OPERATING CODE NO. 9
(OC9)

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CONTINGENCY PLANNING

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OC9.1 INTRODUCTION

Operating Code No.9 ("**OC9**") covers the ~~following:~~

~~OC9.1.1 Black Starts~~

~~The implementation of recovery~~ processes and procedures by which **The Company** in coordination and liaison with **Users**, will restore the **Total System** or parts of the **System** following a **Total Shutdown** or **Partial Shutdown**.

OC9.1.1 Approach to System Restoration

The Company is obliged through its Licence to achieve **System Restoration** within the parameters of the **Electricity System Restoration Standard**.

Electricity **System Demand** in the context of the "**Electricity System Restoration Standard**", is considered by **The Company** to be the forecast peak **National Demand** which would have occurred within the 24 hour period following the start of the **Total Shutdown** or **Partial Shutdown** had the **Total Shutdown** or **Partial Shutdown** not occurred. Under the **Electricity System Restoration Standard**, 60% of peak **National Demand** is to be restored accross all **System Restoration Regions** in 24 hours and 100% peak **National Demand** is to be restored accross **System Restoration Regions** in 5 days.

Following a **Total Shutdown** or **Partial Shutdown**, there are two ways in which the **Total System** (or the disconnected part of the **System** in the case of a **Partial Shutdown**) can be re-established. These being a top-down approach using **Local Joint Restoration Plans** or a bottom-up approach using **Distribution Restoration Zone Plans**.

Any **Local Joint Restoration Plan** and/or **Distribution Restoration Zone Plan** comprising common **Transmission Licensees's**, **Network Operator's** or **Restoration Contractor's** assets cannot be activated at the same time. However, this would not preclude a **Local Joint Restoration Plan** or **Distributed Restoration Zone Plan** from being activated at the same site(s) where there is segregation between them.

OC9.1.2 Re-Synchronisation ~~Of~~of Power Islands

~~The~~Following the establishment of **Power Islands** (either through the implementation of **Local Joint Restoration Plans** or **Distribution Restoration Zone Plans**), **The Company** will then co-ordinate the **Re-Synchronisation** of parts of the **Total System** which have become **Out of Synchronism** with each other irrespective of whether or not a **Total Shutdown** or **Partial Shutdown** has occurred.

OC9.1.3 Joint System Incident Procedure

~~The~~A **Joint System Incident** procedure requires the establishment of ~~a~~ communication ~~route~~routes and arrangements between senior management representatives of **The Company** and **Users** involved in, or who may be involved in, an actual or potential serious or widespread disruption to the **Total System** or a part of the **Total System**, which requires, or may require, urgent managerial response, day or night, but which does not fall within the provisions of OC9.1.~~4~~5.

~~OC9.1.4~~ OC9.1.4 **Relevant Transmission Licensees** shall comply with OC9.4 and OC9.5 as provided for in STCP 06-1 and any relevant **Local Joint Restoration Plan** or **Distribution Restoration Zone Plan** or OC9 **De-Synchronised Island Procedure** where and to the extent that such matters apply to them.

OC9.1.5 Directions Issued by the Secretary of State

It should be noted that under section 96 of the **Act**, the **Secretary of State** may give directions to **The Company** and/or any **Generator** and/or any **Supplier**, for the purpose of "mitigating the effects of any civil emergency which may occur" (ie. for the purposes of planning for a civil emergency); a civil emergency is defined in the **Act** as "any natural disaster or other emergency which, in the opinion of the **Secretary of State**, is or may be likely to disrupt electricity supplies". Under the Energy Act 1976, the **Secretary of State** has powers to make orders and give directions controlling the production, supply, acquisition or use of electricity, where an Order in Council under section 3 is in force declaring that there is an actual or imminent emergency affecting electricity supplies. In the event that any such directions are given, or orders made under the **Energy Act 1976**, the provisions of the **Grid Code** will be suspended in so far as they are inconsistent with them.

~~OC9.1.5~~ ~~**The Company** shall procure that **Relevant Transmission Licensees** shall comply with OC9.4 and OC9.5 and any relevant **Local Joint Restoration Plan** or OC9 **De-Synchronised Island Procedure** where and to the extent that such matters apply to them.~~

OC9.2 OBJECTIVE

The overall objectives of **OC9** are:

OC9.2.1 To achieve~~, as far as possible, restoration~~ the requirements of the ~~**Total**~~**Electricity System** ~~and associated **Demand** in the shortest possible time~~**Restoration Standard**, taking into account ~~**Power Station**~~the capability of **Restoration Contractor's Plant** and **Apparatus** as well as other **Users' Plant** and **Apparatus** capabilities, including **Embedded Generating Units**~~,~~ and **External Interconnections** and the operational constraints of the **Total System**

~~OC9.2.2~~OC9.2.2 To initiate the restoration process through the activation of **Local Joint Restoration Plans** and/or **Distribution Restoration Zone Plans** followed by the subsequent **Re-Synchronisation** and expansion of **Power Islands**.

