

Company Directive

STANDARD TECHNIQUE: SD1F/3

Competition in Connections Code of Practice (COP)

Procedure for network analysis by Independent Connection Providers (ICPs)

Policy Summary

This document specifies the procedure for WPD and ICPs, for compliance to the 'Code of Practice' where an ICP is to determine the 'Point of Connection' and / or self-approve the scheme design.

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Implementation Date: September 2019

Approved by

Paul Jewell
DSO Development Manager

Date:

23 September 2019

Target Staff Group	Internal Planners and Independent Connection Providers
Impact of Change	Amber – Significant changes to the self-determination process
Planned Assurance checks	None

All references to Western Power Distribution or WPD must be read as National Grid Electricity Distribution or NGED

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IMPLEMENTATION PLAN

Introduction

This document specifies the procedures that shall be followed by Western Power Distribution (WPD) and Independent Connection Provider (ICP) staff where the ICP wishes to determine the point of connection to WPDs network and / or approve their own design, in accordance with the ENA Competition in Connections Code of Practice (COP).

Main Changes

Requirements for self-determination of the point of connection have been amended. Full details are provided in the Document Review and Revision table.

Impact of Changes

Changes made to formalise the exchange of information relating to technical studies and the inclusion of the policies SD5F, SD4D and SD4E.

Implementation Actions

Team Managers responsible for new connection activities shall ensure that all staff involved in the design of WPDs network are made aware of the requirements of this standard technique.

Implementation Timetable

This document can be implemented with immediate effect.

REVISION HISTORY

Document Revision & Review Table		
Date	Comments	Author
September 2019	<ul style="list-style-type: none"> Clause 2.2 & 2.3, reference and link added regarding ENA EREC G88 Clause 4.2 amended to detail information required from outset of enquiry Clause 4.3 added to detail when in depth technical data shall be provided to an ICP Clause 5.2 has been modified to make provision for an email notification Clause 5.5 added, ICP to determine POC taking the DNO obligations into consideration Table 1 has been modified Clause 6.2 to 6.4 have been modified to clarify the requirements for generation connections Clause 6.5 has been amended to align with current practices (no PR hand symbols) Clause 6.8 has been amended to reference Appendix C. Section 7 has been amended to include SD5F, SD4D & SD4E. Clause 8.6 has been amended to include the requirement for an ICP to provide input and output data Clause 8.7 has been added to detail technical data that WPD is to provide to the ICP Clause 9.3, 9.4, detail added regarding link boxes Clause 10 has been added to detail LV earthing requirements Clause 12.3 has been amended align with ESQC regulation 28. The list of documents provided in Appendix C has been updated 	Seth Treasure
October 2016	<ul style="list-style-type: none"> Updated to reflect current CIRT self POC process Terminology updated to mirror COP Clarification on how an ICP requests additional information. 	Stephen Davies
May 2016	<ul style="list-style-type: none"> Appendix A form removed (now built into CIRT) Points 5.6 and 5.7 updated Appendix references updated. 	Stephen Davies
April 2016	<ul style="list-style-type: none"> Tables reformatted and added in Sections 6.1, 7.3 and 10.5 to harmonise content with other DNOs 	Seth Treasure
April 2016	<ul style="list-style-type: none"> WPD / ICP Design Approval form removed and replaced with electronic link to the Point of Connection & Contestable Design Audit form Appendix B 	Stephen Davies
September 2015	<ul style="list-style-type: none"> New Standard Technique 	Seth Treasure

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1.0 INTRODUCTION

- 1.1 WPD must provide ICPs with the same level of information that is available to WPD staff. This information must be available on a 24/7 basis or delivered in a timely manner.
- 1.2 The objectives of the COP are to facilitate competition in the market of new electricity connections through minimising the input services from host DNOs and to ensure that the input services are provided on an equivalent basis to internal data systems.
- 1.3 The COP can be viewed by clicking on the following link:- [Code of Practice](#)

