

Compliance Statement

Test Limited Generator transmission connected in NGC transmission area

**Completion Date on
31/10/2015**

**Connection Voltage = 400kV, Registered
Capacity = 100MW,**

Key to Evidence Requested

Generation Type : Synchronous Plant

- 'DS' Indicates that NGET would expect to see the results of a Dynamic Simulation study.
- 'G' Manufacturer's generic data or test results, as appropriate.
- 'D' Copies of correspondence or other documents confirming that a requirement has been met (e.g. copy of letter from NGET confirming receipt of Safety Rules)
- 'O' Indicates that NGET would expect to be provided with the currently applied operating settings.

- 'S' Indicates that NGET would expect to see the results of a Simulation study (not necessarily, but not excluding, dynamic simulation).
- 'P' Generating Unit design data.
- 'T' Indicates that NGET would expect to see results of, and/or witness, tests or monitoring which demonstrates compliance. Where possible, the test is referenced to the relevant section of this guidance document.
- 'TV' Indicates type validation test (if Generator pursues this compliance option)

**Key to Compliance: Y = Yes (Compliant), N = No (Non Compliant)
or Q = Query**

Updated to Grid Code Issue 5 Revision 14 - 27 August 2015

REQUIREMENT					RESPONSE	
Connection Condition	Compliance Requirement of User	Evidence Requested	Lead Role	UDFS Ref	Compliance Y, N or Q	User's Statement
CC.5.2	Please confirm that the following information has been submitted to					

NGET:						
(a) Updated Planning Code Data, with any estimated values replaced by validated plant data;	P, G, D	SO	2.1 3.1-3.4 4			
(b) Details of Protection arrangements and settings (see CC.6.2);	P	TO	2.1.2			
(c) Copies of Safety Rules and Local Safety Instructions (see CC.7.2.6) applicable at the User Site;	D	TO	1.2, 1.9			
(d) Information to enable NGET to prepare Site Responsibility Schedules	D	TO	1.5			
(e) An Operation Diagram for all HV Apparatus on User side of Connection Point (see CC.7);	D	TO	1.6			
(f) The proposed Name of the User Site;	D	SO/T O	2.1			
(g) written confirmation that Safety Coordinators are authorised and competent pursuant to OC8;	D	TO	1.9			
(h) RISSP prefixes, pursuant to requirements of OC8;	D	TO	1.5			
(i) A list of telephone numbers for Joint System Incidents;	D	SO	1.10			
(j) List of managers authorised to sign Site Responsibility Schedules;	D	TO	1.5			

	(k) Information to enable NGET to prepare Site Common Drawings (see CC.7);	D	TO	1.7		
	(l) A list of telephone numbers of Fax machines (see CC.6.5.9);	D	SO	1.8		
CC.6.1.3	Grid Frequency Variation					
	Confirm that the plant and apparatus is operational within the following ranges:		SO			
	51.5Hz-52Hz Operation for at least 15 minutes	P, G				
	51Hz-51.5Hz Operation for at least 90 minutes	P, G				
	49Hz-51Hz Continuous operation	P, G				
	47.5Hz-49Hz Operation for at least 90 minutes	P, G				
	47Hz-47.5Hz Operation for at least 20 seconds	P, G				
CC6.1.5	Voltage Waveform Quality					
	(a) Harmonics					

	<p>Where applicable confirm that harmonic current injection data has been provided to the System operator for the attention of the Transmission Owner as specified in Grid Code DRC.6.1.1.</p> <p>Confirm that the specified harmonic limits in G5/4 will be complied with.</p> <p>Where applicable confirm that adequate provisions have been provided for monitoring compliance with the above limits as specified in G5/4</p> <p>(b) Phase Unbalance</p> <p>Confirm that all Plant and Apparatus can withstand 2% Phase (Voltage) Unbalance as specified in Grid Code CC.6.1.5(b) and CC.6.1.6.or the voltage phase unbalance defined in relevant bilateral agreements.</p>	P	TO	2.8		
		D	TO	2.8		
		D	TO	2.8		
		D	TO	2.8		
CC.6.1.7	<p>Voltage Fluctuations:</p> <p>Confirm that voltage fluctuation data has been provided to the System operator for the attention of the Transmission Owner as specified in</p>	P	TO	2.8		

