GC0052 Assigning Detailed Planning Data (DPD) References

What stage is this document at?

01	Workgroup Report
02	Industry Consultation
03	Report to the Authority

This proposal seeks to modify the Grid Code to clarify instances where DPD references do not included a classification of DPD I or DPD II.

This document is open for Industry Consultation. Any interested party is able to make a response in line with the guidance set out in Section 5 of this document.

Published on: **28 July 2014**
Length of Consultation: **20 Working Days**
Responses by: **26 August 2014**

National Grid recommends:
That GC0052 should be implemented as it better facilitates the applicable Grid Code objective (ii).

High Impact:
None identified

Medium Impact:
None identified

Low Impact:
National Grid and new generators looking to connect

Contents

About this document

This Industry Consultation outlines the information required for interested parties to form an understanding of a defect within the Grid Code seeks the views of interested parties in relation to the issues raised by this document.

Parties are requested to respond by **26 August 2014** to grid.code@nationalgrid.com

Document Control

Version	Date	Author	Change Reference
0.1	01 July 2014	National Grid	Draft Industry Consultation
1.0	28 July 2014	National Grid	Final Industry Consultation

Any Questions?

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1 Executive Summary

1.1 This modification aims to clarify references in the Grid Code to Detailed Planning Data (DPD) where it is not specified if this data is classified as DPD I or DPD II.

1.2 DPD is information provided to the National Electricity Transmission System to support a new connection. DPD I is provided within 28 days of making a connection offer and DPD II no later than 2 years to the date of connection (or shorter or longer period as agreed between NGET and the User).

1.3 The modification aims to reduce confusion by adjusting any DPD references that do not include a classification. This change is designed to maintain the current connection arrangements for this data, resulting in minimal change to the connection process.

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2 Why Change?

2.1 In October 2010 a change to the Grid Code was implemented facilitate a change to Detailed Planning Data (DPD) (Grid Code Modification H/09[1]). This change categorised DPD into either DPD I or DPD II.

2.2 This modification aims to clarify the remaining references that are currently lacking a classification. These are minor house keeping errors following the previous modification that have been discovered and need correcting.

Detailed Planning Data

2.3 A party (user) wishing to connect to the National Electricity Transmission System (NETS) is required by the Grid Code Planning Code 4.4.2) to submit planning data to NGET regarding the proposed connection. The submission of this data occurs after the User has accepted the offer for a CUSC contract.

2.4 Detailed Planning Data was separated into DPD I and DPD II following a review. The change reflected the challenges faced by some Users, particularly wind farm developers, to meet this requirement.

2.5 DPD I is provided to NGET within 28 days of making a connection offer (or shorter or longer period as determined or agreed by NGET with the User).

2.6 DPD II is the data provided to NGET no later than 2 years (or such shorter or longer period determined or agreed by NGET with the user) prior to the date on which the connection is complete and ready to start (the Completion Date) as agreed bilaterally between the User and NGET.

Identified Problem

2.7 There are currently several references in the Grid Code that solely categorises data as DPD. For these items it is unclear in what timescale they should be submitted. This has the ability to cause confusion and during the application process and potential delays to a connection, if for example, this item is assumed by the User to be DPD II and by NETS as DPD I

2.8 Clarifying these data items will support the submission of Planning Data in an efficient and timely manner and avoid confusion.

[1] http://www2.nationalgrid.com/UK/Industry-information/Electricity-codes/Grid-code/Modifications/Concluded/2009/

3 Solution

3.1 The alterations made to the DPD references aim to provide clarity on any outstanding references. This will help avoid confusion or misinterpretation of these items during the connection process.

3.2 The change from DPD to either DPD I or DPD II aims to reflect the current way this data is treated and there should therefore be no impact on current or future generator connections.

3.3 The process to establish what these data values should be categorised as, has been to reflect the same classification as any other reference to the same item in the code. If this item has not been otherwise referenced in the code, discussions have occurred to identify how National Grid currently treats this data.

4 Impact & Assessment

Impact on the Grid Code

4.1 GC0052 requires amendments to the following parts of the Grid Code:

- Planning Code
- Data Registration Code

4.2 The text required to give effect to the proposal is contained in Annex 1 of this document.

Impact on National Electricity Transmission System (NETS)

4.3 The proposed changes will ensure clarity during the connection process and facilitate the right information being available at the right time.