2.0 SCOPE

- 2.1 The COP has been created to detail the increased level of competition and set out the end to end processes, practices and requirements that a DNO will follow to enable ICPs to undertake contestable works. The COP covers:
 - Accreditation
 - Determining the Point of Connection
 - Convertible Quotations (Dual Offer)
 - Design Approval
 - Link Boxes
 - Inspection
- 2.2 The COP has been written to complement and enhance the detail provided within ENA EREC G88 which relates to the planning, connection and operation of electricity distribution networks at the interface between DNOs and IDNOs.
- 2.3 ENA EREC G88 can be viewed by clicking the following link:- [ENA EREC G88](#)

3.0 ACCREDITATION

- 3.1 ICPs wishing to undertake market segments of competition must be appropriately accredited for the specific contestable activity.
- 3.2 Following the implementation of the COP, the analysis of electricity distribution networks to facilitate new connections has been made contestable.
- 3.3 ICPs that wish to undertake network studies and determine and design the Point of Connection (POC) must hold a relevant accreditation and be assessed to possess enough competence as awarded under the National Electricity Registration Scheme (NERS).
- 3.4 The individual planner does not need to obtain personal NERS accreditation for the relevant subject but will obtain internal company accreditation.

4.0 WPD RESPONSIBILITIES

- 4.1 WPD must provide the ICP with information on a 24/7 basis and to the same standard as provided to its own staff. The information must be provided in a timely manner and therefore much of the information will be available via a new CROWN internet routing and tracking ("CIRT") software package that will provide the ICP with instant information.
- 4.2 Where information is currently unavailable via the CIRT or Data Portal 2 software packages and the data is required to determine the POC (Embedded Network Agreed Capacities, HV feeder demands etc.) this information can be requested by the ICP via CIRT when the enquiry is first raised.
- 4.3 Where information is currently unavailable via the CIRT or Data Portal 2 software packages to refine / finalise the connection design and an in depth study is required to collate the technical data. WPD will undertake the technical assessment and provide the collated data once the ICP has accepted and paid WPD for the design assessment fees associated with the enquiry (where applicable).

For example, a single phase fault level study is required to determine the impedance and fault clearance time at the point of supply to refine the earthing design of a distribution substation.

If WPD have used assumptions for the initial design of a connection, these assumptions shall be provided to the ICP for the use in their initial design.

- 4.4 WPD will provide the ICP with relevant documentation detailing the current design standards and techniques and this will be made available via the WPD Tech Info website.
- 4.5 WPD will provide the ICP with sufficient mapping information as to enable the clear interpretation of the WPD distribution network and to facilitate the determination of the point of connection onto the existing network.
- 4.6 WPD will create Meter Point Administration Numbers (MPAN) where the intention is for WPD to adopt the assets.
- 4.7 WPD will make customers aware of the competitive connections market, provide competition information and provide Dual Offer quotations (known as Convertible Quotations in the COP) to facilitate competition.
- 4.8 In the event of an ICP applying to design a connection which is subject to interactivity, network reinforcements or network constraints, the ICP shall be informed of non-compliance to this policy. WPD shall determine the POC, provide a cost for the non-contestable activities and follow the standard competition in connection procedures.
- 4.9 In the event of an ICP applying to design a connection which is subject to Apportionment of Costs or Potential Refund, the POC may be determined by the ICP but the additional non contestable charges will be determined by WPD. An associated enquiry will be raised and will detail the non-contestable fees that shall be funded prior to the build out of the scheme.

5.0 ICP RESPONSIBILITIES

- 5.1 The ICP will assess the connection application and determine whether they are appropriately accredited to determine the POC.
- 5.2 On receipt of an application, if the ICP wishes to determine the point of connection they shall notify WPD via the CIRT system or by submitting a Self Point of Connection Notification proforma via email to WPD's Records Team.
- 5.3 The ICP will assess the connection application and determine if a detailed technical assessment or matrix type assessment for determination of the POC is required. ST:SD5B provides guidance on matrix type assessments.
- 5.4 The ICP shall design the POC and any works to be adopted by WPD, in accordance with the ENA ER G81 documents, WPDs G81 Appendices and the relevant WPD Directives and Connection Guides. These documents are available from WPDs Technical Information website, www.westernpowertechninfo.co.uk.
- 5.5 The POC shall be determined by taking into account all of the ICP requirements and the DNO's wider obligations.
- 5.6 The ICP will inform WPD of the progress of the Proposed Connection through CIRT at the time of submission of a POC Determination Notice, POC Issue Notice and POC Acceptance Notice.
- 5.7 The ICP will provide WPD with a POC location and contestable design electronically by attaching the plan/ documents to the CIRT enquiry when completing the 'POC Acceptance – ICP Quote Accepted' CIRT activity.
- 5.8 Where the ICP is to self-approve the design of the POC the ICP will confirm compliance to the relevant standards when completing the 'POC Issue – ICP Quoted' CIRT activity.

