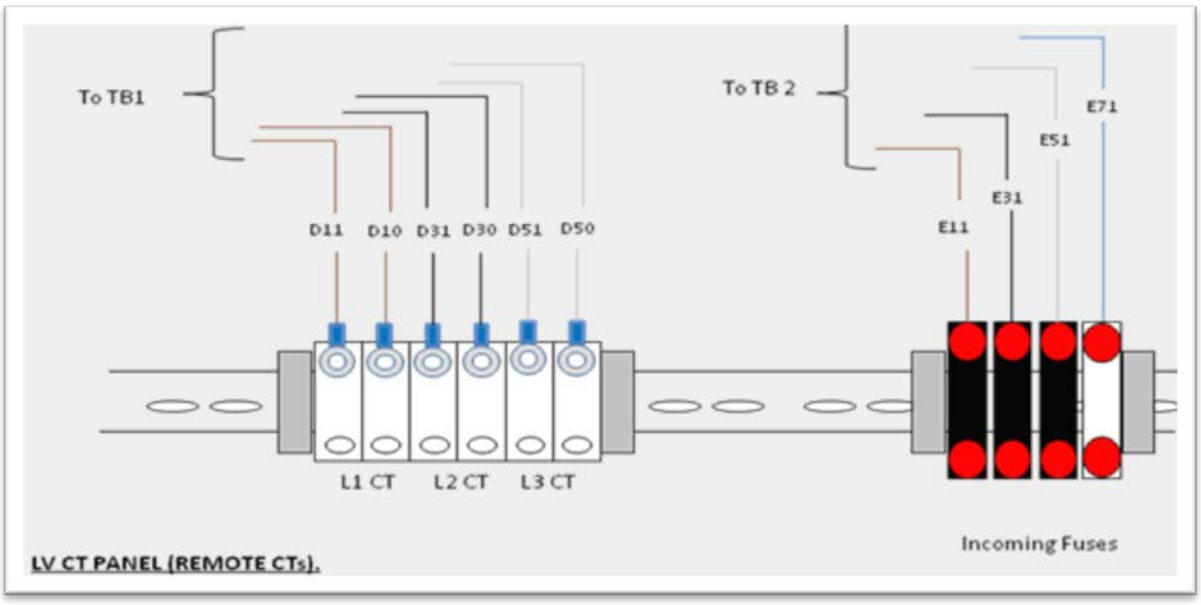
Business / Location : ..... Tel No : ..... Fax No: .....