	Grid Code DRC.6.1.1.					
	(a) Confirm voltage level step change limits as specified will be complied with.	D				
		D	TO	2.8		
	(b) Confirm Flicker Severity, for voltages above 132kV; (Short Term) < 0.8 Unit and Flicker Severity (Long Term) < 0.6 Unit, for voltages 132kV and below; (Short Term) < 1 Unit and Flicker Severity (Long Term) < 0.8 Unit	D	TO	2.8		
CC.6.2.1.1	Earth Fault Factor:					
(b)	Confirm that the plant can withstand a phase voltage falling to zero or rising to 140% nominal phase-to-earth voltage during a single- or two phase-to-earth fault on the National Electricity Transmission System.	P, G	TO	1.4		
		P, G	TO	1.4		

CC.6.2.1.2	Substation Plant and Apparatus:					
(a) - (d)	Confirm that the plant and apparatus within the Transmission Licensee's Transmission busbar protection zone complies with the appropriate technical specifications	D	TO	2.1		
(e)	Confirm that the circuit breaker can withstand the short circuit current at the Connection Point published in the Seven Year Statement for future years	P, G	TO	2.1		
CC.6.2.2.2	Fault Clearance Times:					
(a)	Confirm that the fault clearance time, for faults on the User's equipment directly connected to the National Electricity Transmission System, and for faults on the National Electricity Transmission System directly connected to the User's equipment, is less than or equal to the time specified in the Bilateral Agreement.	P, G, D	TO	2.1.2		

	State the fault clearance time.					
	State the probability of fault clearance within the maximum time specified in the Bilateral Agreement	P, G, D	TO	2.1.2		
(b)	Confirm the number of Main Protections provided	P, D	TO	2.1.2		
	Confirm that back-up protection is installed.					
	For systems with only one Main Protection, confirm that the back-up fault clearance time for faults on the HV Connections, at the minimum infeed for normal operation is less than 300ms. The minimum HV system fault infeed will be provided by NGET.	P, G, D	TO	2.1.2		

	For systems with two Main Protection, confirm that the back-up fault clearance time for faults on the HV Connections, at the minimum infeed for normal operation is less than 800ms. The minimum HV system fault infeed will be provided by NGET.	P, G, D	TO	2.1.2	
	Confirm the required Discrimination of back-up protection	P, G, D	TO	2.1.2	
(c)	Confirm the provision of circuit breaker fail protection on the circuit breaker connecting the Generator to the National Electricity Transmission System (the 'connecting circuit breaker').	P, G, D	TO	2.1.2	
	Confirm that this protection will initiate tripping of all necessary circuit breakers within 200 ms of the end of the Fault Current Interruption time if the 'connecting circuit breaker' fails to clear a fault.	P, G, D	TO	2.1.2	
(d)	Confirm the System Fault Dependability Index for the User's protection system as a whole is not less than 99%	P, G, D	TO	2.1.2	

CC.6.2.2.3 .1	Protection of Interconnecting Connectors: Confirm the provision of Protection equipment for interconnecting connections, as specified in the Bilateral Agreement.	D	TO	2.2.2		
CC.6.2.2.3 .2	Circuit-breaker Fail Protection Confirm the provision of circuit-breaker fail protection as specified in the Bilateral Agreement. If the Generator includes pressurised head air-blast circuit breakers, confirm that a back-trip signal is provided in the event of loss of air from these circuit breakers.	P, D P, D	TO TO	2.1.2 2.1.2		
CC.6.2.2.3 .3	Loss of Excitation					

	Confirm that protection exists to detect the loss of excitation of a Generating Unit and Initiate tripping	P, D	TO	2.1.2		
CC.6.2.2.3 .4	<p>Pole-Slipping Protection</p> <p>If Specified as a requirement in the Bilateral Agreement, confirm that Pole Slipping Protection has been fitted. If intention is to fit Pole Slip Protection though not specified then details of the protection system and the proposed setting must be provided to NGET</p> <p>Confirm the design and setting of any Pole Slip Protection have been accepted by NGET</p>	P, D	SO	3.5		
CC.6.2.2.3 .5	<p>Signals for Tariff Metering:</p> <p>Confirm the provision of current and voltage transformers providing signals for tariff metering at a</p>	D	SO	2.5		

	voltage specified in the Bilateral Agreement					
CC.6.2.2.4	Work on Protection Equipment Confirm that appropriate working procedures have been set up and agreed with National Grid.	D	SO	2.1.2		
CC.6.2.2.5	Relay Settings: Confirm that Protection and relay settings across the Connection Point (or Interface Point in relation to OTSDUW Plant and equipment) are in accordance with the Bilateral Agreement.	D	TO	2.1.2		
CC.6.3.2	Reactive Power:					