6.0 DETERMINING THE POINT OF CONNECTION

- 6.1 ICPs may determine the POC onto WPD's network for the following connection works detailed within table 1.

Connection Type	Self-determination available	Notes
LV Demand	Yes	Matrix designs available – see section 7
HV Demand	Yes	Simplified design process available – see section 7
HVEHV Demand	No	
EHV132 Demand	No	
DG LV	No	
DG HV	Yes	Limited to 50kW (installed generation capacity)
DG HVEHV	No	
UMS LA	Yes	
UMS Other	Yes	
UMS PF1	Yes	

Table 1: Contestability of POC design

- 6.2 ICPs may only determine LV POCs for **new demand** connections, and therefore LV generation connections, alterations or augmentations are deemed to be non- contestable. In this context, if the load connected at the LV POC includes a small amount of generation (rated up to 16A per phase, per customer connection) and this will never export through the LV POC then this is considered to be an LV Demand connection (not a DGLV connection). See also clause 6.4.
- 6.3 Self-determination of HV POCs is limited to **new demand** connections and **new generation** connections with an installed generation capacity of 50kW, or less. See also 6.4. Alterations or augmentations are deemed to be non-contestable.
- 6.4 In addition to the above requirements, ICPs may not determine the POC for generation connections exceeding 16A per phase (per customer connection) in the East Midlands, due to interaction with National Grid reinforcement schemes. This decision will be kept under review.

- 6.5 POC designs by ICPs may only be undertaken when the local network is **not subject to** any (cost applicable) upstream reinforcement works and or local network constraints as the designs and works remain non-contestable.
- 6.6 POC designs by ICPs may only be undertaken when there are no interactive schemes on any associated and relevant parts of the network. For the avoidance of doubt, multiple enquiries for the same developer or connection via multiple ICPs and WPD are deemed not to be interactive.
- 6.7 POC designs shall satisfy the requirements of the documents listed in Appendix C.

7.0 MATRIX DESIGN & SIMPLIFIED CONNECTION DESIGN

- 7.1 WPD provides four separate policies for the determination of the point of connection using matrix type or simplified design techniques. These policies enable the quick determination of the POC with minimal network analysis, in some situations. WPD's standard design matrices for LV connections are Standard Technique: SD5F and SD5B which relate to connections with a capacity $\leq 5\text{kVA}$ and $\leq 200\text{kVA}$ respectively. WPD's policy regarding simplified high voltage design is Standard Technique: SD4D and SD4E for matrix assessments.
- 7.2 The ST: SD5F matrix design process requires the users to undertake on site measurements and assessments as well as a review of the localised electricity system by using the WPD mapping system.
- 7.3 The ST: SD5B matrix design process uses pre-assessed parameters modelled within WinDebut to enable the connection of Low Voltage demands subject to the compliance to minimum network requirements and maximum demand requirements.
- 7.4 The ST: SD4D simplified design process requires users to map the high voltage network schematically and thereafter count the current flow across the high voltage conductors for normal and abnormal running arrangements. Computer modelling software is not required for the assessment.
- 7.5 The ST: SD4E matrix design process relating to high voltage connections requires the user to collate circuit demands, circuit lengths and circuit conductor data to assess against pre conditions.
- 7.6 The Code of Practice Agreement for ICPs determining the POC using a standard matrix design requires that the criteria for matrix designs are published in Table 2A, 2B & 2C.