Impact on Grid Code Users

4.4 The proposed modification will ensure that new connections will have full clarity on

Impact on Greenhouse Gas emissions

4.5 National Grid has not identified any impacts that the proposed modification will have on Greenhouse Gas emissions.

Assessment against Grid Code Objectives

4.6 National Grid considers that GC0052 would better facilitate the Grid Code objective:

(i) to permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity;

The proposal has a neutral impact on this objective

(ii) to facilitate competition in the generation and supply of electricity (and without limiting the foregoing, to facilitate the national electricity transmission system being made available to persons authorised to supply or generate electricity on terms which neither prevent nor restrict competition in the supply or generation of electricity);

The proposed changes simplify and clarify the data to be provided by a new connection costumer, thus reducing barriers to entry and facilitating competition.

(iii) subject to sub-paragraphs (i) and (ii), to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole; and

The proposal has a neutral impact on this objective

(iv) to efficiently discharge the obligations imposed upon the licensee by this license and to comply with the Electricity Regulation and any relevant legally binding decisions of the European Commission and/or the Agency.

The proposal has a neutral impact on this objective

Impact on core industry documents

4.7 The proposed modification does not impact on any core industry documents

Impact on other industry documents

4.8 The proposed modification does not impact on any other industry documents

Implementation

4.9 National Grid proposes GC0052 should be implemented 10 business days after an Authority decision. Views are invited on this proposed implementation date.

5 Consultation Responses

5.1 Views are invited upon the proposals outlined in this consultation, which should be received by **26 August 2014**.

Your formal responses may be emailed to:

grid.code@nationalgrid.com

5.2 Responses are invited to the following questions:

(i) Are there any additional DPD references that need to be altered?

(ii) Do you support the proposed implementation approach?

5.3 If you wish to submit a confidential response please note the following:

(i) Information provided in response to this consultation will be published on National Grid's website unless the response is clearly marked "Private & Confidential", we will contact you to establish the extent of the confidentiality. A response marked "Private and Confidential" will be disclosed to the Authority in full but, unless agreed otherwise, will not be shared with the Grid Code Review Panel or the industry and may therefore not influence the debate to the same extent as a non confidential response.

(ii) Please note an automatic confidentiality disclaimer generated by your IT System will not in itself, mean that your response is treated as if it had been marked "Private and Confidential".

Annex 1 - Proposed Legal Text

This section contains the proposed legal text to give effect to the proposals. The proposed new text is in red and is based on Grid Code Issue 5 Revision 9.

APPENDIX D - DATA NOT DISCLOSED TO A RELEVANT TRANSMISSION LICENSEE

PC.D.1 Pursuant to PC.3.4, **NGET** will not disclose to a **Relevant Transmission Licensee** data items specified in the below extract:

PC REFERENCE	DATA DESCRIPTION	UNITS	DATA CATEGORY
PC.A.3.2.2 (f) (i)	Performance Chart at **Generating Unit** stator terminals		**SPD**
PC.A.3.2.2 (b)	**Output Usable** (on a monthly basis)	MW	**SPD**
PC.A.5.3.2 (d) Option 1 (iii)	GOVERNOR AND ASSOCIATED PRIME MOVER PARAMETERS Option 1 BOILER & STEAM TURBINE DATA		
	Boiler time constant (Stored **Active Energy**)	S	~~**DPD**~~ **DPD II**
	HP turbine response ratio: (Proportion of **Primary Response** arising from HP turbine)	%	~~**DPD**~~ **DPD II**
	HP turbine response ratio: (Proportion of **High Frequency Response** arising from HP turbine)	%	~~**DPD**~~ **DPD II**
Part of PC.A.5.3.2 (d) Option 2 (i)	Option 2 All **Generating Units** Governor Deadband		
	- Maximum Setting	±Hz	~~**DPD**~~ **DPD II**
	- Normal Setting	±Hz	~~**DPD**~~ **DPD II**
	- Minimum Setting	±Hz	~~**DPD**~~ **DPD II**
Part of PC.A.5.3.2 (d) Option 2 (ii)	**Steam Units**		
	Reheater Time Constant	sec	~~**DPD**~~ **DPD II**