Confirm all Synchronous Generating Units are capable of supplying Rated MW at any point between the limits 0.85 Lagging and 0.95 Leading Power Factor	T	SO	3.6.1	
Measuring the active and reactive power at the unit terminals, carry out Reactive Capability testing	T	SO	3.7.2	
State the short circuit ratio of each unit and confirm the SCR is above 0.5 for Units rated < 1600MVA and above 0.4 for Units >1600MVA. Include Open and Short circuit saturation curves which confirm the SCR figures	P, G, T	SO	3.7.2	

CC.6.3.3	Power Output/Frequency Characteristic:					
(a)	Confirm that Active Power output is independent of system frequency for frequency changes within the range 49.5 to 50.5 Hz.	P, G	SO	3.1.2		
(b)	Confirm that Active Power output can be maintained at a level not lower than in Figure 2 for System Frequency changes within the range 49.5 to 47 Hz. In the case of a CCGT Module, the requirement shall be retained down to the Low Frequency Relay trip setting of 48.8 Hz.	P, G, T				
OC.5.5.4	Confirm tha for variations in System Frequency exceeding 0.1Hz within a period of less than 10 seconds, the Active Power output is within $\pm 0.2\%$ of the requirements of CC.6.3.3 when monitored at prevailing external air temperatures of up to 25°C.	P				

CC.6.3.4	Voltage Range:				
	Confirm that Active Power is not affected by voltage changes in the normal operating range specified in paragraph CC.6.1.4 by more than the change in Active Power losses at reduced or increased voltage	P, G	SO	3.7.2	
	Confirm the maximum leading and lagging reactive power capabilities of CC.6.3.2 can be met for the full range of voltage variation required by CC.6.3.4. Demonstrate by carrying out a Simulation Study as per CP.A.3.3 to demonstrate that the requirements of CC.6.3.4 can be met.	P, G, S	SO	3.7.2	
	In the case of an Offshore Generating Unit/Power Park Module/DC Converter Station where CC.6.3.2.e iii applies Confirm that the reactive capability required by the Bilateral Agreement at the Grid Entry Point under steady state conditions shall be fully available when the voltage at the Interface point varies by +-5%. Demonstrate	P, G, S	SO	3.7.2	

	by carrying out a Simulation Study as per CP.A.3.3 to demonstrate that the requirements of CC.6.3.4 can be met.					
CC.6.3.5	Black Start: See Bilateral Agreement to see if Black Start capability is required					

	If applicable, provide a detailed technical statement of how the facility will be provided.					
CC.6.3.6	Control Arrangements (general):					
(a)	Frequency Control (if required): Confirm that the requirement for frequency control can be met by continuous modulation of Active Power supplied to the NETS	G, P	SO	3.1.2/3.6.3		
(b)	Voltage Control (if required): Confirm that the requirement for voltage control can be met by continuous changes to reactive power output	G, P	SO	3.1.2/3.6.2		
CC.6.3.7	Frequency Control:					
(a)	Confirm that the Power Park Module, DC Converter or Generating Unit is fitted with a fast-acting proportional frequency control device and unit load controller or equivalent control device to provide	P, G T	SO	3.1.2		

	frequency response under normal operating conditions					
	State the European Specification, or other standard, to which the frequency control device is manufactured.	P, G				
(b)	Confirm that the frequency control device (or speed governor) in coordination with other control devices, control the Power Park Module, DC Converter or Generating Unit active power output with stability over the entire operating range of the Generating Unit	P, G, T				
	Carry out frequency response compliance tests	T	SO	3.6.3		
	Provide Results of the tests	T	SO	3.6.3		
(c)	Confirm that time series simulation study results, as per CP.A.3.6, which demonstrate the capability to CC.6.3.7 (c)(i) have been submitted	S	SO	3.6.5 3.7.5		

	in the form of a report					
	Confirm that the Power Park Module, DC Converter or Generating Unit will control frequency whilst below 52Hz when isolated from the rest of the Total system but still supplying customers unless this causes operation below DMOL	P, G	SO	3.6.3		
	Confirm the frequency control device (or speed governor) can be set with an fixed speed droop between 3% and 5%	P, G	SO	3.6.3		
	Confirm the frequency control device (or speed governor) deadband is no greater than 0.03Hz	P, G	SO	3.6.3		
	Carry out frequency response compliance tests	T	SO	3.6.3		
	Provide Results of the tests	T	SO	3.6.3		