Criteria	Measurement	Comment
System Voltage	LV	Detailed designs are required for HV and EHV POCs.
Connection Capacity	5kVA maximum	Per feeder
Distance to Substation	N/A	Max EFLI for 5kVA demand of 0.55Ω
Service Cable Length	30m	Longer services require more detailed analysis
Transformer Capacity	100kVA and above	Transformer to be maintained to within summer sustained capacity
Asset types Excluded	None	

Table 2A Applicability of Matrix Designs (ST: SD5F)

Criteria	Measurement	Comment
System Voltage	LV	Detailed designs are required for HV and EHV POCs.
Connection Capacity	200kVA maximum	Reduced to 150kVA maximum for 6.6kV networks
Distance to Substation	200m	Increased to 250m for capacity less than 150kVA
Service Cable Length	30m	
Transformer Capacity	315kVA and above	Additional restrictions apply to the maximum load on each LV fuse-way
Asset types Excluded	None	

Table 2B Applicability of Matrix Designs (ST: SD5B)

Criteria	Measurement	Comment
System Voltage	HV	Not including 6.6kV
Connection Capacity	500kVA	Overall circuit demand to be \leq 25% circuit rating
Distance to Substation	\leq 2.5km	Circuit length from the CB to any open point
Service Cable Length	\leq 2.5km	Circuit length not to be exceeded by inclusion of new 'ringed' connection
Transformer Capacity	\leq 500kVA	For HV metered connections – up to 500kVA demand
Asset types Excluded	Overhead circuits	

Table 2C Applicability of Matrix Designs (ST: SD4E)

7.7 A summary of Standard Technique: SD5F is detailed in Table 3A, below:

Load and Demand	
Transformer to have a rating of \geq	100kVA
Permissible new load to be connected to each feeder	5kVA
Mains conductor to have a cross sectional area	\geq 35mm ²
Impedance at cutout to comply with targets	To ensure clearance time \leq 5s
Service cable to have cross sectional area	\geq 25mm ²

Table 3A Summary of ST: SD5F

Load and Demand (balanced loads only)		
Demand Subject to available spare transformer and feeder capacity	11kV HV network	6.6kV HV network
Permissible new load to be connected to 315KVA TX	200kVA	150kVA
Permissible new load to be connected to 500KVA TX	200kVA	150kVA
Permissible single point load to be connected to 315kVA TX	172kVA	138kVA
Total load (existing & new) on single fuse way	217kVA	172kVA
Feeder Length and Size:		
Continuous length > 185mm wavecon < 200m	200kVA	
Continuous length > 185mm wavecon & between 200 and	150kVA	

Table 3B Summary of ST: SD5B

Load and Demand (balanced loads only)	
Circuit voltage	11kV network
Connection capacity (HV metered or transformer size)	500kVA
Circuit shall not employ arc suppression coil earthing	
Export capacity	$\leq 50\text{kVA}$
Circuit construction	Underground only
Mains conductor to have a summer sustained rating	$\geq 150\text{A}$
Length of circuit to open point	$\leq 2.5\text{km}$
Circuit demand during normal running arrangement	$\leq 25\%$ circuit rating
Circuit demand during abnormal running arrangement	$\leq 50\%$ circuit rating

Table 3C Summary of ST: SD4E

- 7.8 The ICP will confirm compliance with ST:SD5B, ST: SD5F, ST: SD4D or ST:SD4E (where applicable) when completing the 'POC Issue – ICP Quoted' CIRT activity.
- 7.9 Where the Standard Design Matrix is used to determine the Point of Connection, the competent electrical designer will require cable plans, substation and feeder loads.
- 7.10 Where an ICP has assessed the POC using WPD's standard design matrices and has fully complied with the clauses and requirements, any network design issues that arise after the work has been completed (e.g. thermal issues, voltage issues etc.) will be rectified by WPD at WPD's cost.
- 7.11 If network issues arise following the connection of load by an ICP onto WPD's network and it is found that the ICP has not complied with the clauses within Standard Technique: SD5B, SD5F, SD4D or SD4E where appropriate, the required reinforcement works, calculated by WPD (as reinforcement is deemed to be non-contestable) will be fully funded by the responsible ICP.
- 7.12 Any proposed connections that do not fall within the scope of the standard design matrices detailed within Standard Technique: SD5B, SD5F, SD4D or SD4E will require full detailed technical assessment.