OC9.2.3 To achieve the **Re-Synchronisation** of parts of the **Total System** which have become **Out of Synchronism** with each other.

OC9.2.~~3~~4 To ensure that communication routes and arrangements are available to enable senior management representatives of **The Company** and **Users**, who are authorised to make binding decisions on behalf of **The Company** or the relevant **User**, as the case may be, to communicate with each other in the situation described in OC9.1.3.

OC9.2.~~4~~5 To describe the role that ~~in respect of **Transmission Systems**~~**The Company**, **Relevant Transmission Licensees**, **Network Operators** and **Restoration Contractors** may have in the restoration processes as detailed in the relevant **OC9 De-Synchronised Island Procedures** ~~and~~, **Local Joint Restoration Plans** and **Distribution Restoration Zone Plans**.

OC9.2.~~5~~6 To identify and address as far as possible the events and processes necessary to enable the restoration of the **Total System**, after a **Total Shutdown** or **Partial Shutdown**. This is likely to require the following key processes to be implemented, typically, but not necessarily, in the order given below:

(i) ~~(i)~~ Selectively implement **Local Joint Restoration Plans**

(ii) ~~(ii~~Selectively implement **Distribution Restoration Zone Plans** in conjunction with **Network Operators**

(iii) Expand **Power Islands** to supply **Power Stations**

(~~iii~~iv) Expand and merge **Power Islands** leading to **Total System** energisation

(~~iv~~v) Selectively reconnect **Demand**

(vi) Facilitate and co-ordinate returning the **Total System** back to normal operation

(vii) Resumption of the **Balancing Mechanism** if suspended in accordance with the provisions of the **BSC**.

OC9.3 SCOPE

OC9.3.1 **OC9** applies to **The Company** and to **Users**, which in **OC9** means:-

(a) **Generators**;

(b) **Network Operators**; ~~and~~

(c) **Non-Embedded Customers**;

(d) **HVDC System Owners**;

(e) **DC Converter** owners including **DC Converter Station** owners

(f) **Restoration Contractors**; and

(h) **Relevant Transmission Licensees** as provided for in the **STC**.

OC9.3.2 The procedure for the establishment of emergency support/contingency planning between **The Company** and **Externally Interconnected System Operators** is set out in the **Interconnection Agreement** with each **Externally Interconnected System Operator**.

~~OC9.3.3 In respect of **Transmission Systems**,~~

OC9.4 ~~and OC9.5 also apply to **Relevant Transmission Licensees**.~~

~~OC9.4 BLACK START~~ SYSTEM RESTORATION

Total Shutdown ~~And~~and Partial Shutdown

OC9.4.1 A "**Total Shutdown**" is the situation existing when all generation has ceased and there is no electricity supply from **External Interconnections**. Therefore, the **Total System** has shutdown with the result that it is not possible for the **Total System** to begin to function again without **The ~~Company 's~~Company's** directions relating to ~~a **Black Start**~~**System Restoration**.

OC9.4.2 A "**Partial Shutdown**" is the same as a **Total Shutdown** except that all generation has ceased in a separate part of the **Total System** and there is no electricity supply from **External Interconnections** or other parts of the **Total System** to that part of the **Total System**. Therefore, that part of the **Total System** is shutdown with the result that it is not possible for that part of the **Total System** to begin to function again without **The Company's** directions relating to ~~a **Black Start**.~~ **System Restoration**.

OC9.4.3 During a **Total Shutdown** or **Partial Shutdown** and during the subsequent recovery, the **Licence Standards** may not apply and the **Total System** may be operated outside normal voltage and **Frequency** standards.

OC9.4.4 In a **Total Shutdown** and in a **Partial Shutdown** and during the subsequent recovery, it is likely to be necessary for **The Company** to issue **Emergency Instructions** in accordance with BC2.9.

OC9.4.5 ~~Black Start Service Providers~~Contribution to System Restoration

The Company will initially start to restore the **System** following a **Total Shutdown** or **Partial Shutdown** by issuing instructions directly to **Restoration Contractors** through one or more **Local Joint Restoration Plans** as provided for in OC9.4.5.1 and/or by instructing **Network Operators** to activate one or more **Distribution Restoration Zone Plans** as provided for in OC9.4.5.2.

OC9.4.5.1 **Black Start Service Providers**Local Joint Restoration

OC9.4.5.1.1 **Local Joint Restoration Plans** are registered pursuant to the **Bilateral Agreement** as having the capability to dependent upon **Anchor Restoration Contractors** who upon instruction from **The Company** (or **Relevant Transmission Licensee** in Scotland), shall **Start-Up** their **Anchor Plant** from **Shutdown** and to energise a part of the **Total System**, or be **Synchronised** to the **System**, upon instruction from **The Company** within two hours, without an external electrical power supply ("**Black Start Capability**").

