WESTERN POWER DISTRIBUTION

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Company Directive

STANDARD TECHNIQUE: SD1G/1

Communications Requirements for Parallel Generation Sites

Summary

This document sets out the options for telecommunications connections which are to be established for parallel generation connections to the WPD network

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Implementation Date	**October 2016**
Approved by	
	Policy Manager
Date	31 October 2016

IMPLEMENTATION PLAN

Introduction
This Standard Technique details the options for telecommunications connections which are to be established for parallel generation connections to the WPD network.

Main Changes
The conditions for requiring communication links have been clarified.
Unlicensed radio options have been removed and replaced by licensed radio utilising the GE iBox RTU.

Impact of Changes
The use of licensed radio at ≤1000kW generation sites will allow analogue information (active power, reactive power, current and voltage) to be made available.

Implementation Actions
Team Managers responsible for staff involved in the design, installation, maintenance and replacement of generation connections shall ensure they made aware of, and follow, the requirements of this document.

Implementation Timetable
This document shall be implemented with immediate effect for new and substantially modified connections, with the following exception.
There is no retrospective action for connections / modifications that are in progress at the time of issue of this document (i.e. where the telecommunications solution has already been agreed with SURF).

Document Revision & Review Table		
Date	**Comments**	**Author**
December 2016	• Clause 2.1:- Installed Capacity changed to Export Capacity • Appendix A:- Generation Capacity changed to Export Capacity	Andy Hood
October 2016	• The document title has been amended so that it applies to "parallel" generation sites only. • Section 2.1 which defines where communication links are required has been amended. • Options for unlicensed radio have been removed • GE D400 and iBox RTUs have been added to Section 4.0 and Appendix A.	Andy Hood
April 2016	• New Document	Ben Godfrey

1.0 INTRODUCTION

1.1 The number of connections being made to 3rd Party Generation Sites is increasing and the way in which the equipment can be controlled and monitored is becoming more and more critical to WPD and other interested parties.

1.2 This document establishes a hierarchy for the connection of generation sites to the WPD telecoms network based on their generation capacity.

2.0 CONDITIONS FOR REQUIRING TELECOMMUNICATIONS LINKS

2.1 A telecommunications link to the WPD network shall be installed where the connection is made at 132kV, EHV (66kV or 33kV) or HV (11kV or 6.6kV) and one, or more, of the following criteria are satisfied:

- The Export Capacity of parallel generation is 500kW, or more
- The Export Capacity is less than 500kW and either:-
    - WPD soft intertrip scheme is installed (see ST:SD10B)
    - WPD active network management (ANM) scheme is installed (see ST:SD10C)
    - WPD timed scheme is installed (See ST:SD10A)

2.2 The requirements for the telecommunications link are detailed in Appendix A.

3.0 CHOICE OF TELECOMMUNICATIONS MEDIUM

3.1 Telecommunications links will be made by SURF telecoms and will be classed as non-contestable with regard to the connection charge.

3.2 At higher capacity connections, the link can be made using either microwave radio or fibre optic cable. The choice of medium in these circumstances will be made by SURF and will be based on the most effective solution taking into account the local availability of communications infrastructure owned by or leased to WPD.

3.3 Scanning radio connections made to smaller capacity sites shall utilise licenced frequencies, taking into account the local availability of infrastructure. Where a scanning radio solution is being considered for connections above 1MW, propagation speeds must form part of the decision.

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4.0 RTUs

4.1 SURF utilise GE D20, D400 or iBox RTUs for these sites. The iBox RTU is much more compact than the D20 and D400 but cannot process as many inputs, outputs and analogues. Given this, the iBox is used at the majority of customer sites whereas D20s or D400s are commonly used at primary substations, BSPs etc.

APPENDIX A

TABLE OF CONNECTION OPTIONS

Export Capacity	SURF RTU*	Communications Link
Over 5,000kW	GE D20, D400 or iBox	Microwave or Fibre Optic based on SURF survey of locally available owned or leased assets
1,000kW to 5,000kW	GE D20, D400 or iBox	Licenced Radio where propagation delays are less than 20 seconds or Microwave or Fibre Optic based on SURF survey of locally available owned or leased assets
500kW to 1,000kW	GE iBox	Licensed Radio
Under 500kW where applicable (see 2.1)	GE iBox	Licensed Radio

* *Note, the SURF RTU may be interfaced with other RTU type equipment or peripherals. For example, where Ringmaster switchgear is used the SURF RTU will be connected to Schneider a T200 or T300 RTU and where a Generator Constraint Panel (GCP) is used to a CG Power RTU*

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APPENDIX B

SUPERSEDED DOCUMENTATION

ST: SD1G issued in April 2016

APPENDIX C

ASSOCIATED DOCUMENTATION

POL: SD10	Managing processes for alternative connections
ST: SD10A	Process for offering a timed connection
ST: SD10B	Process for offering a soft intertrip connection
ST: SD10C	Process for offering an active network management (ANM) connection
ST: TP18A	Application of generator constraint panels
ST: NC1AB	Basis for managing connections that potentially impact on NGET's transmission system

APPENDIX D

KEY WORDS

Active Network management, ANM, Generation, Generator, Constraint, GCP, Telecoms, Radio, RTU, Soft Intertrip.