8.0 NOTIFICATION PROCESS

- 8.1 WPD and ICPs will exchange information relevant to the determination of the POC for new load connections. Automatic data exchanges will be made via CIRT and additional information will be made available by the relevant departments within WPD.

8.2 The ICP must notify WPD with the relevant information detailed below at the following stages.

- POC Determination Notice – when the ICP commences investigation into the determination of a POC.
- POC Issue Notice – When the ICP issues a quotation to its customer.
- POC Acceptance Notice – When the ICP's customer accepts the quotation provided by the ICP.

The above bullet points will be noted activities within an enquiry category for ICP connections.

8.3 POC Determination Notice – The ICP must notify WPD of their intention to determine the POC and provide WPD with the following information:

- Confirmation of the capacity required.
- The nature and type of load or generation that is to be connected.
- The timing of the connection.
- The proposed network owner that will be responsible for the end-consumer connections and MPAN creation.
- A polygon showing the location and the size of the development.
- A build-out programme over a five-year period showing the growth of the capacity required.

8.4 At the POC Determination Notice stage, WPD must provide the ICP with any relevant information regarding:

- Network Constraints *
- Upstream Reinforcement *
- Interactivity (associated Offered quotations to the same parts of the network that are not yet connected) *
- Regulation Payments associated with Potential Refunds or Apportionment of Costs as per Standard Technique: NC1P **
- Agreed Supply Capacities for existing Embedded Networks.
- Earthing arrangements for Distribution Substations (PME / SNE / PNB / None).
- Protection arrangements for Distribution Substations (Fuse size or CB settings).
- Simple assessment of the earthing arrangements for the Distribution Network (Hot or Cold – EPR >/< 430V).
- Feeder Load data for HV networks (Raw data from Data Logging OAS) detailed within guidance notes.

* Schemes subject to Network Constraints or Upstream Reinforcement cannot be considered for Point of Connection Design by ICPs or IDNO's as they are outside of the scope of the Code of Practice agreement.

** Where Apportionment or Potential Refund costs apply, a second linked CIC enquiry shall be created to enable the recovery of the non contestable costs.

8.5 POC Issue Notice – The ICP must confirm to WPD when and to whom a quote was issued.

- WPD will log the details for future reference to further possible associated connection applications.
- Where a quote becomes interactive with a subsequent WPD or ICP quote, WPD will notify the relevant ICPs that a **requote** would no longer be considered to be contestable determination of POC.

8.6 POC Acceptance Notice – ICP Requirements

- If one of WPD's standard design matrices are utilised, the ICP must confirm in writing that the connection is compliant to the requirements of Standard Technique: SD5B, SD5F, SD4D or SD4E where appropriate. WPD will not be required to approve designs compliant with the requirements of these policies.
- If an appropriately detailed network study was undertaken, the ICP must confirm via CIRT when completing 'POC Issue – ICP Quoted' CIRT activity that the Connection design is compliant to WPD policies and Standard Techniques.◊
- Suitably Accredited ICP's may self-approve the POC design in accordance with their NERS accreditation and the requirements set out in this Standard Technique, including paragraph 10 below. The ICP shall still submit the design to WPD for inspection in accordance with the requirements of the COP.
- Where the ICP does not undertake the design approval, WPD shall be entitled to require the ICP to submit their design to WPD for approval in accordance with the requirements of the COP.
- Inspection works of the constructed network shall be carried out in accordance with the Inspection and Monitoring Regime.
- As Constructed drawings of connection works to be adopted by WPD shall be forwarded to the regional Mapping Centre.

◊ When an ICP has undertaken technical analysis to determine the point of connection or has designed an extension asset that will be adopted by WPD. The ICP shall provide WPD with the following information;

- Copies of input and output from the design package used;
- a statement of the design parameters used;
- a drawing showing the network layout to a suitable scale showing, routes, joint positions, cable sizes, link boxes and LV phase connections;
- Confirmation that the design meets the requirements of the appropriate Standard Techniques.
- Technical data relating to a stage 2 assessment for compliance with ENA EREC G5, G98, G99, P28, P29.