OC9.4.5.2 For each **Black Start Station** and **Black Start HVDC System**, a **Local Joint Restoration Plans** may also be dependent upon **Top Up Restoration Contractors**. A **Local Joint Restoration Plan** may include more than one **Restoration Contractor** whose **Plant** has an **Anchor Plant Capability** or **Top Up Capability**. When a **Local Joint Restoration Plan** is activated, only one **Restoration Contractor** will operate as the **Anchor Generator** with the other **Restoration Contractors** potentially taking roles as **Top-Up Contractors**. The **Local Joint Restoration Plan** will detail how these responsibilities will be allocated.

OC9.4.5.1.2 **Local Joint Restoration Plans** will be produced jointly by **The Company**, the **Relevant Transmission Licensees**, relevant **Black Start Service Provider**Restoration Contractors and relevant **Network Operator**Operators in accordance with the provisions of OC9.4.7.12.6.1(a). The **Local Joint Restoration Plan** will detail the agreed method and procedure by which a **Genset** at a **Black Start Station** (possibly with other **Gensets** at that **Black Start Station**) and **Black Start HVDC Systems**Anchor Plant will energise part of the **Total System** and in combination with **Top Up Restoration Plant** (where necessary) to meet complementary local **Demand** so as to form a **Power Island**.

OC9.4.5.3 In respect of **Scottish Transmission Systems**, a **Local Joint**2 Distribution Restoration **Plan** may cover more than one **Black**Zones

OC9.4.5.2.1 **Distribution Restoration Zone Plans** are dependent upon **Anchor Restoration Contractors** who, upon instruction from relevant **Network Operators**, shall **Start Station** or **Black Start HVDC-Up** their **Anchor Plant** from **Shutdown** and energise a part of a **Network Operator's System** and may , , within eight hours, without an external electrical power supply. A **Distribution Restoration Zone Plan** may also be dependent upon **Top Up Restoration Contractors**.

OC9.4.5.2.2 For each **Distribution Restoration Zone**, a **Distribution Restoration Zone Plan** will be produced with and include obligations onjointly by the **Network Operator**, **The Company**, **Relevant Scottish Transmission Licensees**, **Generators** responsible for **Gensets** not at a **Black Start Station**Transmission Licensee, and **Restoration Contractors** in accordance with the provisions of OC9.4.7.6.1(b). The **Distribution Restoration Zone Plan** will detail the agreed method and other **Users** including **HVDC**procedure by which an **Anchor Plant** will energise part of the **Total System** **Owners** and **DC Converter Station Owners**...in combination with **Top Up Restoration Plant** (where necessary) meet complementary local **Demand** so as to form a **Power Island**. A **Distribution Restoration Zone Plan** may include more than one **Restoration Contractor** whose **Plant** has an **Anchor Plant Capability** or **Top Up Restoration Capability**. When a **Distribution Restoration Zone Plan** is activated, only one **Restoration Contractor** will operate as the **Anchor Restoration Contractor** with the other **Restoration Contractors** potentially taking roles as **Top-Up Restoration Contractors**. The **Distribution Restoration Zone Plan** will detail how these responsibilities will be allocated.

OC9.4.6 **Black Start** SituationSituations requiring System Restoration

In the event of a **Total Shutdown** or **Partial Shutdown**, **The Company** will, as soon as

reasonably practical, inform **Users** (or, in the case of a **Partial Shutdown**, **Users** which in **The Company's** opinion need to be informed) and the **BSCCo** that a **Total Shutdown**, or, as the case may be, a **Partial Shutdown**, exists and that **The Company** intends to implement ~~a **Black Start**.~~**System Restoration.** **The Company** shall (as soon as is practicable) determine, in its reasonable opinion, the time and date with effect from which the **Total Shutdown** or **Partial Shutdown** commenced and notify the **BSCCo** of that time and date.

In the event of a **Total Shutdown** and following such notification, in accordance with the provisions of the **BSC**, the **BSCCo** will determine the **Settlement Period** with effect from which the **Balancing Mechanism** is suspended.

In the event of a **Partial Shutdown** and following such notification, the **Balancing Mechanism** will not be suspended until such time and date that the **Market Suspension Threshold** has been met, or deemed to have been met, in accordance with the provisions of the **BSC**. **The Company** shall carry out the monitoring activities required by paragraph G3.1 of the **BSC**.

Following determination by **The Company** pursuant to its obligations under the **BSC** that the **Market Suspension Threshold** has been met, or deemed to have been met, **The Company** shall (as soon as practicable) inform the **BSCCo** of that time and date at which the **Market Suspension Threshold** was met, or deemed to have been met, and the **BSCCo** will determine the **Settlement Period** in accordance with the provisions of the **BSC** with effect from which the **Balancing Mechanism** will be suspended.