BC.3.7.1 / BC.3.7.2	(d)	Confirm the existence of a target frequency setting facility. State whether it is (a) continuous or (b) stepped.	P, G	SO	3.1.2		
		Confirm the setting range covers at least 50 ±0.1Hz	P, G				
	(e)	Confirm in accordance with Appendix 3;					
		Confirm that:		SO	3.6.3		
		(i) Active Power output remains constant up to 50.4Hz	G, P				
		(ii) Above 50.4Hz, active power is reduced, by at least 2% for each 0.1Hz difference between the frequency signal and 50.4Hz	G, P				
		Carry out frequency response compliance tests	T	SO	3.6.3		
		Provide Results of the tests	T	SO	3.6.3		

CC.A.3.2	Confirm the Minimum Generation is not more than 65% of the Registered Capacity	P, G	SO	3.6.3		
	Confirm that the Design Minimum Operating Level is not more than 55% of the Registered Capacity	P, G	SO	3.6.3		
	CC.A.3.3 / CC.A.3.4 i) Active Power Responses to 0.5Hz frequency changes at each operating level are not less than the minimum requirements set out in CC.A.3.3 and Fig CC.A.3.1	T	SO	3.6.3		
	(ii) Active Power response to frequency changes of less than 0.5Hz are linearly proportional to the 0.5Hz response. E.g. 0.2Hz change should be 40% of the 0.5Hz response	T	SO	3.6.3		
	(iii) Active Power response to frequency changes greater than 0.5Hz are at least equivalent to the 0.5Hz response	T	SO	3.6.3		
	Provide Test results of the tests	T	SO	3.6.3		

CC.A.3.5	Confirm that the full response capability of the Power Park Module, DC Converter or Generating Unit can be restored within 20 minutes following a frequency disturbance	P, G, S, T				
CC.6.3.8	Voltage Control: Confirm that each Generating Unit has been fitted with a continuously acting automatic excitation control facility to control terminal voltage without instability over the entire operating range.	P	SO	3.6.2		
CC.A.6.2.1	Confirm the existence of an Exciter, Power System Stabiliser and Automatic Voltage Regulator	P	SO	3.6.2		
CC.A.6.2.3.1	Confirm the AVR has a static zero frequency gain and that the terminal voltage does not drop by more than 0.5% of rated terminal voltage, with the Generating Unit changing from		SO	3.7.3 / 3.6.2		

	zero to rated MVA at rated V / P / F					
CC.A.6.2.4 .1	Confirm that with the Generating Unit in Open Circuit that for a 90% to 100% step change in nominal terminal voltage that the Excitation System has a damped oscillatory characteristic.	T	SO	3.7.3		
	Confirm that the time to reach 100% shall be less than 0.6 seconds and has settled to within 5% of the voltage change within 3 seconds	T	SO	3.7.3		
CC.A.6.2.4 .2	Confirm the AVR is capable of providing for large voltage disturbance the upper and lower ceiling voltages in a time not exceeding the specified amount of time in the Bilateral Agreement (Usually between 50-300ms)	S,P	SO	3.1.2		
CC.A.6.2.4 .3	Confirm the Exciter on-load ceiling field voltage capability, this is not to be less than the value specified in the Bilateral Agreement (typically 2-3pu of rated field voltage) when	P	SO	3.1.2		

