nationalgridESO

Temporary Overvoltage Requirements [Draft]

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Temporary Overvoltage Requirements draft clauses:

CC.6.1.11 Under normal operating conditions and following any planned event, switching event, or any unplanned **Secured Event**, the magnitude of any temporary power frequency overvoltage at a **Connection Site** measured in per unit with basis equal to the maximum steady state voltage applicable at the site as specified in CC.6.1.4 shall not exceed the levels specified in Figure 6.1.11

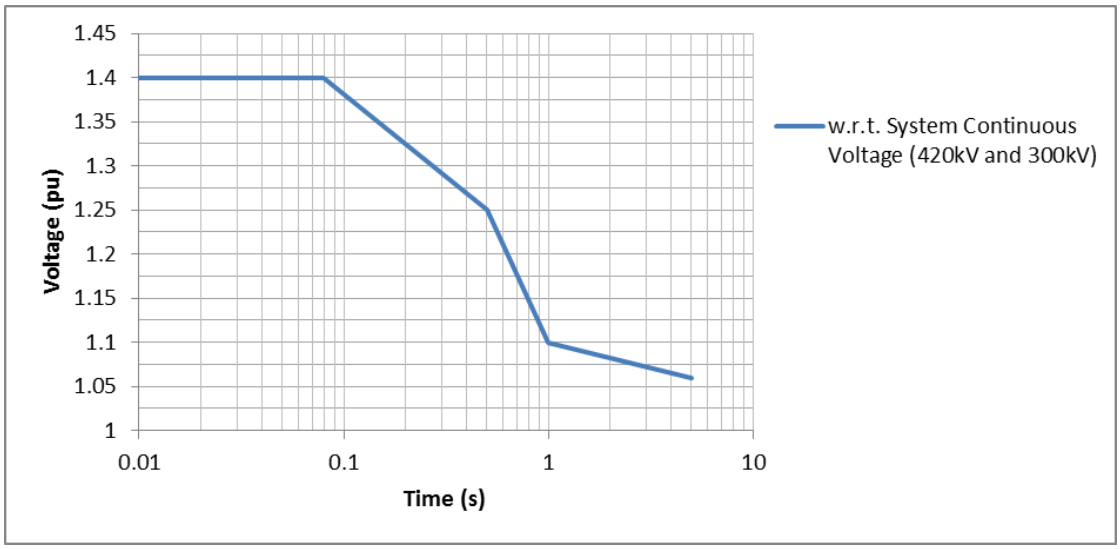

Figure 6.1.11

CC.A.7.2.3.3 During voltage transients where the voltage at the **Connection Site** exceeds the levels specified in CC.6.1.4, an **Onshore Non-Synchronous Generating Unit**, **Onshore DC Converter**, **OTSDUW Plant and Apparatus** or **Onshore Power Park Module** shall

(a) not cause any voltage rise above the limits specified in CC.6.1.11 and
(b) continue to provide voltage control in order to reduce the magnitude of the voltage excursion.

CC.6.3.15.1 Fault Ride through applicable to Generating Units, Power Park Modules and DC Converters and OTSDUW Plant and Apparatus

(a) Short circuit faults on the Onshore Transmission System (which may include an Interface Point) at Supergrid Voltage up to 140ms in duration.

(i) Each Generating Unit, DC Converter, or Power Park Module and any constituent Power Park Unit thereof and OTSDUW Plant and Apparatus shall remain transiently stable and connected to the System without tripping of any Generating Unit, DC Converter or Power Park Module and / or any

constituent Power Park Unit, OTSDUW Plant and Apparatus, and for Plant and Apparatus installed on or after 1 December 2017, reactive compensation equipment, for a close-up solid three phase short circuit fault or any unbalanced short circuit fault on the Onshore Transmission System (including in respect of OTSDUW Plant and Apparatus, the Interface Point) operating at Supergrid Voltages for a total fault clearance time of up to 140 ms. A solid three-phase or unbalanced earthed fault results in zero voltage on the faulted phase(s) at the point of fault. The duration of zero voltage is dependent on local Protection and circuit breaker operating times. This duration and the fault clearance times will be specified in the Bilateral Agreement. Following fault clearance, recovery of the Supergrid Voltage on the Onshore Transmission System to 90% may take longer than 140ms as illustrated in Appendix 4A Figures CC.A.4A.1 (a) and (b) and may involve temporary power frequency overvoltages of up to the levels specified in CC.6.1.11. It should be noted that

(a) in the case of an Offshore Generating Unit, Offshore DC Converter or Offshore Power Park Module (including any Offshore Power Park Unit thereof) which is connected to an Offshore Transmission System which includes a Transmission DC Converter as part of that Offshore Transmission System, the Offshore Grid Entry Point voltage may not indicate the presence of a fault on the Onshore Transmission System.

(b) A **Generating Unit**, **DC Converter**, or **Power Park Module** and any constituent **Power Park Unit** thereof and **OTSDUW Plant and Apparatus** that is required to be disconnected in order to clear the fault or in response to a signal from a **System to Generator Operational Intertripping Scheme** that is armed in accordance with an instruction from **The Company**, is not required to ride through the fault.

(c) A **Generating Unit**, **DC Converter**, or **Power Park Module** and any constituent **Power Park Unit** thereof and **OTSDUW Plant and Apparatus** that has become isolated from the **Total System** with insufficient frequency response margins to regulate the **Frequency** within the range specified in CC.6.1.3 following fault clearance, is not required to ride through the fault.

(iii) During the period of the fault as detailed in CC.6.3.15.1 (a) (i)(a) for which the voltage at the Grid Entry Point (or Interface Point in the case of OTSDUW Plant and Apparatus) is outside the limits specified in CC.6.1.4, each Generating Unit or Power Park Module or OTSDUW Plant and Apparatus shall generate maximum reactive current without exceeding the transient rating limit of the Generating Unit, OTSDUW Plant and Apparatus or Power Park Module and / or any constituent Power Park Unit or reactive compensation equipment. It should be noted that the maximum reactive current provided is dependent on the voltage at the Grid Entry Point.