Section Title	Current Text	Proposed Text
Station Transformer Pg 53	A transformer supplying electrical power to the **Auxiliaries** of (a) a **Power Station**, which is not directly connected to the **Generating Unit** terminals (typical voltage ratios being 132/11kV or 275/11kV), or (b) a **DC Converter Station** or **HDVC Converter**	No Change- as text states 'typical'
Single Point of Connection PC.A.8.1	For **a Single Point of Connection** to a **User's System** (and **OTSUA**), as an equivalent 400kV or 275kV source and also in Scotland and **Offshore** as an equivalent 132kV source, the data (as at the HV side of the **Point of Connection** (and in the case of **OTSUA**, each **Interface Point** and **Connection Point**) reflecting data given to **The Company** by **Users**) will be given to a **User** as follows: The data items listed under the following parts of PC.A.8.3: (a) (i), (ii), (iii), (iv), (v) and (vi) and the data items shall be provided in accordance with the detailed provisions of PC.A.8.3 (b) - (e)	For a **Single Point of Connection** to a **User's System** (and **OTSUA**), as a Transmission System voltage source ~~an equivalent 400kV or 275kV source and also in Scotland and Offshore as an equivalent 132kV source~~, the data (as at the HV side of the **Point of Connection** (and in the case of **OTSUA**, each **Interface Point** and **Connection Point**) reflecting data given to **The Company** by **Users**) will be given to a **User** as follows: The data items listed under the following parts of PC.A.8.3: (a) (i), (ii), (iii), (iv), (v) and (vi) and the data items shall be provided in accordance with the detailed provisions of PC.A.8.3 (b) - (e)
Data Items PC.A.8.3	(d) Since the equivalent will be produced for the 400kV or 275kV and also in Scotland and **Offshore** 132kV parts of the **National Electricity Transmission System The Company** will provide the appropriate supergrid transformer data	(d) ~~Since the equivalent will be produced for the 400kV or 275kV and also in Scotland and **Offshore** 132kV parts of the **National Electricity Transmission System**~~ **The Company** will provide the appropriate supergrid transformer data for the National Electricity Transmission System associated with equivalent voltage source data.
Grid Voltage Variations for **Users** excluding **DC Connected Power Park Modules** and **Remote End HVDC Converters** ECC.6.1.4.1	Subject as provided below, the voltage on the 400kV part of the **National Electricity Transmission System** at each **Connection Site** with a **User** (and in the case of **OTSDUW Plant and Apparatus**, a **Transmission Interface Point**, excluding **DC Connected Power Park Modules** and **Remote End HVDC Converters**) will normally remain within ±5% of the nominal value unless abnormal conditions prevail. The minimum voltage is -10% and the	~~Subject as provided below~~ The voltage on ~~the 400kV~~ part of the **National Electricity Transmission System** operating at nominal voltages of greater than 300kV at each **Connection Site** with a **User** (and in the case of **OTSDUW Plant and Apparatus**, a **Transmission Interface Point**, excluding **DC Connected Power Park Modules** and **Remote End HVDC Converters**) will normally remain within ±5% of the nominal value unless abnormal conditions prevail. The minimum voltage is -10% and the maximum voltage is +10% unless abnormal conditions prevail, but voltages between +5% and +10% will not last longer than 15 minutes unless abnormal conditions prevail. For nominal

<table>
<tr>
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<td>maximum voltage is +10% unless abnormal conditions prevail, but voltages between +5% and +10% will not last longer than 15 minutes unless abnormal conditions prevail. Voltages on the 275kV and 132kV parts of the National Electricity Transmission System at each Connection Point (and in the case of OTSDUW Plant and Apparatus, a Transmission Interface Point) will normally remain within the limits ±10% of the nominal value unless abnormal conditions prevail. At nominal System voltages below 110kV the voltage of the National Electricity Transmission System at each Connection Site with a User (and in the case of OTSDUW Plant and Apparatus, a Transmission Interface Point), excluding Connection Sites for DC Connected Power Park Modules and Remote End HVDC Converters) will normally remain within the limits ±6% of the nominal value unless abnormal conditions prevail. Under fault conditions, the voltage may collapse transiently to zero at the point of fault until the fault is cleared. The normal operating ranges of the National Electricity Transmission System are summarised below:</td>