PC REFERENCE	DATA DESCRIPTION	UNITS	DATA CATEGORY
	Boiler Time Constant	sec	~~DPD~~ **DPD II**
	HP Power Fraction	%	~~DPD~~ **DPD II**
	IP Power Fraction	%	~~DPD~~ **DPD II**
Part of PC.A.5.3.2 (d) Option 2 (iii)	**Gas Turbine Units** Waste Heat Recovery Boiler Time Constant		
Part of PC.A.5.3.2 (e)	UNIT CONTROL OPTIONS		
	Maximum droop	%	~~DPD~~ **DPD II**
	Minimum droop	%	~~DPD~~ **DPD II**
	Maximum frequency deadband	±Hz	~~DPD~~ **DPD II**
	Normal frequency deadband	±Hz	~~DPD~~ **DPD II**
	Minimum frequency deadband	±Hz	~~DPD~~ **DPD II**
	Maximum Output deadband	±MW	~~DPD~~ **DPD II**
	Normal Output deadband	±MW	~~DPD~~ **DPD II**
	Minimum Output deadband	±MW	~~DPD~~ **DPD II**
	Frequency settings between which Unit Load Controller droop applies:		
	Maximum	Hz	~~DPD~~ **DPD II**
	Normal	Hz	~~DPD~~ **DPD II**
	Minimum	Hz	~~DPD~~ **DPD II**
	Sustained response normally selected	Yes/No	~~DPD~~ **DPD II**

PC REFERENCE	DATA DESCRIPTION	UNITS	DATA CATEGORY
PC.A.3.2.2 (f) (ii)	Performance Chart of a **Power Park Modules** at the connection point		**SPD**
PC.A.3.2.2 (b)	**Output Usable** (on a monthly basis)	MW	**SPD**
PC.A.3.2.2 (e) and (j)	**DC CONVERTER STATION** DATA **ACTIVE POWER** TRANSFER CAPABILITY (PC.A.3.2.2)		
	Import MW available in excess of **Registered Import Capacity**.	MW	**SPD**
	Time duration for which MW in excess of **Registered Import Capacity** is available	Min	**SPD**
	Export MW available in excess of **Registered Capacity**.	MW	**SPD**
	Time duration for which MW in excess of **Registered Capacity** is available	Min	**SPD**
Part of PC.A.5.4.3.3	LOADING PARAMETERS		
	MW Export		
	Nominal loading rate	MW/s	~~**DPD**~~ **DPD I**
	Maximum (emergency) loading rate	MW/s	~~**DPD**~~ **DPD I**
	MW Import		
	Nominal loading rate	MW/s	~~**DPD**~~ **DPD I**
	Maximum (emergency) loading rate	MW/s	~~**DPD**~~ **DPD I**

SCHEDULE 1 - GENERATING UNIT (OR CCGT MODULE), POWER PARK MODULE AND DC CONVERTER TECHNICAL DATA
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DATA DESCRIPTION	UNITS	DATA to **RTL**		DATA CAT.	**GENERATING UNIT** (OR CCGT MODULE, AS THE CASE MAY BE)						
		CUSC Contract	CUSC App. Form		G1	G2	G3	G4	G5	G6	STN
Rated MVA *(PC.A.3.3.1)*	MVA	□	■	**SPD+**							
Rated MW *(PC.A.3.3.1)*	MW	□	■	**SPD+**							
Rated terminal voltage *(PC.A.5.3.2.(a) & PC.A.5.4.2 (b))*	kV	□		~~**DPD**~~ **DPD I**							
*Performance Chart at **Onshore Synchronous Generating Unit** stator terminals *(PC.A.3.2.2(f)(i))*				**SPD**	(see **OC2** for specification)						
* Performance Chart of the **Offshore Synchronous Generating Unit** at the **Offshore Grid Entry Point** *(PC.A.3.2.2(f)(ii))*											
***Output Usable** (on a monthly basis) *(PC.A.3.2.2(b))*	MW			**SPD**	(except in relation to **CCGT Modules** when required on a unit basis under the **Grid Code**, this data item may be supplied under Schedule 3)						
Turbo-Generator inertia constant (for synchronous machines) *(PC.A.5.3.2(a))*	MW secs /MVA	□	■	**SPD+**							
Short circuit ratio (synchronous machines) *(PC.A.5.3.2(a))*		□	■	**SPD+**							
Normal auxiliary load supplied by the **Generating Unit** at rated MW output *(PC.A.5.2.1)*	MW MVAr	□ □		**DPD II** **DPD II**							
Rated field current at rated MW and MVAr output and at rated terminal voltage *(PC.A.5.3.2 (a))*	A	□		**DPD II**							

