



**1. SCOPE**

**This document details PowerSystems requirements for the adoption of contestable work undertaken by New Connection Contractors.**

**2. ISSUE RECORD**

This is a controlled maintained document

All copies printed via the Intranet or photocopied will be deemed uncontrolled.

<b>Issue Date</b>	<b>Issue No</b>	<b>Author</b>	<b>Amendment Details</b>
	DRAFT	A Scott	

**3. ISSUE AUTHORITY**

<b>Author</b>	<b>Owner</b>	<b>Issue Authority</b>
Name A Scott Title Asset Management Engineering Consultant	Name Stephen Stewart Title Asset Management	Name S Wood Title Network Strategy Director  ..... .

**4. REVIEW**

This document shall be subject to periodic review.



**5. CONTENTS**

<b>1. SCOPE .....</b>	<b>1</b>
<b>2. ISSUE RECORD.....</b>	<b>1</b>
<b>3. ISSUE AUTHORITY .....</b>	<b>1</b>
<b>4. REVIEW .....</b>	<b>1</b>
<b>5. CONTENTS.....</b>	<b>2</b>
<b>6. DEFINITIONS AND ABBREVIATIONS .....</b>	<b>3</b>
<b>7. RELATED DOCUMENTS .....</b>	<b>4</b>
<b>8. DISCLAIMER.....</b>	<b>4</b>
<b>9. INTRODUCTION.....</b>	<b>5</b>
<b>10. CONNECTORS PROCESS AND PROCEDURES .....</b>	<b>6</b>
<b>11. NETWORK DESIGN .....</b>	<b>6</b>
<b>12. MATERIALS AND EQUIPMENT .....</b>	<b>7</b>
<b>13. CONSTRUCTION AND INSTALLATION.....</b>	<b>7</b>
<b>14. COMMISSIONING AND ENERGISATION.....</b>	<b>9</b>
<b>15. RECORDING OF ASSETS .....</b>	<b>10</b>
<b>APPENDIX 1 CONTACT DETAILS .....</b>	<b>10</b>
<b>APPENDIX 2 PROCESS DIAGRAM .....</b>	<b>12</b>

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## 6. DEFINITIONS AND ABBREVIATIONS

<b>Accredited</b>	Satisfying the requirements of PowerSystems by an appropriate officer of PowerSystems to carry out duties specified in writing at that time for persons carrying out the design and construction of Contestable Works and being Accredited to carry out Contestable Works.
<b>Approved</b>	Equipment which is Approved in accordance with PowerSystems documents for use or installation on the Company network.
<b>Good Industry Practice</b>	The exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced contractor engaged in the same type of undertaking under the same or similar circumstances.
<b>PowerSystems</b>	SP PowerSystems Ltd, operator of network assets on behalf of the Company
<b>SP Distribution Ltd</b>	The Distribution Licence Holder for the Distribution service area formerly known as Scottish Power.
<b>SP Manweb plc</b>	The Distribution Licence Holder for the Distribution service area formerly known as Manweb.
<b>The Company</b>	Refers to SP Distribution Ltd, SP Transmission Ltd and SP Manweb plc.
<b>New Connection Contractor</b>	Independent contractor wishing to undertake Contestable Work within the Company's licenced area, as detailed in PowerSystems document ASSET-01-015.

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## 7. REALTED DOCUMENTS

This document is one of a suite of documents detailing Power Systems requirements for New Connection Contractors to construct networks for adoption.

(a) **Electricity Association Documents:**

Engineering Recommendation G81 - Framework for design and planning, materials specification and installation and record for greenfield low voltage housing estate installations and associated, new, HV / LV distribution substations.

- Part 1: Design and Planning
- Part 2: Materials Specification
- Part 3: Installation and Records

(b) **The Company Internal Documents:**

- Design & Planning Framework for Greenfield Low Voltage Housing Estates Installations & Associated HV / LV Distribution Substations (Ref **ESDD-02-012**)
- Materials Specification framework for Greenfield low voltage housing estate installations and associated new HV/LV distribution substations (Ref. **EPS-03-027**).
- Installation and Records framework for Greenfield low voltage housing estate installations and associated new HV/LV distribution substations (Ref. **EPS-02-005**).

Networks' design, materials, construction and commissioning must comply with both the requirements described within this document and those detailed in (a) and (b) above and other related documents.