<td>voltages of 110kV and up to and including 300kV voltages on the ~~275kV and 132kV~~ parts of the National Electricity Transmission System at each Connection Point (and in the case of OTSDUW Plant and Apparatus, a Transmission Interface Point) will normally remain within the limits ±10% of the nominal value unless abnormal conditions prevail. At nominal System voltages below 110kV the voltage of the National Electricity Transmission System at each Connection Site with a User (and in the case of OTSDUW Plant and Apparatus, a Transmission Interface Point), excluding Connection Sites for DC Connected Power Park Modules and Remote End HVDC Converters) will normally remain within the limits ±6% of the nominal value unless abnormal conditions prevail. Under fault conditions, the voltage may collapse transiently to zero at the point of fault until the fault is cleared. The normal operating ranges of the National Electricity Transmission System are summarised below:</td>
</tr>
<tr>
<td></td>
<td>
<table>
<tr><th>National Electricity Transmission System Nominal Voltage</th><th>Normal Operating Range</th><th>Time period for O</th></tr>
<tr><td>400kV</td><td>400kV -10% to +5%
400kV +5% to +10%</td><td>Unlimited
15 minutes</td></tr>
<tr><td>275kV</td><td>275kV ±10%</td><td>Unlimited</td></tr>
<tr><td>132kV</td><td>132kV ±10%</td><td>Unlimited</td></tr>
<tr><td>110kV</td><td>110kV ±10%</td><td>Unlimited</td></tr>
<tr><td>Below 110kV</td><td>Below 110kV ±6%</td><td>Unlimited</td></tr>
</table>
The Company and a User may agree greater variations or longer minimum time periods of operation in voltage to those set out above in relation to a particular Connection Site, and insofar as a greater variation is agreed, the relevant figure set out above shall, in relation to that User at the particular Connection Site, be replaced by the figure</td>
<td>
<table>
<tr><td rowspan="2">National Electricity Transmission System Nominal Voltage</td><td colspan="2">Normal Operating Range</td><td rowspan="2">Time Perio Operation</td></tr>
<tr><td>Voltage (percentage of Nominal Voltage)</td><td>PU (1pu relates to the Nominal Voltage)</td></tr>
<tr><td>~~400kV~~ Greater than 300kV</td><td>~~400kV~~ -10% to +5%
~~400kV~~ +5% to +10%</td><td>0.90pu-1.05pu
1.05pu-1.10pu</td><td>Unlimited
15 minutes</td></tr>
<tr><td>~~275kV~~ 110kV up to 300kV</td><td>~~275kV~~ ± 10%</td><td>0.90pu-1.10pu</td><td>Unlimited</td></tr>
<tr><td>~~132kV~~</td><td>~~132kV ± 10%~~</td><td></td><td>~~Unlimited~~</td></tr>
<tr><td>~~110kV~~</td><td>~~110kV ± 10%~~</td><td></td><td>~~Unlimited~~</td></tr>
<tr><td>Below 110kV</td><td>~~Below 110kV~~ ± 6%</td><td>0.94pu-1.06pu</td><td>Unlimited</td></tr>
</table>
The Company and a User may agree greater variations or longer minimum time periods of operation in voltage to those set out above in relation to a particular Connection Site, and insofar as a greater variation is agreed, the relevant figure set out above shall, in relation to that User at the particular Connection Site, be</td>
</tr>
</table>

	agreed.	replaced by the figure agreed.
Fault Clearance Times ECC.6.2.2.2.2	(a) The required fault clearance time for faults on the **Generator's** (including **DC Connected Power Park Modules**) or **HVDC System Owner's** equipment directly connected to the **National Electricity Transmission System** or **OTSDUW Plant and Apparatus** and for faults on the **National Electricity Transmission System** directly connected to the **EU Generator** (including **DC Connected Power Park Modules**) or **HVDC System Owner's** equipment or **OTSDUW Plant and Apparatus**, from fault inception to the circuit breaker arc extinction, shall be set out in the **Bilateral Agreement**. The fault clearance time specified in the **Bilateral Agreement** shall not be shorter than the durations specified below: (i) 80ms at 400kV, (ii) 100ms at 275kV, (iii) 120ms at 132kV and below but this shall not prevent the **User** or **The Company** or the **Relevant Transmission Licensee** or the **EU Generator** (including in respect of **OTSDUW Plant and Apparatus** and D**C Connected Power Park Modules**) from selecting a shorter fault clearance time on their own **Plant** and **Apparatus** provided **Discrimination** is achieved. A longer fault clearance time may be specified in the **Bilateral Agreement** for faults on the **National Electricity Transmission System**. A longer fault clearance time for faults on **the EU Generator** or **HVDC System Owner's** equipment or **OTSDUW Plant and Apparatus** may be agreed with **The Company in** accordance with the terms of the **Bilateral Agreement** but only if **System** requirements, in **The Company's** view, permit. The probability that the fault clearance time stated in the **Bilateral Agreement** will be exceeded by any given fault,	(a) The required fault clearance time for faults on the **Generator's** (including **DC Connected Power Park Modules**) or **HVDC System Owner's** equipment directly connected to the **National Electricity Transmission System** or **OTSDUW Plant and Apparatus** and for faults on the **National Electricity Transmission System** directly connected to the **EU Generator** (including **DC Connected Power Park Modules**) or **HVDC System Owner's** equipment or **OTSDUW Plant and Apparatus**, from fault inception to the circuit breaker arc extinction, shall be set out in the **Bilateral Agreement**. The fault clearance time specified in the **Bilateral Agreement** shall