Should **The Company** determine that the **Total System** is capable of returning to normal operation without meeting the **Market Suspension Threshold**, **The Company** will follow the procedure given in OC9.4.7.~~9~~11.

~~The Black Start~~ **System Restoration** will conclude with effect from the time and date determined in accordance with OC9.4.7.~~10.~~6.3(d).

In respect of **Scottish Transmission Systems**, in exceptional circumstances, as specified in the **Local Joint Restoration Plan**, **SPT** or **SHETL**, may invoke such **Local Joint Restoration Plan** for its own **Transmission System** and **Scottish Offshore Transmission Systems** connected to it and operate within its provisions. **Scottish Transmission Licensees**, may instruct relevant **Network Operators** to activate one or more **Distribution Restoration Zone Plans**.

OC9.4.7 ~~Black Start~~SYSTEM RESTORATION PROCEDURE

OC9.4.7.1 The procedure necessary for a recovery from a **Total Shutdown** or **Partial Shutdown** is known as a ~~"**Black Start**".~~**System Restoration.** The procedure for a **Partial Shutdown** is the same as that for a **Total Shutdown** except that it applies only to a part of the **Total System**. It should be remembered that a **Partial Shutdown** may affect parts of the **Total System** which are not themselves shutdown.

OC9.4.7.2 The complexities and uncertainties of recovery from a **Total Shutdown** or **Partial Shutdown** require that **OC9** is sufficiently flexible in order to accommodate the full range of **User's Plant** and **Apparatus** and **Total System** characteristics and operational possibilities, and this precludes the setting out in the **Grid Code** itself of concise chronological sequences. The overall strategy will, in general, include the overlapping phases of ~~establishment~~the use of ~~**Genset(s)**,~~generating **Plant**, at an isolated **Power Station**, or isolated **HVDC System** or isolated **DC Converter Station**, together with complementary local **Demand**, termed ~~"~~**Power Islands**~~",~~, step by step integration of these **Power Islands** into larger sub-systems which includes utilising the procedures in OC9.5 (**Re-Synchronisation** of ~~**De-Synchronised Island**~~**Power Islands**) and eventually re-establishment of the complete **Total System**.

The Company Instructions

OC9.4.7.3 **The** procedures for a **Black Start** will, therefore, be those specified by **The Company** at the time.will determine and instruct relevant **Users** to start **System Restoration**. These instructions will normally recognise any applicable **Local Joint Restoration Plan**. **Users** and/or **Distribution Restoration Zone Plan**. **User's** shall abide by **The Company's** instructions during a **Black Start** situation**System Restoration**, even if these conflict with the general overall strategy outlined in OC9.4.7.26.3 or any applicable **Local Joint Restoration Plan**. and/or **Distribution Restoration Zone Plan** although a **User** may still reject an **Emergency Instruction** but only on safety grounds (relating to personnel or plant) and this must be notified to **The Company** immediately by telephone in accordance with the requirements of BC2.9.2.1. **The Company's** and/or **Network Operator's** instructions may (although this list should not be regarded as exhaustive) be to a **Black Start Station** or **Black Start HVDC System** issued to:-

(a) **Restoration Contractors** relating to the commencementstart of supplying **Active Power**, to a and subsequent pick up of **Demand**;
(b) **Network OperatorOperators** or **Non-Embedded CustomerCustomers** relating to the restoration of **Demand**, and to a **Power Station**;
(c) **Generators** or **HVDC System Owners** or **DC Converter Station** owners relating to preparationthe preparations for commencement of supplyingstarting to supply **Active Power** when an external power supply is made available to it, and in each case;
(d) **Network Operators** to activate a **Distribution Restoration Zone Plan**.

Each of the above cases may include the requirement to undertake switching.

In respect of **Scottish Transmission Systems**, **SPT** and **SHETL** will act on **The Company's** behalf in accordance with its duties under the relevant **Local Joint Restoration Plan**. **Scottish Users** or **Distribution Restoration Zone Plan**. **Restoration Contractors** in Scotland shall abide by **SPT's** or **SHETL's** instructions given in accordance with the **Local Joint Restoration Plan** during a **Black Start** situationor **Network Operator's** instructions given in accordance with the **Distribution Restoration Zone Plan**.

OC9.4.7.4 (a) **Black Start** **System Restoration** following a **Total Shutdown** or where the **Balancing Mechanism** has been suspended following a **Partial Shutdown**

During a **Black Start** situation**System Restoration** where the **Balancing Mechanism** has been suspended, all instructions by **The Company** to **Users** will be deemed to be **Emergency Instructions** under BC2.9.2.2 (iii). All such **Emergency Instructions** will recognise any differing **Black Start** operational capabilities (however termed) set out in the relevant **Ancillary Services Agreement** in preference to the declared operational capability as registered pursuant to **BC1** (or as amended from time to time in accordance with the **BC**). For the purposes of these instructions the **Black Start** will be an emergency circumstance under BC2.9.