- Auditing and Escalation Regime for Networks constructed by third parties Asset-04-020
- Operating Regime for Contestable Network Construction on Greenfield Housing Sites Asset-04-015
- Recording of Electrical Assets by Contractors BUPR-22-015
- Power Systems New Connection Contractor Approval Policy Asset-01-015
- Secondary Substation Installation and Commissioning Specification Sub-02-006
- Authorisation Procedures OPSAF-13-001

## 8. DISCLAIMER

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supplied and may not be reproduced either wholly or in part, in any way whatsoever, nor may it be used by, or its contents divulged to, any other person whosoever, without the prior written permission of the PowerSystems.

This document applies to new installations and is not to be applied retrospectively.

PowerSystems reserves the right to change the data contained within this document without notification. Although specific network extensions may be designed by New Connection Contractors, PowerSystems maintains the responsibility for the design of the distribution system and since this guidance cannot cover every eventuality, reserve the right to apply other criteria where appropriate. PowerSystems accepts no responsibility for any inaccuracies in, or omissions from the document.

## **9. INTRODUCTION**

Changes initiated by the Electricity Regulator (Ofgem) have resulted in vast changes to the connection activities of all Distribution Network Operators. In particular 'Competition in Connections' has gained momentum. This has led to PowerSystems taking ownership of independently installed apparatus and being subjected to increased levels of risk. In order to safeguard PowerSystems from both the type of equipment installed and the extent of exposure incurred through adopting networks, Construction and Adoption Agreements have been developed.

Ofgem has encouraged the development of competition in the connection of new and existing premises to electricity distribution networks primarily to deliver benefits to customers in the market for connection services.

The Electricity Safety, Quality and Continuity Regulations 2002 states

### *PART 1 INTRODUCTORY – General Adequacy of Electrical equipment*

*3-(1) generators, distributors and meter operators shall ensure that their equipment is-*

- (a) sufficient for the purposes for and the circumstances in which it is used; and*
- (b) so constructed, installed, protected (both electrically and mechanically), used and maintained as to prevent danger, interference with or interruption of supply, so far as is reasonably practicable.*

The distributor (The Company) has to ensure that their network and therefore equipment is compliant with these regulations.

This document details PowerSystems process to facilitate to undertake contestable work which is to be considered for adoption by the Company ensuring that in adopting these

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networks the Company is not in breach of its duties under the Electricity Safety, Quality and Continuity Regulations 2002.

The document details how PowerSystems fulfils these obligations with respect to:

- Connectors process and procedures
- Design of Network
- Materials and equipment
- Construction and installation
- Commissioning and Energisation
- Recording of Assets

This document must be read in conjunction with Power Systems New Connection Contractor Approval Policy Asset-01-015.

## **10. CONNECTORS PROCESS AND PROCEDURES**

The Company shall satisfy themselves that the **New Connection Contractor** are competent to construct a network to be adopted.

**New Connection Contractor** shall meet the following requirements prior to the Company adopting that Equipment installed:

- All **New Connection Contractors** including sub-contractors shall be suitably accredited in accordance with PowerSystems New Connection Contractor Approval Policy Asset-01-015.
- All **New Connection Contractors** will have their work monitored and audited in accordance with the process detailed in Asset-04-020 Auditing and Escalation regime for Networks connected by third parties.
- Documentation referred to in this document shall be made available in an appropriate format to **New Connection Contractors**. PowerSystems reserves the right to alter and amend this documentation where appropriate. It shall be the responsibility of the **New Connection Contractor** to ensure that they have the most up to date documentation prior to commencing work.

## **11. NETWORK DESIGN**

- All designs shall be completed in accordance with the appropriate PowerSystems documentation outlined in the Related Documents (a) and (b).
- It shall be noted in addition to the requirements of this and other documents referenced it is expected that good **industry practice** is applied at all times.
- Power Systems shall specify all points of connection.



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- PowerSystems shall approve all designs before construction commences. Work completed prior to design approval shall be at the **New Connection Contractor's** own risk.
  - Any queries / clarification / challenges to current practice will be directed to Power Systems Connections. Appendix 1 details contact information.

## **12. MATERIALS AND EQUIPMENT**

- All materials / equipment used will be in accordance with Power Systems Approved Equipment Register of as detailed in Related Documents (a) and (b) and shall be NEW.
- All Materials/Equipment installed not detailed on the Approved Equipment Register shall be replaced at the New Connection Contractors cost. Failure to comply with this policy shall result in the non adoption of the contestable works.
- If a New Connection Contractor wishes to install material / equipment not detailed within the Approved equipment Register then this material / equipment must be approved by PowerSystems prior to installation.
- The PowerSystems approval process consists of a number of risk assessments in order to ensure that the equipment is fit for purpose.
- These activities are carried out by PowerSystem's staff whose time will be charged on a time and material basis.
- It should be noted that it is not possible to approve all equipment for use and due to changing business priorities PowerSystems will not provide an estimated time scale for completing the process.
- Low Voltage cable joint approvals are completed in accordance with Assessment of Third Party LV Cable Jointing Systems CAB-04-008.