CC.A.6.2.4 .4	responding to a $\geq 10\%$ terminal voltage drop					
	If a static Exciter is employed					
	i) Confirm the field voltage can attain a negative ceiling level not less than the specified in the Bilateral Agreement after the removal of a 10% voltage drop	P	SO	3.7.3		
	ii) Confirm the Exciter capability to free fire at depressed terminal voltage e.g. 20-30% of rated terminal voltage	P	SO	3.7.3		
	iii) Confirm Exciter is capable of attaining a positive ceiling voltage not less than 80% of the Excitation System On Load Positive Ceiling Voltage upon recovery of terminal voltage to 80% of rated terminal voltage following fault clearance.	P	SO	3.7.3		
	iv) Confirm the installation of a separately powered Exciter if the Bilateral Agreement specified the requirement	P	SO	3.7.3		

CC.A.6.2.5 .3	Confirm the operation of the supplementary control for the PSS only relates to signal changes and not steady state operation - see CC.A.6.2.5.3 for given example	P	SO	3.1.2		
CC.A.6.2.5 .4	Confirm the PSS output signal is less than +/-10% of the terminal voltage signal at the AVR input	P	SO	3.1.2		
	Confirm that if the gain of the PSS is increased by a factor of 3 that there would be no instability	DS,T	SO	3.7.3 / 3.6.2		
CC.A.6.2.5 .5 / 6.1	Confirm that the PSS and the Overall Excitation System has bandwidth between 0-5Hz	P	SO	3.7.3 / 3.6.2		
CC.A.6.2.5 .6	Confirm the PSS setting have been agreed with National Grid	D				
	Confirm that a report has been submitted to National Grid containing:	DS				
	i) Excitation Model including PSS setting		SO	3.7.3 / 3.1.3		

CC.A.6.2.6 .2	ii) On-load time series simulations with and without PSS on, injecting 2 and 10% steps in the Voltage Reference and 3 phase short circuit fault (HV side of the Generator unit transformer for 100ms) - results should show field voltage, terminal voltage, PSS output, active power output & reactive power output		SO	3.7.3		
	iii) Gain and phase Bode diagrams for open loop frequency domain response of the Excitation System with and without PSS in a format to allow assessment of the phase contribution of the PSS and the gain and phase margin of the Excitation System with the PSS		SO	3.7.3		
	Confirm the Excitation System has adequate damping by injecting step signal disturbances into the AVR reference whilst operating at points specified by NGET (up to rated MVA output) - damping shall be judged to be adequate if the corresponding Active Power response to the disturbances decays within two cycles of oscillation.	T	SO	3.6.2		

CC.A.6.2.6 .3	Confirm that a random noise (200mHz-3Hz band) will be injected into the AVR with the Generator at points specified by National Grid.	O	SO	3.6.2		
CC.A.6.2.6 .3	Confirm sufficient frequency domain tuning of PSS has been demonstrated at operating at points specified by NGET (up to rated MVA output) by injecting a 0.2Hz-3Hz band limited random noise signal into the AVR. The tuning of the PSS shall be judged to be adequate if the corresponding Active Power response shows improved damping with the PSS in combination with the AVR compared with the AVR alone over the frequency range 0.3Hz – 2Hz.	P,T	SO	3.6.2		
CC.A.6.2.7 .1	Confirm the existence of a Under Excitation Limited that operates automatically to ensures the synchronous stability of the plant	P	SO	3.6.2		

CC.A.6.2.7 .2	Confirm that the performance of the Under Excitation Limiter is independent of the Generator load by injecting a 2% step decrease into the AVR when the Generator is operating just above the Limit Line. Ensure that the max overshoot is no more 4% of the Generator rated MVA and the return to the Steady State at the Limit Line is within 5 seconds.	P,T	SO	3.6.2		
	Confirm that when the injection is removed the field voltage responds immediately and isn't held down by the UEL, this operation shall ensure that any resultant oscillations are damped so that the disturbance is within 0.5% of the Generator MVA rating within 5 seconds	P,T	SO	3.6.2		
CC.A.6.2.7 .3	Confirm that the Generator will not reduce excitation to level that would endanger synchronous stability when the Excitation System is in manual	P, O	SO	3.6.2		

CC.A.6.2.8 .1	Confirm that the Over Excitation Limiter does not restrict the generator excitation to less than the maximum design level of the Generator. If the Generator excitation is reduced following a period of operation at a high level, the rate of reduction shall not exceed that required to remain within any time dependent operating characteristics of the Generating Unit.	P,T	SO	3.7.3 / 3.6.2		
CC.A.6.2.8 .2	Confirm the performance of the Over-Excitation Limiter by injecting a % step increase into the AVR when the Generator is just off the Over - Excitation Limiter - the size of the step will be determined by the minimum value necessary to operate the Over-Excitation Limiter and will be agreed by NGET and the Generator.	P,T	SO	3.6.2		
CC.A.6.2.8 .3	Confirm that there is provision to prevent any restriction of Generator Excitation with the Excitation System in manual other than to ensure operation is within design limits.	P	SO	3.1.2		