Field current open circuit saturation curve (as derived from appropriate manufacturers' test certificates): (*PC.A.5.3.2 (a)*)	A	□		**DPD II**							
120% rated terminal volts	A	□		**DPD II**							
110% rated terminal volts	A	□		**DPD II**							
100% rated terminal volts	A	□		**DPD II**							
90% rated terminal volts	A	□		**DPD II**							
80% rated terminal volts	A	□		**DPD II**							
70% rated terminal volts	A	□		**DPD II**							
60% rated terminal volts	A	□		**DPD II**							
50% rated terminal volts											
IMPEDANCES:											
(Unsaturated)											
Direct axis synchronous reactance *(PC.A.5.3.2(a))*	% on MVA	□		**DPD I**							
Direct axis transient reactance *(PC.A.3.3.1(a)& PC.A.5.3.2(a)*	% on MVA	□	■	**SPD+**							
Direct axis sub-transient reactance *(PC.A.5.3.2(a))*	% on MVA	□		**DPD I**							
Quad axis synch reactance *(PC.A.5.3.2(a))*	% on MVA	□		**DPD I**							
Quad axis sub-transient reactance *(PC.A.5.3.2(a))*	% on MVA	□		**DPD I**							
Stator leakage reactance *(PC.A.5.3.2(a))*	% on MVA	□		**DPD I**							
Armature winding direct current resistance. *(PC.A.5.3.2(a))*	% on MVA	□		**DPD I**							
In Scotland, negative sequence resistance *(PC.A.2.5.6 (a) (iv)*	% on MVA	□		**DPD I**							

Note:- the above data item relating to armature winding direct-current resistance need only be provided by **Generators** in relation to **Generating Units** commissioned after 1st March 1996 and in cases where, for whatever reason, the **Generator** is aware of the value of the data item.

SCHEDULE 2 - GENERATION PLANNING PARAMETERS
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DATA DESCRIPTION	UNITS	DATA to **RTL** CUSC Contract	DATA to **RTL** CUSC App. Form	DATA CAT.	**GENSET** OR STATION DATA G1	G2	G3	G4	G5	G6	STN
Synchronising Generation (SYG) after 48 hour **Shutdown** *PC.A.5.3.2(f) & OC2.4.2.1(a)*	MW	■		**DPD II & OC2**							-
De-Synchronising Intervals (Single value) *OC2.4.2.1(a)*	Mins	■		**OC2**	-	-	-	-	-	-	
RUNNING AND **SHUTDOWN** PERIOD LIMITATIONS:											
Minimum Non Zero time (MNZT) after 48 hour **Shutdown** *OC2.4.2.1(a)*	Mins	■		**OC2**							
Minimum Zero time (MZT) *OC2.4.2.1(a)*	Mins			**OC2**							
Existing AGR Plant Flexibility Limit (**Existing AGR Plant** only)	No.			**OC2**							
80% Reactor Thermal Power (expressed as Gross-Net MW) (**Existing AGR Plant** only)	MW			**OC2**							
Frequency Sensitive AGR Unit Limit (**Frequency Sensitive AGR Units** only)	No.			**OC2**							
RUN-UP PARAMETERS *PC.A.5.3.2(f) & OC2.4.2.1(a)*											
Run-up rates (RUR) after 48 hour **Shutdown**: (See note 2 page 3)	(Note that for DPD only a single value of run-up rate from Synch Gen to Registered Capacity is required)										
MW Level 1 (MWL1)	MW	■		**OC2**							-
MW Level 2 (MWL2)	MW	■		**OC2**							-
RUR from Synch. Gen to MWL1	MW/Mins	■		~~**DPD**~~ **DPD II & OC2**							
RUR from MWL1 to MWL2	MW/Mins	■		**OC2**							
RUR from MWL2 to RC	MW/Mins	■		**OC2**							

Run-Down Rates (RDR):	(Note that for DPD only a single value of run-down rate from Registered Capacity to de-synch is required)										
MWL2	MW	■		**OC2**							
RDR from RC to MWL2	MW/Min	■		**DPD II**							
				OC2							
MWL1	MW	■		**OC2**							
RDR from MWL2 to MWL1	MW/Min	■		**OC2**							
RDR from MWL1 to de-synch	MW/Min	■		**OC2**							

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