## **13. CONSTRUCTION AND INSTALLATION**

The Electricity Safety, Quality and Continuity Regulations 2002 states

*PART 1 INTRODUCTORY – General Adequacy of Electrical equipment*

- 3-(1) generators, distributors and meter operators shall ensure that their equipment is-*
- (a) sufficient for the purposes for and the circumstances in which it is used; and*
  - (b) so constructed, installed, protected (both electrically and mechanically), used and maintained as to prevent danger, interference with or interruption of supply, so far as is reasonably practicable.*



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The ESQC regs2002 puts a responsibility on the Company to ensure that equipment is constructed and installed to prevent danger and to prevent interference or interruption to supply.

### **13.1 Competency of Staff / Contractors**

PowerSystems fulfils these obligations through the following actions.

- Ensuring **New Connection Contractor** including sub-contractors hold appropriate Accreditation for work that they intend to undertake or can demonstrate they are working towards accreditation as detailed in Power Systems New Connection Contractor Approval Policy Asset-01-015.
- All **New Connection Contractor** will have their work monitored and audited in accordance with the process detailed in Asset-04-020 Auditing and escalation regime for Networks connected by third parties.

#### **13.1.1 Competency of Cable Jointers**

To inspect a cable joint and assess if has been constructed correctly and is fit for purpose requires the joint to be broken down rendering it obsolete. As a result of this PowerSystems require cable jointers to be assessed prior to constructing joints for adoption.

**This is in addition to the requirements detailed in Power Systems New Connection Contractor Approval Policy Asset-01-015.**

Cable jointers will undergo a trade test using the proposed jointing kits and associated instructions on the appropriate cables detailed in the Approved Equipment Register.

Trade tests will not be required where a cable jointer can supply evidence demonstrating extensive experience in successfully constructing the proposed joints.

Where a jointing system has fulfilled the requirements of Assessment of Third Party LV Cable Jointing Systems CAB-04-008 the **New Connections Contractor** will require to supply the jointing material and instructions to enable jointers to be assessed.

Trade tests will be carried out at the cost of the **New Connections Contractor**. Tests will normally be carried out at our training Centres at Cumbernauld or Hoylake, however in special circumstances tests can be arranged to be completed on site.

Appendix 1 contains the contact details for Power Systems for jointing system assessments, assessment of evidence of prior experience and trade tests. Appendix 2 contains a process diagram.



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### **13.2 Work on or adjacent to Company Plant or Apparatus**

In compliance with the requirements of the Electricity at Work Regulations 1989, no persons shall be engaged in any work activity where technical knowledge and experience is necessary to prevent danger or (where appropriate) injury unless they possess such knowledge and experience, or is under such degree of supervision as may be appropriate having regard to the nature of the work.

In accordance with the Health and Safety series booklet HS(R)25 – “Memorandum of Guidance on the Electricity at Work Regulations 1989,” the question of technical knowledge or experience necessitates:

- a) Adequate knowledge of electricity.
- b) Adequate experience of electrical work.
- c) Adequate understanding of the system to be worked on and practical experience of that class of system.
- d) Understanding of the hazards that may arise during the work and the precautions, which need to be taken.
- e) Ability to recognise at all times whether it is safe to work to continue.

Before any work can be undertaken on or adjacent to the Company’s Equipment the requirements of PowerSystems Safety Rules and associated procedures must be met in full. The requirements for authorisation are contained in Authorisation Procedures OPSAF-13-001.

It should be noted that no person or persons without the appropriate technical knowledge and experience shall present themselves for approval under these procedures or shall attempt to use the principles, processes and operating regime as established within this document.

**New Connection Contractor** wishing to carry out live low voltage jointing shall meet the requirements detailed in Asset-04-015 Operating Regime for Contestable Network Construction on Greenfield Housing Sites.