CC.6.3.9	<p>Steady State Load Inaccuracies</p> <p>State the standard deviation of Load error for the Generating Unit over a 30 minute period, assuming constant mechanical power input.</p> <p>Confirm that this standard deviation is no more than 2.5% of the Registered Capacity.</p>		SO	3.1.2		
CC.6.3.10	<p>Negative Phase System Loadings:</p> <p>Confirm each synchronous generator unit can withstand, without tripping, the negative sequence loading incurred by clearance of a close up phase to phase fault, by system backup protection on the National Electricity Transmission System or User System if Embedded.</p>	G, D	SO			
CC.6.3.11	Neutral Earthing:					

	<p>Transmission-connected Generators at 132kV or higher voltage</p> <p>Confirm that the HV winding of each transformer) connecting the Generator to the System is star connected and that the star point is suitable for connection to earth.</p> <p>Confirm that the earthing and lower voltage winding arrangements are such as to ensure that the Earth Fault Factor requirement of CC.6.2.1.1 (b) will be met.</p>	<p>P, D</p> <p>P, D</p>	<p>TO</p>	<p>1.4 2.1.1</p>		
CC.6.3.12	<p>Frequency-Sensitive Relays:</p> <p>Confirm the existence, or otherwise, of any frequency-level and/or rate-of-change-of-frequency relays.</p> <p>Either</p> <p>Confirm that any such frequency-sensitive relays are set to operate outside the frequency ranges specified in CC.6.1.3.</p>	<p>P, G</p> <p>P, G</p>				

	<p>State the settings, tolerance and any time delay</p> <p>O</p> <p>Or</p> <p>Confirm that any such frequency-sensitive relays are set in accordance with the Bilateral Agreement.</p> <p>P, G</p> <p>State the settings, tolerance and any time delay</p> <p>O</p>					
CC.6.3.13	<p>Frequency Excursions outside 47 – 52 Hz:</p> <p>Confirm acceptance of responsibility for protecting the Power Park Module, DC Converter, Generating Unit or OTSDUW plant and apparatus, their constituent elements and other components in the event of a frequency excursion outside the range 47 – 52 Hz</p>	D	SO	2.1.2		

CC.6.3.14	Fast-Start: If Bilateral Agreement request a Fast Start Capability, confirm the capability has been provided					
CC.6.3.15.1 (a)	Fault ride-through: Confirm that each Generating Unit shall remain transiently stable and connected to the system without tripping for short circuit faults on the Onshore Transmission System at Supergrid Voltage up to 140ms in duration					

CC.6.3.15. 1 (b)	<p>Fault ride-through:</p> <p>Confirm that each Generating Unit shall remain transiently stable and connected to the system without tripping for short circuit faults on the Onshore Transmission System at Supergrid Voltage greater than 140ms in duration</p>					

[illegible]

CC.6.5.4	Control Telephony & System Telephony: Confirm that control telephony or system telephony is provided and installed in accordance with the Bilateral Agreement	D	SO/ TO	1.8		
CC.6.5.6	Operational Metering Confirm that Operational Metering is provided and installed in accordance with the Bilateral Agreement	D	TO	2.4		

CC.6.5.8	<p>Electronic Data Communication (EDT and EDL) Facilities:</p> <p>If the User is a BM Participant</p> <p>(a) Confirm that electronic data transmission (EDT) facilities have been provided and installed to permit submission of data</p> <p>(b) Confirm that electronic data logging (EDL) facilities are installed at the control Point of the BMU units to submit data to and receive notifications from NGET.</p>	D	SO	2.6		
CC.6.5.9	<p>Facsimile Machines:</p> <p>(a) Confirm the provision of facsimile machines at the Control Point, and at the Trading Point. Confirm NGET have received the Facsimile telephone number. Not applicable to the control point of the OTSDUW plant and apparatus.</p>	P	SO	1.10/1.1 1		
CC.6.5.10	Busbar Voltage					