In Scotland, **Gensets** or **HVDC Systems** or **DC Converter Station** that are not at **Black Start Stations** or **Black Start HVDC Systems**, but which are part of a **Local Joint Restoration Plan**, may be instructed in accordance with the provisions of that **Local Joint Restoration Plan**.

Instructions issued to **Network Operators** in England and Wales to activate a **Distribution Restoration Zone Plan** will be issued by **The Company** as **Emergency Instructions**. **Network Operators** will then proceed in accordance with the provisions of the **Distribution Restoration Zone Plan**. Such instructions will be deemed to be **Emergency Instructions** under BC2.9.2.2 (iiiv). The **Network Operator** will be responsible for the operation of the **Distribution Restoration Zone** which will take into account the capabilities of **Restoration Contractors' Plant** and **Apparatus** and other **Plant** and **Apparatus** within the **Network Operator's System**. A **Restoration Contractor** may reject an **Emergency Instruction** but only on safety grounds (relating to personnel or plant) and this must be notified to **The Network Operator** immediately. Such instructions shall be pursuant to the terms of the **Distribution Restoration Zone Plan**.

Transmission Licensees in Scotland may issue instructions (which shall be deemed to be **Emergency Instructions**) to relevant Scottish **Network Operators** to activate one or more **Distribution Restoration Zone Plans**. ~~The~~ **Network Operators** in Scotland will be responsible for the operation of the relevant **Distribution Restoration Zone** which will take into account the capabilities of **Restoration Contractors' Plant** and **Apparatus** and other **Plant** and **Apparatus** within the **Network Operator's System**. A **Restoration Contractor** may reject an **Emergency Instruction** but only on safety grounds (relating to personnel or plant) and this must be notified to the relevant Scottish **Network Operator** immediately. Such instructions shall be pursuant to the terms of the **Distribution Restoration Zone Plan**.

(b) ~~**Black Start**~~ **System Restoration** following a **Partial Shutdown** where the **Balancing Mechanism** has not been suspended

During a ~~**Black Start** situation~~**Partial Shutdown** where the **Balancing Mechanism** has not been suspended, all instructions ~~in relation~~ to ~~**Black Start Stations** and~~**Users** connected to ~~**Network Operators, Black Start HVDC Systems** which are part of an invoked **Local Joint Restoration Plan**~~the **Power Island** will ~~(unless **The Company** specifies otherwise)~~ be deemed to be **Emergency Instructions** under BC2.9.2.2 (~~iv) and~~iv~~ii~~). All such **Emergency Instructions** will recognise any differing ~~**Black Start**~~ operational capabilities (however termed) set out in the relevant **Ancillary Services Agreement** in preference to the declared operational capability as registered pursuant to **BC1** (or as amended from time to time in accordance with the **BC**). ~~For the purposes of these instructions the **Black Start** will be an emergency circumstance under BC2.9.~~

During ~~a **Black Start** situation~~ **System Restoration** where the **Balancing Mechanism** has not been suspended, **The Company** may issue instructions to ~~**Users** other than **Black Start Stations** and **Network Operators** which are part of an invoked **Local Joint Restoration Plan**.~~**Network Operators** in England and Wales to activate a **Distribution Restoration Zone Plan**. Such instructions will be deemed to be **Emergency Instructions** under BC2.9.2.2 (iv). The **Network Operator** will be responsible for the operation of the **Distribution Restoration Zone** which will take into account the capabilities of **Restoration Contractor's Plant** and other **Plant** and **Apparatus** within the **Network Operator's System**. Such instructions would be ~~**Emergency Instructions**~~ pursuant to ~~BC2.9.1.2(e)(i) subject to~~ the ~~requirements~~terms of ~~BC2.9.2.2 being met.~~ the **Distribution Restoration Zone Plan**.

In Scotland, **Relevant Transmission Licensee's** may issue instructions (which would be deemed to be **Emergency Instructions**) to Scottish **Network Operators**, to activate on one or more **Distribution Restoration Zone Plans**.

OC9.4.7.