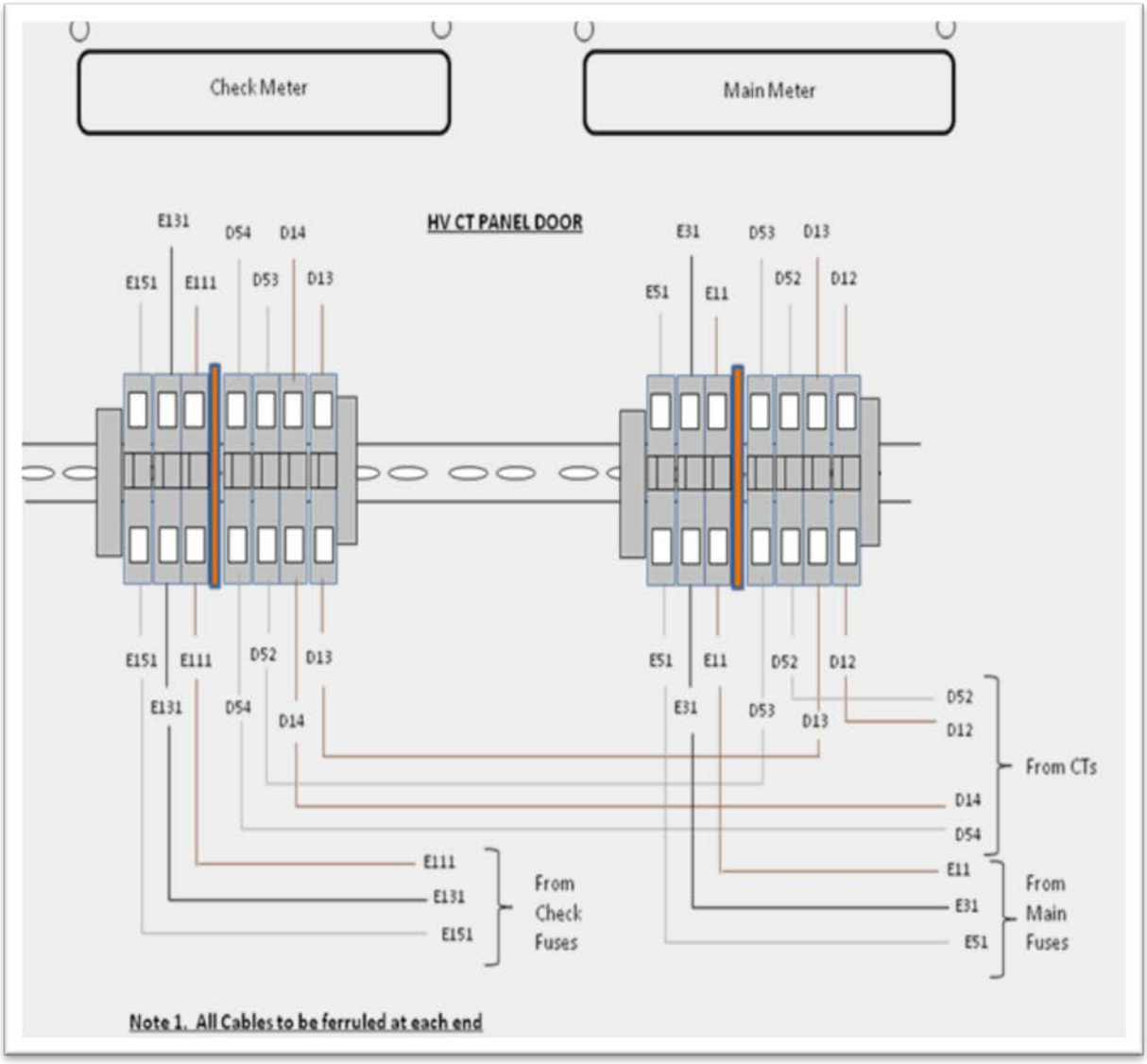
11.3 Appendix 3 – Typical LV Installation Wiring Diagrams – ScottishPower