8.7 POC Acceptance Notice – WPD Requirements

Where the point of supply is on the high voltage system, WPD must provide the ICP with the following information;

- Relay settings for high voltage metered customers
- The following sequence components;

R1 = Positive sequence source resistance
X1 = Positive sequence source reactance
R0 = Zero sequence source resistance
X0 = Zero sequence source reactance

- Earth Potential Rise (EPR) of the primary substation (for an 11kV and 33kV fault)
- Impedance of the earthing system at the primary substation
- Details regarding the protection settings and characteristics

The information shall be collated on the following spreadsheet and forwarded to the ICP within 10 working days. [<Earthing Design Submission Form>](#)

This supplementary document regarding how to calculate the protection operating time shall also be issued. [<Time Multiplier Table>](#)

9.0 LV LINK BOXES

9.1 Where a link box is required at the connection boundary between WPD's Distribution System and the network of an IDNO, the link box shall be considered to be in addition to the minimum cost scheme compliant to industry / company standards.

- Where the link box is requested by the ICP or the IDNO, the link box will become the property of the IDNO.
- Where the link box is requested by WPD, the link box will become the property of WPD.
- The cost of providing the link box will be funded by the party that is to own the link box (as described above).

9.2 WPD (local) and or the relevant IDNO must be contacted to determine the requirement of a Link Box at each POC.

9.3 Where grading can be achieved the link box shall incorporate fuses. Where grading is unachievable links shall be used subject to agreement that the DNO upstream fuses afford protection.

10.0 EARTHING – LV CONNECTIONS

10.1 For compliance with the PME requirements, a LV earth electrode with a resistance $\leq 100\Omega$ shall be installed at the end of the WPD network.

10.2 To achieve the desired earth electrode resistance within average uniform soil, the minimum electrode design of one 1.2m long 12.7mm rod and 3m of 70mm² HDC shall be installed at the WPD exit point. Advice shall be sought from the regional earthing specialist for high soil resistivity areas.

11.0 DESIGN APPROVAL

- 11.1 The suitably accredited ICP or WPD shall ensure that the POC design is compliant with all relevant national laws, regulations and ENA documentation. It shall also be compliant with WPD Policies, Standard Techniques and Design Specifications.
- 11.2 Assessments shall be made to ensure compliance to thermal restrictions, voltage regulation, impedance limits, Fault Levels, Protection settings / compliance, material specification, earthing arrangements and suitable positioning / access or egress concerns.
- 11.3 Where WPD is to approve a design, the reviewer shall assess the proposed design to the same standards to that of internal works and will not make any requirements above that of the competitive WPD design.
- 11.4 If required, the WPD assessment of the Point of Connection design shall be recorded and documented within the [Point of Connection and Contestable Design Audit form](#).
- 11.5 The Code of Practice Agreement for ICPs Design Approval is available for the connection types detailed in Table 1. The Qualifying Criteria that will apply to allow an ICP to move between the different levels of design approval are listed in Table 4, below:

Audit Level	Criteria
1 (100% audit)	20 audits required to move to Level 2
2 (50% audit)	20 audits required to move to Level 3
3 (25% audit)	
Self Audit Level	
1 (5% audit)	20 audits required to move to Level 2
2 (2% audit)	

Table 4 Audit Levels

12.0 INFORMATION ON REQUEST

- 12.1 ICP's can obtain the following information by using the online CIRT package.
- Substation Name
 - Substation Number
 - HV Feeder Reference
 - Primary Substation Name & Number
 - Total number of Customers
 - Total Agreed Supply Capacity (must be reserved)
 - Day MD*
 - Night MD*
 - Transformer Size & Voltage
 - LV Cabinet / Pillar size
 - HV Switch Type
 - Automation assets

Then per LV Feeder:

- Feeder Number
- Number of Customers by Profile Class
- Number of Half Hourly Customers
- Number of IDNO Customers per substation
- Agreed Supply capacities per feeder (These capacities must be reserved)

* Inaccurate data may arise where MPAN numbers are incorrectly profiled or the meter supplier has provided inaccurate data. In the event of spurious or suspicious data WPD's responsible local team must be contacted for interpretation.