not be shorter than the durations specified below: (i) 80ms ~~at 400kV~~ for connections operating at a nominal voltage of greater than 300kV (ii) 100ms ~~at 275kV~~ for connections operating at a nominal voltage of greater than 132kV and up to 300kV (iii) 120ms ~~at~~ for connections operating at a nominal voltage of 132kV and below but this shall not prevent the **User** or **The Company** or the **Relevant Transmission Licensee** or the **EU Generator** (including in respect of **OTSDUW Plant and Apparatus** and **DC Connected Power Park Modules**) from selecting a shorter fault clearance time on their own **Plant** and **Apparatus** provided **Discrimination** is achieved. A longer fault clearance time may be specified in the **Bilateral Agreement** for faults on the **National Electricity Transmission System**. A longer fault clearance time for faults on the **EU Generator** or **HVDC System Owner's** equipment or **OTSDUW Plant and Apparatus** may be agreed with **The Company** in accordance with the terms of the **Bilateral Agreement** but only if **System** requirements, in **The Company's** view, permit. The probability that the fault clearance time stated in the **Bilateral Agreement** will be exceeded by any given fault, must be less than 2%

	must be less than 2%	
	(b) In the event that the required fault clearance time is not met as a result of failure to operate on the **Main Protection System(s)** provided, the **Generators** or **HVDC System Owners** or **Generators** in the case of **OTSDUW Plant and Apparatus** shall, except as specified below provide **Independent Back-Up Protection**. **The Relevant Transmission Licensee** will also provide **Back-Up Protection** and the **Relevant Transmission Licensee's** and the **User's Back-Up Protections** will be co-ordinated so as to provide **Discrimination**. On a **Power Generating Module** (other than a **Power Park Unit**), **HVDC Equipment** or **OTSDUW Plant and Apparatus** and connected to the **National Electricity Transmission System** at 400kV or 275kV and where two **Independent Main Protections** are provided to clear faults on the **HV Connections** within the required fault clearance time, the **Back-Up Protection** provided by **EU Generators** (including in respect of **OTSDUW Plant and Apparatus** and **DC Connected Power Park Modules**) and **HVDC System Owners** shall operate to give a fault clearance time of no longer than 300ms at the minimum infeed for normal operation for faults on the HV Connections. Where two **Independent Main Protections** are installed the **Back-Up Protection** may be integrated into one (or both) of the **Independent Main Protection** relays. On a **Power Generating Module** (other than a **Power Park Unit**), **HVDC Equipment** or **OTSDUW Plant and Apparatus** and connected to the **National Electricity Transmission System** at 132 kV and where only one **Main Protection** is provided to clear faults on the **HV**	(b) In the event that the required fault clearance time is not met as a result of failure to operate on the **Main Protection System(s)** provided, the **Generators** or **HVDC System Owners** or **Generators** in the case of **OTSDUW Plant and Apparatus** shall, except as specified below provide **Independent Back-Up Protection**. **The Relevant Transmission Licensee** will also provide **Back-Up Protection** and the **Relevant Transmission Licensee's** and the **User's Back-Up Protections** will be co-ordinated so as to provide **Discrimination**. On a **Power Generating Module** (other than a **Power Park Unit**), **HVDC Equipment** or **OTSDUW Plant and Apparatus** and connected to the **National Electricity Transmission System** operating at a nominal voltage of greater than 132kV ~~400kV or 275kV~~ and where two **Independent Main Protections** are provided to clear faults on the **HV Connections** within the required fault clearance time, the **Back-Up Protection provided** by **EU Generators** (including in respect of **OTSDUW Plant and Apparatus** and **DC Connected Power Park Modules**) and **HVDC System Owners** shall operate to give a fault clearance time of no longer than 300ms at the minimum infeed for normal operation for faults on the HV Connections. Where two **Independent Main Protections** are installed the **Back-Up Protection** may be integrated into one (or both) of the **Independent Main Protection** relays. On a Power Generating Module (other than a **Power Park Unit**), **HVDC Equipment** or **OTSDUW Plant and Apparatus** and connected to the **National Electricity Transmission System** at 132 kV and below and where only one **Main Protection** is provided to clear faults on the **HV Connections** within the required fault clearance time, the **Independent Back-Up Protection** provided by the **Generator** (including in respect of **OTSDUW Plant and Apparatus** and **DC Connected Power Park Modules**) and the **HVDC System Owner** shall operate to give a fault clearance time of no longer than 300ms at the minimum infeed for normal operation for faults on the **HV Connections.** **A Power Generating Module** (other than a **Power Park Unit**), **HVDC Equipment** or **OTSDUW Plant and Apparatus**) with **Back-Up Protection** or