## **14. COMMISSIONING AND ENERGISATION**

Commissioning, pre and post energisation checks and tests are detailed in ‘Installation and Records framework for Greenfield low voltage housing estate installations and associated new HV/LV distribution substations’ (Ref. EPS-02-005) **and related documents.**

Pre energisation test and check results shall be forwarded to Power Systems prior to energisation in accordance with



- Asset-04-015 Operating Regime for Contestable Network Construction on Greenfield Housing Sites
- Secondary Substation Installation and Commissioning Specification Sub-02-006
- Recording of Electrical Assets by Contractors BUPR-22-015

Power Systems shall be advised in advance of any commissioning and pre energisation tests to enable the appropriate tests to be witnessed. This notification will be no less than five working days in advance and in accordance with the above documents. For connections involving work at 6.6kV /11kV and above notification will be no less than fifteen working days in advance.

## **15. RECORDING OF ASSETS**

All asset details shall be recorded and sent prior to energisation to Power Systems in accordance with the requirements detailed in 'Recording of Electrical Assets by Contractors' BUPR-22-015.

Data will be with Power Systems 3 working days prior to energisation. Post energisation tests results and final joint details will be with PowerSystems within 24 hours of energisation.

## **APPENDIX 1 CONTACT DETAILS**

### **Initial point of Contact for New Connection Contractors**

#### **Scotland**

Customer Connections  
SP Power Systems Limited  
P.O. Box 8730  
Bellshill M11 3YE  
Tel: 01698 784567  
Fax: 01698 784777  
Email: [CramAdminNorth@SPPowerSystems.com](mailto:CramAdminNorth@SPPowerSystems.com)

#### **Merseyside and North Wales**

Customer Connections  
SP PowerSystems Limited  
Lister Drive  
Liverpool L13 4HJ  
Tel: 0151 221 2179 / 2338  
Fax: 0151 221 2492  
Email: [CramAdminSouth@SPPowerSystems.com](mailto:CramAdminSouth@SPPowerSystems.com)

#### **Assessment of Cable Jointing Systems**

Engineering & Transmission Operations  
SP Power Systems Limited  
New Alderston House

Dove Wynd  
Strathclyde Business Park  
Bellshill ML4 3FF  
Tel: 01698 413000



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**Assessment of Evidence of Jointers**

**Experience**

Business Risk & Safety  
SP Power Systems Limited  
New Alderston House

**Trade Tests**

**Scotland**

Power Systems Powerlearning  
Dealain House  
Napier Road  
Wardpark North  
Cumbernauld G68 0DF  
Tel: 01236 727 721

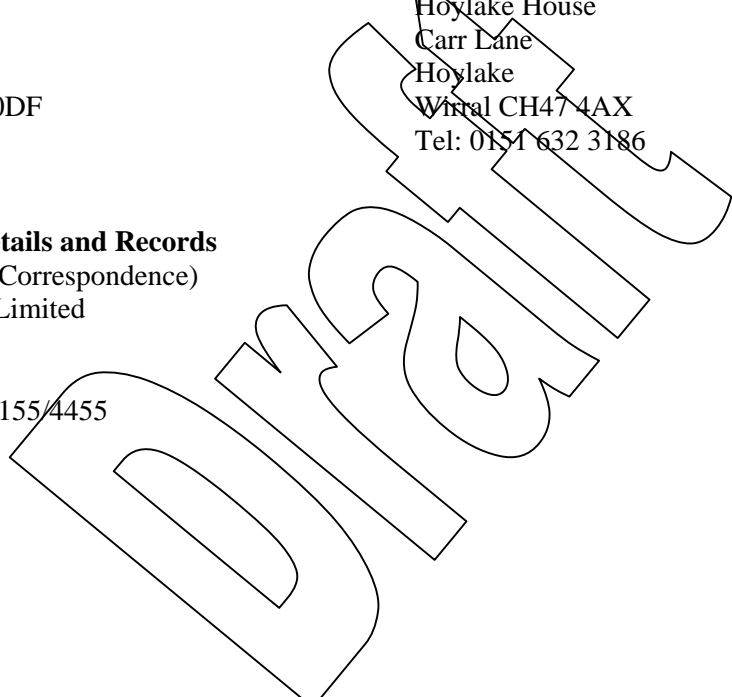
Dove Wynd  
Strathclyde Business Park  
Bellshill ML4 3FF  
Tel: 01698 413000

**Merseyside and North Wales**

Power Systems Powerlearning  
Hoylake House  
Carr Lane  
Hoylake  
Wirral CH47 4AX  
Tel: 0151 632 3186

**Commissioning Details and Records**

Data Management (Correspondence)  
SP Power Systems Limited  
St Vincent Crescent  
Glasgow G3 8LT  
T: 0141 567 4152/4155/4455  
F: 0141 567 4262





APPENDIX 2 PROCESS DIAGRAM