~~In Scotland, **Gensets** and **HVDC Systems** or **DC Converter Station** that are not at **Black Start Stations** or **Black Start HVDC Systems**, but which are part of an invoked **Local Joint Restoration Plan**, may be instructed in accordance with the provisions of that **Local Joint Restoration Plan**.~~

~~(c)~~ 5 Requirements to inform **The Company** and/or **Network Operator** where a **Genset**, **HVDC System**~~-~~, **DC Converter** or ~~**DC Converter**~~**Restoration Contractor's Plant** and **Apparatus** cannot operate within its safe operating limits during the **Demand** restoration process

~~If~~ OC9.4.7.5.1 If following the successful initiation and subsequent termination of a **Local Joint Restoration Plan** or **Distribution Restoration Zone Plan** and during the ~~**Demand** restoration~~ wider **System Restoration** process, any **Genset** or **HVDC System** or **DC Converter Station** or **Restoration Contractor's Plant** and **Apparatus** cannot, because of the **Demand** being experienced, keep within its safe operating parameters, the ~~**Black Start Service Provider** shall, unless a **Local Joint**~~**Generator** or **HVDC System Owner** or **DC Converter Station** owner or **Restoration** ~~**Plan** is in operation~~**Contractor** shall, inform **The Company**~~.~~ and relevant **Network Operator**, **The Company** or relevant **Network Operator** (as appropriate) will, where possible, either instruct **Demand** to be altered or will re-configure the ~~**National Electricity Transmission**~~ **Total System** or will instruct a **User** or **Restoration Contractors** to re-configure its **System** in order to alleviate the problem being experienced by the **Genset** or **HVDC System** or **DC Converter** ~~**Station**~~**.or Restoration Contractor's Plant** and **Apparatus**. If a **Local Joint Restoration Plan** or **Distribution Restoration Zone Plan** is in operation, then the arrangements set out therein shall apply. ~~However~~In both scenarios, **The Company** and/or **Network Operator** accepts that any decision to keep a **Genset** or **HVDC System** or **DC Converter Station** or **Restoration Contractor's Plant** and **Apparatus** operating, if outside its safe operating parameters, is one for the ~~**Black Start Service Providers**~~**User** or **Restoration Contractor** concerned alone and accepts that the ~~**Black Start Service Provider**~~**User** or **Restoration Contractor** may change output on that **Genset** or **HVDC System** or **DC Converter** ~~**Station**~~or **Restoration Contractor's Plant** and **Apparatus** if it believes it is necessary for safety reasons (whether relating to personnel or **Plant** and/or **Apparatus**). If such a change is made without prior notice, then the ~~**Black Start Service Provider**~~**User** or **Restoration Contractor** shall inform **The Company** and/or **Network Operator** as soon as reasonably practical (unless a **Local Joint Restoration Plan** and/or **Distribution Restoration Zone Plan** is in operation in which case the arrangements set out therein shall apply). In the case of a **Distribution Restoration Zone**, where the **Network Operator** experiences situations where any **Restoration Contractor's Plant** and **Apparatus** is unable to keep within safe operating parameters and this is likely to affect the integrity and progression of the **Distribution Restoration Zone**, the **Network Operator** shall inform **The Company** without delay.

~~Embedded Power Stations~~

~~OC9.4.7.5 Without prejudice to the provisions of OC9.4.7.8, **Network Operators** with **Embedded Power Stations** or **Embedded HVDC Systems** or **Embedded DC Converter Stations** will comply with any directions of **The Company** to restore **Demand** to be met by the **Embedded Power Stations**, **Embedded HVDC Systems** or **Embedded DC Converter Stations**.~~

OC9.4.7.6 Local Joint Restoration Plan ~~operation~~and Distribution Restoration Zone Plan Establishment, Testing and Provisions

OC9.4.7.6 ~~(a)~~ .1 Restoration Plan Establishment

The following process shall apply for the establishment of **Restoration Plans**:

a) For a **Local Joint Restoration Plan**, **The Company** will identify the need to introduce or modify a **Local Joint Restoration Plan** and coordinate with the relevant parties as required in this OC9.4.7.6.1.

b) For a **Distribution Restoration Zone Plan** where **The Company** and a relevant **Network Operator** agree that introducing or modifying a **Distribution Restoration Zone** may be beneficial, **The Company**, the **Relevant Transmission Licensee** (where appropriate) and the **Network Operator** shall explore the possibility of establishing a **Distribution Restoration Zone Plan** as required in this OC9.4.7.6.1.

c) The **Company**, the **Relevant Transmission Licensee** (where appropriate) and the **Network Operator** will discuss and agree the detail of a **Restoration Plan** as soon as reasonably practicable after the potential requirement for a **Restoration Plan** is identified. This may involve discussions between relevant potential **Restoration Contractors**, **The Company** and the **Network Operator**.

d) For a **Distribution Restoration Zone Plan** an initial feasibility assessment carried out jointly by **The Company** and **Network Operator** may result in **The Company** running a procurement / tender process. If after discussions or analysis, **The Company**, the **Relevant Transmission Licensee** (where appropriate) and **Network Operator** agree a **Distribution Restoration Zone Plan** is not viable, then no further work to develop the **Distribution Restoration Zone Plan** needs to be carried out.