	Connections within the required fault clearance time, the **Independent Back-Up Protection** provided by the **Generator** (including in respect of **OTSDUW Plant and Apparatus** and **DC Connected Power Park Modules**) and the **HVDC System Owner** shall operate to give a fault clearance time of no longer than 300ms at the minimum infeed for normal operation for faults on the **HV Connections**. **A Power Generating Module** (other than a **Power Park Unit**), **HVDC Equipment** or **OTSDUW Plant and Apparatus**) with **Back-Up Protection** or **Independent Back-Up Protection** will also be required to withstand, without tripping, the loading incurred during the clearance of a fault on the **National Electricity Transmission System** by breaker fail Protection at 400kV or 275kV or of a fault cleared by **Back-Up Protection** where the **EU Generator** (including in the case of **OTSDUW Plant and Apparatus** or **DC Connected Power Park Module**) or **HVDC System** is connected at 132kV and below. This will permit **Discrimination** between the **Generator** in respect of **OTSDUW Plant and Apparatus** or **DC Connected Power Park Modules** or **HVDC System Owners' Back-Up Protection** or **Independent Back-Up Protection** and the **Back-Up Protection** provided on the **National Electricity Transmission System** and other **Users' Systems**	**Independent Back-Up Protection** will also be required to withstand, without tripping, the loading incurred during the clearance of a fault on the **National Electricity Transmission System** by breaker fail Protection at a nominal voltage of greater than 132kV ~~400kV or 275kV~~ or of a fault cleared by **Back-Up Protection** where the **EU Generator** (including in the case of **OTSDUW Plant and Apparatus** or **DC Connected Power Park Module**) or **HVDC System** is connected at 132kV and below. This will permit **Discrimination** between the **Generator** in respect of **OTSDUW Plant and Apparatus** or **DC Connected Power Park Modules** or **HVDC System Owners' Back-Up Protection** or **Independent Back-Up Protection** and the **Back-Up Protection** provided on the **National Electricity Transmission System** and other **Users' Systems**
	(c) When the **Power Generating Module** (other than **Power Park Units**), or the **HVDC Equipment** or **OTSDUW Plant and Apparatus** is connected to the **National Electricity Transmission System** at 400kV or 275kV, and in Scotland and **Offshore** also at 132kV, and a circuit breaker is provided by the **Generator** (including in respect of **OTSDUW Plant and Apparatus** or **DC**	(c) When the **Power Generating Module** (other than **Power Park Units**), or the **HVDC Equipment** or **OTSDUW Plant and Apparatus** is connected to the **National Electricity Transmission System** operating at a nominal voltage of greater than 132kV ~~400kV or 275kV~~, and in Scotland and **Offshore** also at 132kV, and a circuit breaker is provided by the **Generator** (including in respect of **OTSDUW Plant and Apparatus** or **DC Connected Power Park Modules**) or the **HVDC System** owner, or the **Relevant Transmission Licensee**, as the case may be, to interrupt fault

	Connected Power Park Modules) or the **HVDC System** owner, or the **Relevant Transmission Licensee**, as the case may be, to interrupt fault current interchange with the **National Electricity Transmission System**, or **Generator's System**, or **HVDC System Owner's System**, as the case may be, circuit breaker fail Protection shall be provided by the **Generator** (including in respect of **OTSDUW Plant and Apparatus** or **DC Connected Power Park Modules**) or **HVDC System** Owner, or the **Relevant Transmission Licensee**, as the case may be, on this circuit breaker. In the event, following operation of a **Protection** system, of a failure to interrupt fault current by these circuit-breakers within the **Fault Current Interruption Time**, the circuit breaker fail Protection is required to initiate tripping of all the necessary electrically adjacent circuit-breakers so as to interrupt the fault current within the next 200ms	current interchange with the **National Electricity Transmission System**, or **Generator's System**, or **HVDC System Owner's System**, as the case may be, circuit breaker fail Protection shall be provided by the **Generator** (including in respect of **OTSDUW Plant and Apparatus or DC Connected Power Park Modules**) or **HVDC System** Owner, or the **Relevant Transmission Licensee**, as the case may be, on this circuit breaker. In the event, following operation of a **Protection** system, of a failure to interrupt fault current by these circuit-breakers within **the Fault Current Interruption Time**, the circuit breaker fail Protection is required to initiate tripping of all the necessary electrically adjacent circuit-breakers so as to interrupt the fault current within the next 200ms.