	Confirm provision of appropriate voltage signals at each Grid Entry Point to facilitate synchronisation to NETS	D	SO	2.7		
CC.6.6.1	<p>System Monitoring:</p> <p>If a requirement for System Monitoring has been agreed with NGET:</p> <p>Confirm the provision of signals from the Generator for system monitoring, and space for system monitoring equipment.</p>	P	SO	2.7		
CC.6.6.2	<p>Test Signals:</p> <p>Confirm the provision of test signals as outlined in OC5.A.1 for site monitoring by NGET of witnessed tests</p> <p>Confirm that signals provided for onsite monitoring by NGET are of the following resolution, unless</p>	<p>D</p> <p>D</p>	<p>SO</p> <p>SO</p>	<p>3.6</p> <p>3.6</p>		

	<p>otherwise agreed by NGET;</p> <p>(i) 1Hz for reactive range tests (ii) 10Hz for frequency control tests (iii) 100Hz for voltage control tests</p> <p>Confirm that signals provided for onsite monitoring by NGET are within the voltage range of +/- 10Vdc</p>	D	SO	3.6		
CC.7.2.6	<p>Safety Rules I:</p> <p>Confirm that you have received copies of RTL Safety Rules that will apply to your staff working on the connection site.</p>	D	TO	1.2		
CC.7.2.7	<p>Safety Rules II:</p> <p>Confirm that the Site Responsibility Schedule submitted under CC.7.3.1 and CC.7.3.2 records the Safety Rules that apply to each item of Plant and/or Apparatus</p>	D	TO	1.2		

CC.7.3.1, CC.7.3.2	<p>Site Responsibility Schedule:</p> <p>Confirm the Site Responsibility Schedules have:</p> <p>(i) been prepared in accordance with Appendix CCA.1 of the Grid Code, and</p> <p>(ii) been provided to RTL & Users with whom they interface</p>	D	TO	1.5		
CC.7.4.1 – CC.7.4.3, CC.7.4.7, CC7.4.8	<p>Operation Diagram:</p> <p>Confirm the preparation and provision of an Operations Diagram in accordance with the requirements of CC.7.4.2, CC.7.4.7 and CC.7.4.8.</p> <p>Confirm the diagram uses the</p>	D	TO	1.6		

	<p>symbols shown in Appendix 2 Part 1A of the Connection Conditions</p> <p>The diagram should include the apparatus, and follow the principles, set out in Appendix 2 Part 2 of the Connection Conditions.</p>					
CC.7.4.4 – CC.7.4.6, CC.7.4.9	<p>Gas Zone Diagram: (where applicable)</p> <p>Confirm the preparation and provision of a Gas Zone Diagram in accordance with the requirements of CC.7.4.4 - CC.7.4.6 and CC.7.4.9.</p> <p>Confirm the diagram uses the symbols shown in Appendix 2 Part 1B of the Connection Conditions</p> <p>The diagram should follow the basic principles set out in Appendix 2 Part 2 of the Connection Conditions.</p>	D	TO	1.6		

CC.7.5	<p>Site Common Drawings:</p> <p>Confirm arrangement and provision of site common drawings</p> <p>Confirm a copy of the drawings has been included in the UDL</p>	D	TO	1.6		
CC.7.6	<p>Access:</p> <p>Confirm that arrangements for access to the connection site have been agreed with RTL and recorded in the Interface Agreement</p>	D	TO	1.1		
CC.7.7	<p>Maintenance Standards:</p> <p>User to confirm that all plant and apparatus is tested and maintained adequately for the purpose for which it is intended</p>	D	SO/T O	1.3		

CC.7.9	Control Point:					
	Confirm the provision of a Control Point for the Power Station and state its location.	D	SO	1.11		
	Confirm that the Control Point will be continuously manned.	D	SO	1.11		
	Confirm that the Control Point is able to receive and act upon instructions at all times the power station is generating or able to generate.	D	SO	1.11		
CC.6.5.4.5 CC.6.5.5.2	Confirm that System Telephony is dedicated to National Grid and shall only be used for the purposes of operational voice communication between NGET and the relevant User. (Only applies where System Telephony has been specified)	D	SO	1.11		
Bilateral Agreement	Confirm that Control Point Operators are able to communicate in plain English	D	SO	1.11		