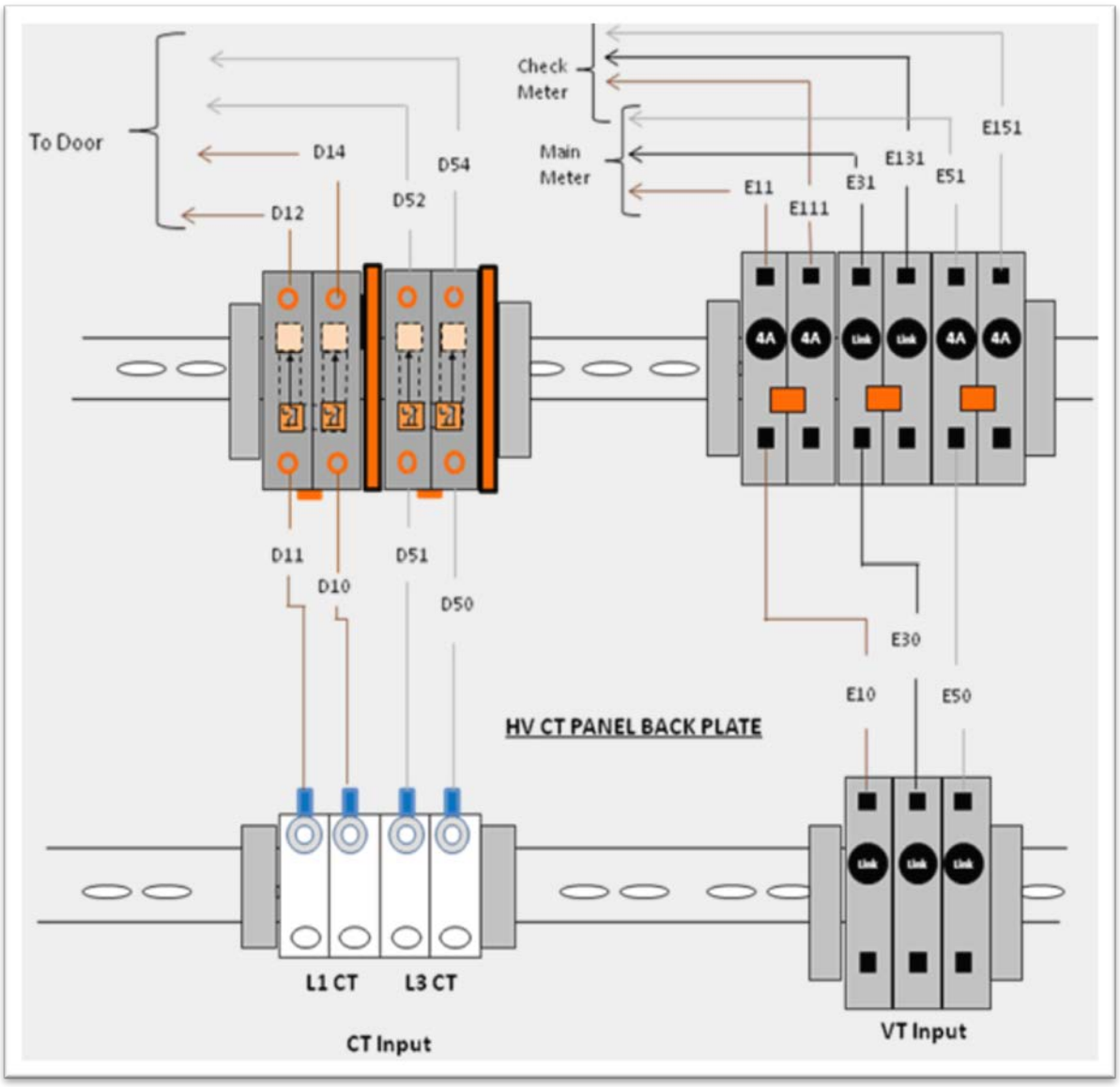


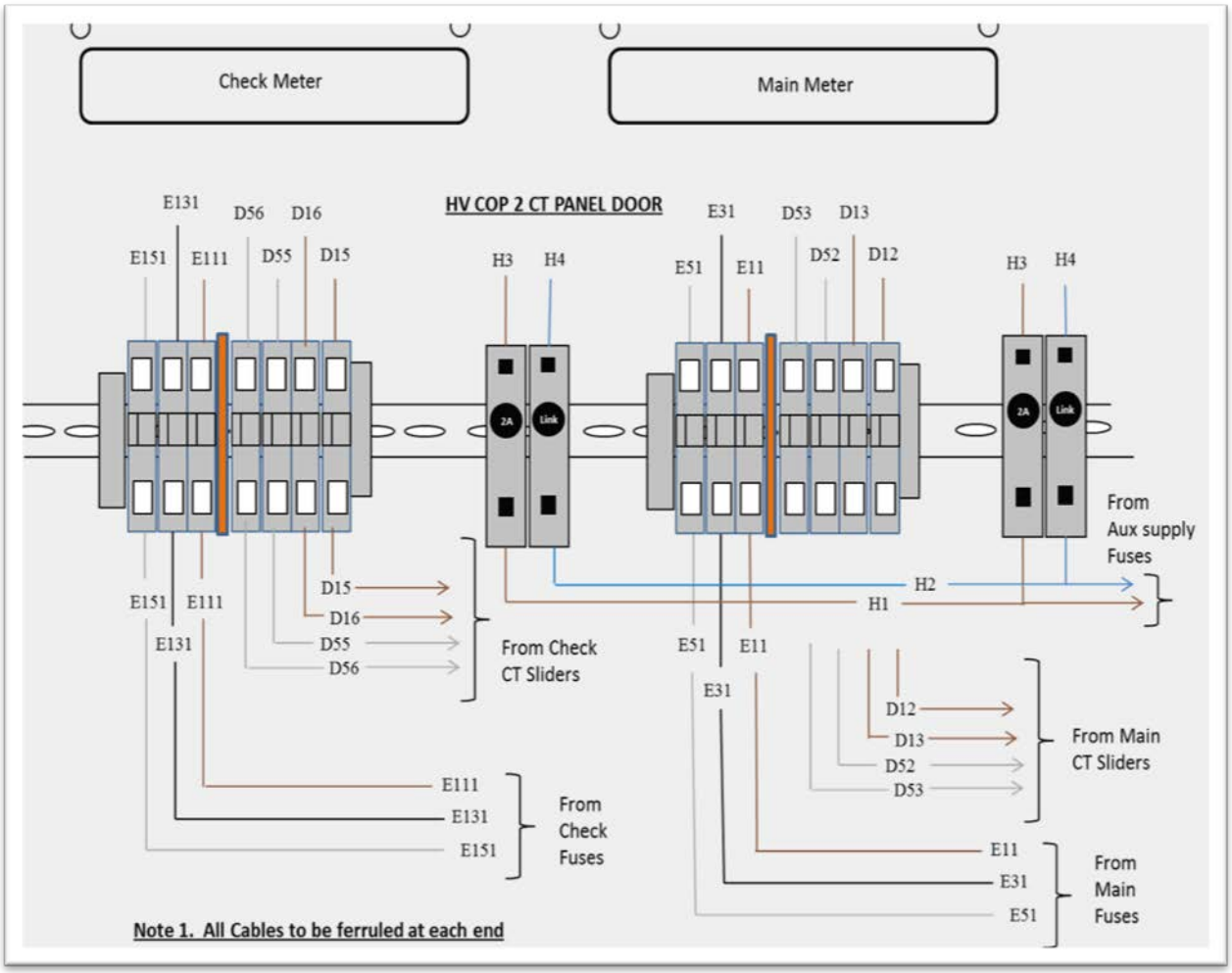


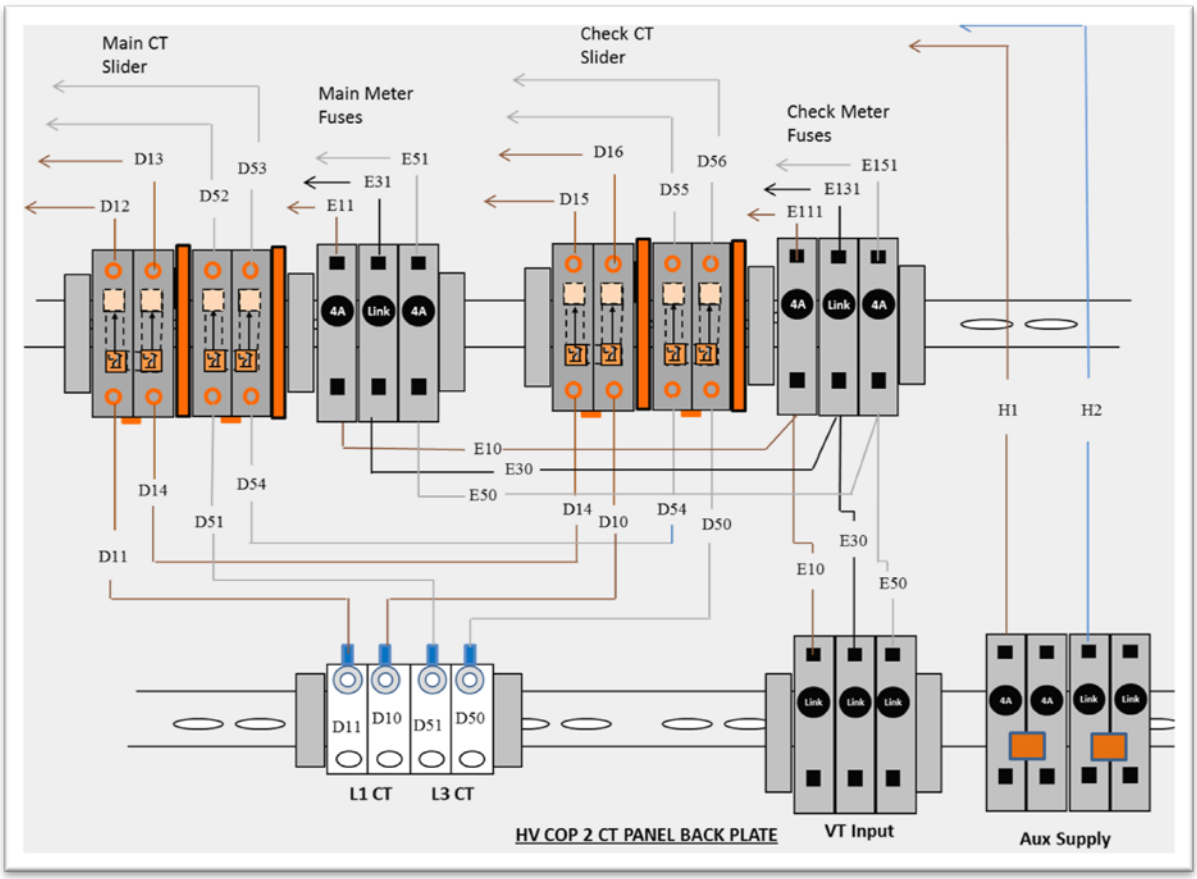

LV CT PANEL DOOR
D13
D33
D53
D12
D32
D52
E32
E72
E12
E52
1
2
3
4
D11
D31
D51
D10
D30
D50
E11
E51
E31
E71
TB 1
TB 2
From CTs
From Fuses
Note 1. All Cables to be ferruled at each end


To TB1
To TB 2
E71
E51
E31
E11
D11
D10
D31
D30
D51
D50
L1 CT
L2 CT
L3 CT
Incoming Fuses
LV CT PANEL (REMOTE CTs).


Check Meter
Main Meter
HV CT PANEL DOOR
E131
D54
D14
E151
E111
D53
D13
E31
D53
D13
E51