Protection arrangements for **EU Code Users** in respect of **Network Operators and NonEmbedded Customers User Systems** directly connected to the **National Electricity Transmission System**, shall meet the requirements given below: ECC.6.2.3.1.1	(a) The required fault clearance time for faults on **Network Operator** and **Non-Embedded Customer** equipment directly connected to the **National Electricity Transmission System**, and for faults on the **National Electricity Transmission System** directly connected to the **Network Operator's** or **Non-Embedded Customer's** equipment, from fault inception to the circuit breaker arc extinction, shall be set out in each **Bilateral Agreement**. The fault clearance time specified in the **Bilateral Agreement** shall not be shorter than the durations specified below: (i) 80ms at 400kV (ii) 100ms at 275kV (iii) 120ms at 132kV and below but this shall not prevent the **User** or **The Company** or **Relevant Transmission Licensee** from selecting a shorter fault clearance time on its own **Plant** and **Apparatus** provided	(a) The required fault clearance time for faults on **Network Operator** and **Non-Embedded Customer** equipment directly connected to the **National Electricity Transmission System**, and for faults on the **National Electricity Transmission System** directly connected to the **Network Operator's** or **Non-Embedded Customer's equipment**, from fault inception to the circuit breaker arc extinction, shall be set out in each **Bilateral Agreement**. The fault clearance time specified in the **Bilateral Agreement** shall not be shorter than the durations specified below: (i) 80ms ~~at 400kV~~ for connections operating at a nominal voltage of greater than 300kV (ii) 100ms ~~at 275kV~~ for connections operating at a nominal voltage of greater than 132kV and up to 300kV (iii) 120ms ~~at~~ for connections operating at a nominal voltage of 132kV and below but this shall not prevent the **User** or **The Company** or **Relevant Transmission Licensee** from selecting a shorter fault clearance time on its own **Plant** and **Apparatus** provided **Discrimination** is achieved. For the purpose of establishing the Protection requirements in accordance with ECC.6.2.3.1.1 only, the point of connection of the **Network**

	Discrimination is achieved. For the purpose of establishing the **Protection** requirements in accordance with ECC.6.2.3.1.1 only, the point of connection of the **Network Operator** or **Non-Embedded Customer equipment** to the **National Electricity Transmission System** shall be deemed to be the low voltage busbars at an **EU Grid Supply Point**, irrespective of the ownership of the equipment at the **EU Grid Supply Point**.	**Operator** or **Non-Embedded Customer** equipment to the **National Electricity Transmission System** shall be deemed to be the low voltage busbars at an **EU Grid Supply Point**, irrespective of the ownership of the equipment at the **EU Grid Supply Point.**
ECC.6.2.3.1.1	(b) (i) For the event of failure of the **Protection** systems provided to meet the above fault clearance time requirements, **Back-Up Protection** shall be provided by the **Network Operator** or **Non-Embedded Customer** as the case may be. (ii) The **Relevant Transmission Licensee** will also provide **Back-Up Protection**, which will result in a fault clearance time longer than that specified for the **Network Operator** or **Non-Embedded Customer Back-Up Protection** so as to provide **Discrimination**. (iii) For connections with the **National Electricity Transmission System** at 132kV and below, it is normally required that the **Back-Up Protection** on the **National Electricity Transmission System** shall discriminate with the **Network Operator** or **Non-Embedded Customer's Back-Up Protection**. (iv) For connections with the **National Electricity Transmission System** at 400kV or 275kV, the **Back-Up Protection** will be provided by the **Network Operator** or **Non-Embedded Customer**, as the case may be, with a fault clearance time not longer than 300ms for faults on the **Network Operator's** or **Non-Embedded Customer's Apparatus**.	(b) (i) For the event of failure of the **Protection** systems provided to meet the above fault clearance time requirements, **Back-Up Protection** shall be provided by the **Network Operator** or **Non-Embedded Customer** as the case may be. (ii) The **Relevant Transmission Licensee** will also provide **Back-Up Protection**, which will result in a fault clearance time longer than that specified for the **Network Operator** or **Non-Embedded Customer** Back-**Up Protection** so as to provide **Discrimination**. (iii) For connections with the **National Electricity Transmission System** at 132kV and below, it is normally required that the **Back-Up Protection** on the **National Electricity Transmission System** shall discriminate with the **Network Operator** or **Non-Embedded Customer's Back-Up Protection.** (iv) For connections with the **National Electricity Transmission System** operating at a nominal voltage greater than 132kV ~~400kV or 275kV~~, the **Back-Up Protection** will be provided by the **Network Operator** or **Non-Embedded Customer**, as the case may be, with a fault clearance time not longer than 300ms for faults on the **Network Operator's** or **Non-Embedded Customer's Apparatus**.