e) Each **Restoration Plan** will be in relation to a specific **Anchor Plant** and may include one of more **Top Up Restoration Plants**.

f) The preparation of each **Restoration Plan** shall include a check whether any network assets cited in each **Restoration Plan** are included in any other **Restoration Plan**, and if so, all the **Local Joint Restoration Plans** or **Distribution Restoration Zone Plans** containing common assets shall include a specific step that prohibits more than one of any of these **Restoration Plans** from being activated at any one point in time.

g) The **Restoration Plan** will record which **Restoration Contractors** and which **Restoration Contractor's** sites are covered by the **Restoration Plan** and set out what is required from **The Company**, the **Network Operator**, each **Relevant Transmission Licensees** and each **Restoration Contractor** should a **System Restoration** situation arise.

h) **Restoration Plans** will allow for one of several **Restoration Contractors** to take the single role of **Anchor Generator** within the **Restoration Plan** and for others to provide **Top-Up Restoration Capabilities**. When the **Restoration Plan** is activated, one of the first tasks shall be the designation of the **Anchor Generator** and confirmation of which parties are acting as **Top Up Restoration Contractors**.

i) Each **Local Joint Restoration Plan** shall be prepared by **The Company**. Each **Distribution Restoration Zone Plan** shall be prepared by the relevant **Network Operator**. In both cases the **Restoration Plan** will be agreed between **Network Operator**, **The Company**, the **Relevant Transmission Licensee** and relevant **Restoration Contractors**.

j) Each page of the **Restoration Plan** shall bear a date of issue and the issue number.

k) When a **Restoration Plan** has been prepared, it shall be sent to all parties involved for confirmation of its accuracy.

l) The **Restoration Plan** shall then (if its accuracy has been confirmed) be signed on behalf of **The Company**, the **Network Operator**, each **Relevant Transmission Licensee** and each relevant **Restoration Contractor** by way of written confirmation of its accuracy.

m) Once agreed under this OC9.4.7.6.1, the procedure will become a **Restoration Plan** under the Grid Code and (subject to any change pursuant to this OC9) will apply to **The Company**, the **Network Operator**, the **Relevant Transmission Licensees** and the relevant **Restoration Contractors** as if it were part of the Grid Code.

n) A copy of each signed **Local Joint Restoration Plan** will be distributed by **The Company** to the **Network Operator**, each **Relevant Transmission Licensee** and to each **Restoration Contractor** accompanied by a note indicating the date of implementation.

o) A copy of each signed **Distribution Restoration Zone Plan** will be distributed by the **Network Operator** to **The Company**, each **Relevant Transmission Licensee** and to each **Restoration Contractor** accompanied by a note indicating the date of implementation.

p) **The Company**, **Network Operators**, the **Relevant Transmission Licensees** and **Restoration Contractors** must make the **Restoration Plan** readily available to the relevant operational staff.

q) Each **Restoration Plan** will include the test criteria to be satisfied by each **Restoration Contractor's Plant** and **Apparatus** when subject to the testing requirements of OC5.7.

r) If any party to a **Restoration Plan** becomes aware that a change is needed to that **Restoration Plan**, it shall, in the case of **Local Joint Restoration Plan**, contact **The Company** or in the case of a **Distribution Restoration Zone Plan**, the **Network Operator** to initiate a discussion between **The Company**, or the **Network Operator** and the relevant parties to seek to agree the relevant change. The principles applying to establishing or modifying a **Restoration Plan** under this OC9.4.7.6.1 shall apply to such discussions and to any consequent changes.

OC9.4.7.6.2 Restoration Plan Testing

The Company, **Relevant Transmission Licensees**, the **Network Operator** and the relevant **Restoration Contractors** shall conduct regular joint exercises of the **Restoration Plan** to which they are parties. The objectives of such exercises include:

- To test the effectiveness of the **Restoration Plan**;
- To provide for joint training of the parties in respect of the **Restoration Plan**;
- To maintain the parties' awareness and familiarity of the **Restoration Plan**;
- To promote understanding of each party's role under the **Restoration Plan**; and
- To identify any improvement areas which should be incorporated into the **Restoration Plan**.

The Company shall propose to the parties to a **Restoration Plan** a date for the exercise to take place. All the **Restoration Plan** parties will jointly share the task of planning, preparing, participating in, and facilitating the exercises, which will normally be in desktop format or as otherwise agreed. The precise timing of the exercise for each **Restoration Plan** will be agreed by all parties, but will not be less than once every 3 years. These exercises shall be run as part of the wider assurance activities as provided for under OC5.7.4

OC9.4.7.6.3 Restoration Plan Provisions

The following provisions in this OC9.4.7.6.3 apply in relation to a**Restoration Plans**. For **Local Joint Restoration Plan**. As set out in OC9.4.7.3**Plans**, **The Company** may issue(or in Scotland the relevant **Transmission Licensee** as assigned by **The Company** under STCP 06-1) are designated as the lead operator; for **Distribution Restoration Zone Plan**s, the **Network Operator** is the lead operator.