E11
D52
D12
E151
E111
D52
D13
E51
E11
D52
D12
E131
D54
D14
E31
D53
D13
D52
D12
From CTs
D14
D54
E111
E131
E151
From Check Fuses
E11
E31
E51
From Main Fuses
Note 1. All Cables to be ferruled at each end


To Door
D14
D12
D54
D52
Check Meter
Main Meter
E151
E131
E51
E11
E31
E111
4A
4A
Link
Link
4A
4A
D11
D10
D51
D50
E30
E10
E50
HV CT PANEL BACK PLATE
L1 CT
L3 CT
CT Input
VT Input


Check Meter
Main Meter
HV COP 2 CT PANEL DOOR
E131
D56
D16
E151
E111
D55
D15
H3
H4
E31
D53
D13
E51
E11
D52
D12
H3
H4
2A
Link
2A
Link
From
Aux supply
Fuses
H2
H1
D15
D16
D55
D56
From Check
CT Sliders
E151
E111
E131
E111
E131
E151
From
Check
Fuses
E51
E11
E31
D12
D13
D52
D53
From Main
CT Sliders
E11
E31
E51
From
Main
Fuses
Note 1. All Cables to be ferruled at each end


Main CT Slider
Main Meter Fuses
Check CT Slider
Check Meter Fuses
D13
D12
D53
D52
E51
E31
E11
D16
D15
D56
D55
E151
E131
E111
4A
Link
4A
H1
H2
E10
E30
E50
D14
D51
D54
D11
D14
D10
D54
D50
E30
E10
E50
D11
D10
D51
D50
L1 CT
L3 CT
HV COP 2 CT PANEL BACK PLATE
VT Input
Aux Supply