ECC.6.2.3.1.	(v) Such **Protection** will also be	(v) Such **Protection** will also be required to

1	required to withstand, without tripping, the loading incurred during the clearance of a fault on the **National Electricity Transmission System** by breaker fail **Protection** at 400kV or 275kV. This will permit **Discrimination** between **Network Operator's Back-Up Protection** or **Non-Embedded Customer's Back-Up Protection**, as the case may be, and **Back-Up Protection** provided on the **National Electricity Transmission System** and other **User Systems**. The requirement for and level of **Discrimination** required will be specified in the **Bilateral Agreement**. (c) (i) Where the **Network Operator** or **Non-Embedded Customer** is connected to the **National Electricity Transmission System** at 400kV or 275kV, and in Scotland also at 132kV, and a circuit breaker is provided by the **Network Operator** or **Non-Embedded Customer**, or the **Relevant Transmission Licensee**, as the case may be, to interrupt the interchange of fault current with the **National Electricity Transmission System** or the **System** of the **Network Operator** or **Non-Embedded Customer**, as the case may be, circuit breaker fail **Protection** will be provided by the **Network Operator** or **Non-Embedded Customer**, or the **Relevant Transmission Licensee**, as the case may be, on this circuit breaker. (ii) In the event, following operation of a **Protection** system, of a failure to interrupt fault current by these circuit-breakers within the **Fault Current Interruption Time**, the circuit breaker fail **Protection** is required to initiate tripping of all the necessary electrically adjacent circuit-breakers so as to interrupt the fault current within the next 200ms.	withstand, without tripping, the loading incurred during the clearance of a fault on the **National Electricity Transmission System** by breaker fail **Protection** operating at a nominal voltage of greater than 132kV ~~400kV or 275kV~~. This will permit **discrimination** between **Network Operator's Back-Up Protection** or **Non-Embedded Customer's Back-Up Protection**, as the case may be, and **Back-Up Protection** provided on **the National Electricity Transmission System** and other **User Systems.** The requirement for and level of **Discrimination** required will be specified in the **Bilateral Agreement.** (c) (i) Where the **Network Operator** or **Non-Embedded Customer** is connected to part of the **National Electricity Transmission System** operating at a nominal voltage greater than 132kV and in ~~at 400kV or 275kV, and in~~ Scotland also at 132kV, and a circuit breaker is provided by the **Network Operator or Non-Embedded Customer**, or the **Relevant Transmission Licensee**, as the case may be, to interrupt the interchange of fault current with the **National Electricity Transmission System** or the **System** of the **Network Operator** or **Non-Embedded Customer**, as the case may be, circuit breaker fail **Protection** will be provided by the **Network Operator or Non-Embedded Customer,** or the **Relevant Transmission Licensee**, as the case may be, on this circuit breaker. (ii) In the event, following operation of a **Protection** system, of a failure to interrupt fault current by these circuit-breakers within the **Fault Current Interruption Time**, the circuit breaker fail **Protection** is required to initiate tripping of all the necessary electrically adjacent circuit-breakers so as to interrupt the fault current within the next 200ms.

<table>
<tr>
<td>Voltage Fluctuations ECC.6.1.7</td>
<td>
<table>
<tr><th>Supply system Nominal voltage</th><th colspan="2">Planning level</th></tr>
<tr><th></th><th>Flicker Severity Short Term (Pst)</th><th>Flicker Severity Long Term (Plt)</th></tr>
<tr><td>3.3 kV, 6.6 kV, 11 kV, 20 kV, 33 kV</td><td>0.9</td><td>0.7</td></tr>
<tr><td>66 kV, 110 kV, 132 kV, 150 kV, 200 kV, 220 kV, 275 kV, 400 kV</td><td>0.8</td><td>0.6</td></tr>
<tr><td colspan="3">NOTE 1: The magnitude of P_{st} is linear with respect to the magnitude of the voltage changes giving rise to it.
NOTE 2: Extreme caution is advised in allowing any excursions of P_{st} and P_{lt} above the planning level.</td></tr>
</table>
Table ECC.6.1.1(b) — Planning levels for flicker
</td>
<td>
<table>
<tr><td>Supply System Nominal Voltage</td><td>Planning Level
Flicker Severity Short Term (Pst)</td><td>
Flicker Severity Long Term (Plt)</td></tr>
<tr><td>~~3.3kV, 6.6kV, 11kV, 20kV,~~ Up to and including 33kV</td><td>0.9</td><td>0.7</td></tr>
<tr><td>66kV and greater, ~~100kV, 132kV, 150kV, 00kV, 220kV, 275kV, 400kV~~</td><td>0.8</td><td>0.6</td></tr>
<tr><td colspan="3">NOTE 1: The magnitude of Pst is linear with respect to the magnitude of the voltage changes giving rise to it.