BC1.A.1	Confirm that the Control Point is aware of their BMU's submitted BM Data including PNs, Bid Offer Data, Dynamic Parameters and the meaning of the term BOA (Bid-Offer Acceptance). (Only applies to generators with BEGAs and BCAs, not to BELLAs)	D	SO	1.11		
BC2.A.1						
BC2.5.1	Confirm that the Control Point is aware that PNs represent the best estimate of expected output and the requirement that each BMU or Generating Unit follows their PN and BOAs. Note BMUs (or Generating Units) powered by an Intermittent Power Source can deviate away from PN when the output level from the Intermittent Power Source differs from that forecasted.	D	SO	1.11		
Control Point definition in Glossary	Confirm the Control Point can control the Power Station, Plant and Apparatus directly (not via a second location), specifically remaining items listed below.	D	SO	1.11		

BC2.7 BC1.A.1.5 BC2.A.1 BC2.9	Confirm the Control Point can commence changing the Generator's MW output in two minutes.	D	SO	1.11		
CC.6.3.9 BC2.9.3.2(c) (BC2.7) (BC2.A.1)	Confirm the Control Point can control the MW output of the generator to a given set point.	D	SO	1.11		
BC2.8.4(a) BC2.A.2	Confirm the Control Point can implement Reactive Power instructions (change in voltage set point) within 2 minutes. (Only applies for Power Park modules, Non Synchronous Generators or DC Convertors. Note that this does not apply to generators that connect to an Offshore Transmission Network as reactive instructions would be sent to the OFTO).	D	SO	1.11		
BC2.A.2	Confirm the Control Point can implement a change in the slope setting within 1 week. (Only applies for Power Park modules, Non Synchronous Generators or DC Convertors. Note that this does not apply to generators that connect to an Offshore Transmission Network	D	SO	1.11		

	as reactive instructions would be sent to the OFTO).					
BC2.8.4(a) BC2.A.2	Confirm the Control Point can implement Reactive Power instructions (change in MVAR output) within 2 minutes. (Only applies for Generators other than Power Park modules, Non Synchronous Generators or DC Convertors. Note that this does not apply to generators that connect to an Offshore Transmission Network as reactive instructions would be sent to the OFTO)	D		SO	1.11	
BC2.A.2	Confirm that voltage indications on the HV side of the generator transformer are available at the Control Point to achieve target voltage instructions. (Only applies for Generators other than Power Park modules, Non Synchronous Generators or DC Convertors. Note that this does not apply to generators that connect to an	D		SO	1.11	

	Offshore Transmission Network as reactive instructions would be sent to the OFTO)					
BC2.9 BC2.9.1.2 BC2.9.2.1 BC2.9.3.2	Confirm that the Control Point has the ability to de-energise all their electrical equipment by having procedures in place to open appropriate circuit breakers safely without delay. (Applies to all large generators that have a BCA, a BEGA or a BELLA; but only include for BCA, i.e.: directly connected generators, as DNO should be responsible for this for embedded generators)	D	SO	1.11		
BC2.8.4(a) BC2.A.2 BC3.4.1 BC3.5.4	Confirm the Control Point can implement Frequency Response Instructions without delay (usually 2 minutes notice). (Does not apply for Power Park Modules < 50MW)	D	SO	1.11		

BC2.5.4(a) BC3.5.2 BC3.7.2	Confirm the Generator is able to and will operate in Limited Frequency Sensitive mode when not instructed to operate in Frequency Sensitive mode. (Does not apply for Power Park Modules < 50MW)	D	SO	1.11		
BC2.10 BC3.4.2	Confirm the Control Point can implement a change in the target frequency. (Does not apply for Power Park Modules < 50MW)	D	SO	1.11		
CC.8.1	System Ancillary Services If applicable: Confirm the capability to provide System Ancillary Services has been included in the MSA for the following: Reactive Power Frequency Response Provide a validated frequency response capability diagram		SO SO SO SO	A.5 A.5 A.5 3.3		

CC.8.2	Commercial Ancillary Services		SO	A.5		
	Confirm the availability or otherwise of any Commercial Ancillary Services.					
BCA - F5	Bilateral Connection Agreement Appendix F5		SO	A.5		
	Confirm the availability or otherwise of any Commercial Ancillary Services.					