12.2 Any information not included within CIRT and required for the design of the connection can be obtained by requesting it when first setting up the enquiry or by contacting the responsible local team. The contact details of the responsible team will be provided in the confirmation email during the notification process. This information shall be provided within five working days where the information is available on the WPD systems or up to six weeks where monitoring equipment needs to be fitted on site to collect data.

12.3 Information obtained via responsible WPD team –

- HV Feeder protection data
- HV feeder demand data
- Earthing arrangements
- IDNO Agreed Supply Capacities
- HV Impedance data – to be provided following acceptance and payment of fees

Information to be provided free of charge in compliance with ESQC Regulation 28 (Information to be provided on request)

- The maximum prospective short circuit current at the supply terminals
- The maximum earth loop impedance of the earth fault path outside of the installation (LV)
- The type and rating of the distributors protective devices nearest to the supply terminals
- The type of earthing system applicable to the connection
- The number of phases
- The frequency of the connection
- The voltage

12.4 Information to be obtained via the central Primary System Design Planning team –

- Primary Substation protection data
- Automatic voltage control settings (target and bandwidth of voltage)
- Earthing Arrangements within close proximity to Primary Substations
- Information required for the analysis of the Rise of Earth Potential at a Distribution Substation

To obtain PSD information, the ICP shall make a request by emailing wpdpdicpdata@westernpower.co.uk

13.0 LAND RIGHTS

- 13.1 ICPs must ensure that all statutory consents and land rights are negotiated in accordance with WPD's Estates and Wayleaves Policy documents.
- 13.2 Land rights should be negotiated so as to be in accordance with the terms of WPD's standard legal document templates.
- 13.3 WPD Estates and Wayleaves documents and standard legal document templates will be made available on the WPD Technical information website.

APPENDIX A

Point of Connection & Contestable Design Audit form

[\\AVODCS01\NEWCON\CIC\I and MR\Forms for I&MR\POC + CONTESTABLE DESIGN AUDIT FORM.pdf](#)

APPENDIX B

SUPERSEDED DOCUMENTATION

This document supersedes ST: SD1F/2 dated October 2016 which has now been withdrawn.

APPENDIX C

RECORD OF COMMENTS DURINGS CONSULTATIONS

No comments received

APPENDIX D

ASSOCIATED DOCUMENTATION

The latest version of the following documents are applicable:

- Electricity Act 1989
- Electricity, Safety, Quantity and Continuity Regulations 2002
- ST: SD4A - Design of WPD 11kV and 6.6kV Networks
- ST: SD4D – Simplified assessment of HV networks
- ST: SD4E – Matrix design for HV connections
- ST: SD4OA - Standard HV Connection Arrangements utilising RMU's
- ST: SD4OB - Standard HV Connection Arrangements utilising CB's
- ST: SD5A - Design of Low Voltage Domestic Connections
- ST: SD5B – Matrix type connections up to 200kVA
- ST: SD5C - Design of Low Voltage connections to Multiple Occupancy buildings
- ST: SD5D - Arrangement of Low Voltage Cut outs
- ST: SD5E - Design of Low Voltage Commercial and Industrial Connections
- ST: SD5F – Matrix type connections up to 5kVA
- ST: SD5G – Connection of EV charge points and Heat Pumps
- ST: SD5K - Relating to the use of Windebut computer software
- ST: SD5P - Design of Unmetered Connections
- ST: SD5R - Earth Fault loop Impedances and Phase to Neutral Loop Impedances at LV installations
- ST: SD6J - Connection Design – Potentially disturbing Electrical Equipment rated up to 75A
- ST: SD5A - Overhead Line Ratings
- ST: SD8B - Cable Ratings

APPENDIX D Cont.

- ST: TP4B - Relating to the protection of Distribution Substations
- ST: TP21D - 11kV, 6.6kV and LV earthing
- ST: TP21E - Provision of WPD earth terminals to customer LV installation
- ENA ER G81 (all parts)
- WPD G81 Appendices (all parts)
- ENA Competition in Connections Code of Practice
- ENA EREC G88 – Principles of work between DNOs and IDNOs

APPENDIX E

KEY WORDS

Point of Connection, ICP Design, Code of Practice Agreement, ICP design stages.