NOTE 2: Extreme caution is advised in allowing any excursions of Pst and Plt above the planning level.</td></tr>
</table>
Table ECC.6.1.1(b) — Planning levels for flicker
</td>
</tr>
<tr>
<td>Schedule 5- Users System Data Page 1 of 11</td>
<td>(a) all parts of the User's System, whether existing or proposed, operating at Supergrid Voltage, and in Scotland and Offshore, also all parts of the User System operating at 132kV,

(b) all parts of the User's System operating at a voltage of 50kV, and in Scotland and Offshore greater than 30kV, or higher which can interconnect Connection Points, or split bus-bars at a single Connection Point,

This Single Line Diagram shall depict the arrangement(s) of all of the existing and proposed load current carrying Apparatus relating to both existing and proposed Connection Points, showing electrical circuitry (ie. overhead lines, underground cables, power transformers and similar equipment), operating voltages. In addition, for equipment operating at a Supergrid Voltage, and in Scotland and Offshore also at 132kV, circuit breakers and phasing arrangements shall be shown.</td>
<td>(a) all parts of the User's System, whether existing or proposed, operating at Supergrid Voltage, and in Scotland and Offshore, also all parts of the User System operating at 110kV and greater ~~132kV~~,

(b) all parts of the User's System operating at a voltage of 50KV and greater, and in Scotland and Offshore greater than 30kV, or higher which can interconnect Connection Points, or split bus-bars at a single Connection Point,

This Single Line Diagram shall depict the arrangement(s) of all of the existing and proposed load current carrying Apparatus relating to both existing and proposed Connection Points, showing electrical circuitry (ie. overhead lines, underground cables, power transformers and similar equipment), operating voltages. In addition, for equipment operating at a Supergrid Voltage, and in Scotland and Offshore also at 110kV and greater ~~132kV~~, circuit breakers and phasing arrangements shall be shown.</td>
</tr>
<tr>
<td>Schedule 5- Users System Data Page 8 of 11</td>
<td>(f) The following data is required on all transformers operating at Supergrid Voltage throughout Great Britain and, in Scotland and Offshore, also at 132kV: three or five limb cores or single phase units to be specified, and operating peak flux density at nominal voltage.</td>
<td>(f) The following data is required on all transformers operating at Supergrid Voltage throughout Great Britain and, in Scotland and Offshore, also at greater than 110kV~~132kV~~: three or five limb cores or single phase units to be specified, and operating peak flux density at nominal voltage.</td>
</tr>
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Transient Overvoltage Assessment Data PC.A.6.2.1	(f) the following data is required on all transformers operating at **Supergrid Voltage** throughout **Great Britain** and, in Scotland and **Offshore**, also at 132kV (including **OTSUA**): three or five limb cores or single phase units to be specified, and operating peak flux density at nominal voltage;	(f) the following data is required on all transformers operating at **Supergrid Voltage** throughout **Great Britain** and, in Scotland and **Offshore**, also at 132kV or greater (including **OTSUA**): three or five limb cores or single phase units to be specified, and operating peak flux density at nominal voltage;
User's System (and OTSUA) Layout PC.A.2.2.2	The **Single Line Diagram** (three examples are shown in Appendix B) must include all parts of the **User System** operating at **Supergrid Voltage** throughout **Great Britain** and, in Scotland and **Offshore**, also all parts of the **User System** operating at 132kV, and those parts of its **Subtransmission System** at any **Transmission Site**. In the case of **OTSDUW**, the **Single Line Diagram** must also include the **OTSUA**. In addition, the **Single Line Diagram** must include all parts of the User's **Subtransmission System** (and any **OTSUA**) throughout **Great Britain** operating at a voltage greater than 50kV, and, in Scotland and **Offshore**, also all parts of the **User's Subtransmission System** (and any **OTSUA**) operating at a voltage greater than 30kV, which, under either intact network or **Planned Outage** conditions:	The **Single Line Diagram** (three examples are shown in Appendix B) must include all parts of the **User System** operating at **Supergrid Voltage** throughout **Great Britain** and, in Scotland and **Offshore**, also all parts of the **User System** operating at 132kV or greater, and those parts of its **Subtransmission System** at any **Transmission Site**. In the case of **OTSDUW**, the **Single Line Diagram** must also include the **OTSUA**. In addition, the **Single Line Diagram** must include all parts of the User's **Subtransmission System** (and any **OTSUA**) throughout **Great Britain** operating at a voltage greater than 50kV, and, in Scotland and **Offshore**, also all parts of the **User's Subtransmission System** (and any **OTSUA**) operating at a voltage greater than 30kV, which, under either intact network or **Planned Outage** conditions:
PC.A.2.2.3	The above-mentioned **Single Line Diagram** shall include: (a) electrical circuitry (i.e. overhead lines, identifying which circuits are on the same towers, underground cables, power transformers, reactive compensation equipment and similar equipment); and (b) substation names (in full or abbreviated form) with operating voltages. In addition, for all load current carrying **Apparatus** operating at **Supergrid Voltage** throughout **Great Britain** and, in Scotland and **Offshore**, also at 132kV, (and any **OTSUA**) the **Single Line Diagram** shall include:	The above-mentioned **Single Line Diagram** shall include: (a) electrical circuitry (i.e. overhead lines, identifying which circuits are on the same towers, underground cables, power transformers, reactive compensation equipment and similar equipment); and (b) substation names (in full or abbreviated form) with operating voltages. In addition, for all load current carrying **Apparatus** operating at **Supergrid Voltage** throughout **Great Britain** and, in Scotland and **Offshore**, also at 132kV or greater, (and any **OTSUA**) the **Single Line Diagram** shall include:

Test and Monitoring Assessment OC5.5.4 (Table Reactive Capability)	CC.6.3.2 or ECC.6.3.2 (and in the case of CC.6.3.2(e)(iii) and ECC.6.3.2.5 and ECC.6.3.2.6, the **Bilateral Agreement**), CC.6.3.4 or ECC.6.3.4, **Ancillary Services Agreement**. For a test initiated under OC.5.5.1.1 the **Power Generating Module**, **Generating Unit**, **HVDC Equipment**, **DC Converter** or **Power Park Module** or (prior to the **OTSUA Transfer Time**) **OTSUA** will pass the test if it is within ±5% of the reactive capability registered with **The Company** under OC2. the duration of the test will be for a period of up to 60 minutes during which period the system voltage at the **Grid Entry Point** for the relevant **Power Generating Module**, **Generating Unit**, **HVDC Equipment**, **DC Converter** or **Power Park Module** or **Interface Point** in the case of **OTSUA** will be maintained by the **Generator** or **HVDC System Owner**, **DC Converter Station** owner at the voltage specified pursuant to BC2.8 by adjustment of **Reactive Power** on the remaining **Power Generating Module, Generating Unit, HVDC Equipment, DC Converter** or **Power Park Modules** or **OTSUA**, if necessary. Any test performed in respect of an **Embedded Medium Power Station** not subject to a **Bilateral Agreement** or, an **Embedded DC Converter Station or Embedded HVDC System** not subject to a **Bilateral Agreement** shall be as confirmed pursuant to OC5.8.3. Measurements of the **Reactive Power** output under steady state conditions should be consistent with Grid Code requirements i.e. fully available within the voltage range ±5% at 400kV, 275kV and 132kV and lower voltages.	CC.6.3.2 or ECC.6.3.2 (and in the case of CC.6.3.2(e)(iii) and ECC.6.3.2.5 and ECC.6.3.2.6, the **Bilateral Agreement**), CC.6.3.4 or ECC.6.3.4, **Ancillary Services Agreement**. For a test initiated under OC.5.5.1.1 the **Power Generating Module**, **Generating Unit**, **HVDC Equipment**, **DC Converter** or **Power Park Module** or (prior to the **OTSUA Transfer Time**) **OTSUA** will pass the test if it is within ±5% of the reactive capability registered with **The Company** under OC2. T~~t~~he duration of the test will be for a period of up to 60 minutes during which period the system voltage at the **Grid Entry Point** for the relevant **Power Generating Module**, **Generating Unit**, **HVDC Equipment**, **DC Converter** or **Power Park Module** or **Interface Point** in the case of **OTSUA** will be maintained by the **Generator** or **HVDC System Owner**, **DC Converter Station** owner at the voltage specified pursuant to BC2.8 by adjustment of **Reactive Power** on the remaining **Power Generating Module, Generating Unit, HVDC Equipment, DC Converter** or **Power Park Modules** or **OTSUA**, if necessary. Any test performed in respect of an **Embedded Medium Power Station** not subject to a **Bilateral Agreement** or, an **Embedded DC Converter Station or Embedded HVDC System** not subject to a **Bilateral Agreement** shall be as confirmed pursuant to OC5.8.3. Measurements of the **Reactive Power** output under steady state conditions should be consistent with Grid Code requirements i.e. fully available within the voltage range ±5% at *all* ~~*400kV, 275kV and 132kV and lower*~~ voltages.

SYSTEM INCIDENTS REPORT OC3.4.1	(iii) a fault on the National **Electricity Transmission System** which: A. could be linked to the known or reported tripping of 250MW or more as reported in (i) above; and/or B. (as detailed in section CC6.1.4) is linked to a change in the **Transmission System voltage** of more than I. 400kV: > +/-5% for >15min; or II. 275kV or 132 kV: > +/- 10% for >15min;	iii) a fault on the National **Electricity Transmission System** which: A. could be linked to the known or reported tripping of 250MW or more as reported in (i) above; and/or B. (as detailed in section CC6.1.4) is linked to a change in the **Transmission System voltage** of ~~more than~~ I. *300kV or greater ~~400kV~~: > +/-5% for >15min; or* *II. 132kV up to 300kV ~~275kV or 132 kV~~: > +/- 10% for >15min;*
PC.A.2.2.5.1	In addition, for all interconnecting transformers between the **User's Supergrid Voltage System** and the **User's Subtransmission System** throughout **Great Britain** and, in Scotland and **Offshore**, also for all interconnecting transformers between the **User's** 132kV System and the **User's Subtransmission System** (and any **OTSUA**) the User shall supply the following information:-	In addition, for all interconnecting transformers between the **User's Supergrid Voltage System** and the **User's Subtransmission System** throughout **Great Britain** and, in Scotland and **Offshore**, also for all interconnecting transformers operating at 132kV or greater between the **User's** ~~132kV~~ System and the **User's Subtransmission System** (and any **OTSUA**) the **User** shall supply the following information:-