(a) Where the lead operator, issues instructions which conflict with a **Local Joint Restoration Plan**. In such cases, these instructions will take precedence over the requirements of the **Local Joint Restoration Plan**. (as set out in OC9.4.7.6.1).

i.) When issuing such instructions, **The Company** shallthe lead operator will state whether or not it wishes the remainder of the **Restoration Plan** to apply. Where the lead operator has stated that it wishes the remainder of the **Restoration Plan** to apply, the other parties to the plan may give notice that it is not possible to operate the **Restoration Plan** to the lead operator and the other parties to plan.

ii.) The lead operator shall immediately consult with all parties to the **Restoration Plan**. Unless all parties reach agreement as to how the **Restoration Plan** shall operate in those circumstances, operation in accordance with the **Restoration Plan** will terminate and parties will be relieved of their obligations under the **Restoration Plan** in accordance with OC9.4.7.6.3(d) below.

(b) The preparation of each **Restoration Plan** shall include a check whether any network assets cited in another **Local Joint Restoration Plan** or another **Distribution Restoration Zone Plan** are included in the plan, and if so, all the **Local Joint Restoration Plans** or **Distribution Restoration Zone Plans** containing common assets shall include a specific step that prohibits more than one of any of these plans from being activated at any one point in time.

(c) The lead operator will advise other relevant parties of the requirement to switch their **User Systems** to segregate their **Demand** and to carry out such other actions as set out in the **Restoration Plan**. The relevant party will then operate in accordance with the provisions of the **Restoration Plan**.

(d) Operation of the **Restoration Plan** shall be terminated by the lead operator either when:

i.) the **Restoration Plan** has been successfully implemented and the resulting **Power Island** has been synchronised to another **Power Island** following instruction from **The Company**. In this case, the arrangements for synchronising the **Power Island** to the **System** will be set out in the **Restoration Plan**; or

ii.) the **Restoration Plan** has not been / is not being successfully implemented. In this circumstance, provided for in OC9.4.7.6.3(a), if an agreement is not reached on whether or not to apply the remainder of the plan or if **The Company**, in coordination with the other parties, confirms that it does not wish the remainder of the **Restoration Plan** to apply, the **Restoration Plan** shall be terminated. In this case **The Company** and the **Network Operator** in conjunction with the **Restoration Contractors** shall agree and implement the most appropriate course of action which should aim to maintain supplies to as many customers as possible.

In both cases the lead operator shall notify all parties to the **Restoration Plan** accordingly.

OC9.4.7.7 Local Joint Restoration Plan ~~to~~ Operation

Following a **Total Shutdown** or **Partial Shutdown** the following shall apply~~. If, not withstanding that~~:

OC9.4.7.7.1 Where **The Company**, as part of ~~a~~ **System Restoration**, has ~~stated that it wishes the remainder of~~ given an instruction to a **Restoration Contractor** to initiate **Start-Up**, the relevant **Restoration Contractor** will prepare to **Start-Up** their **Plant** in accordance with the **Local Joint Restoration Plan** ~~to apply, the **Black Start Service Provider** or the relevant **Network Operator** consider that **The Company's** instructions mean that it is not possible to operate the **Local Joint Restoration Plan** as modified by those instructions, any of them may give notice to **The Company** and the other parties to the **Local Joint Restoration Plan** to this effect and **The Company** shall immediately consult with all parties to the **Local Joint Restoration Plan**. Unless all parties to the **Local Joint Restoration Plan** reach an agreement forthwith as to how the **Local Joint Restoration Plan** shall operate in those circumstances, operation in accordance with the **Local Joint Restoration Plan** will terminate~~.

~~(b) Where **The Company**, as part of a **Black Start**, has given an instruction to a **Black Start Service Provider** to initiate **Start-Up**, the relevant **Genset(s)** at the **Black Start Station** or **Black Start HVDC System** will **Start-Up** in accordance with the **Local Joint Restoration Plan**.~~

~~(c)~~
OC9.4.7.7.2 **The Company** will advise the relevant **Network Operator** of the requirement to switch its **User System** so as to segregate its **Demand** and to carry out such other actions as set out in the **Local Joint Restoration Plan**. The relevant **Network Operator** will then operate in accordance with the provisions of the **Local Joint Restoration Plan**.

(d) OC9.4.7.7.3 **The Company**, in coordination with **Relevant Transmission Licensees**, will ensure that switching carried out on the **National Electricity** **Transmission System** and other actions are as set out in the **Local Joint Restoration Plan**.

(e)OC9.4.7.7.4 Following notification from the **Black Start Service Provider**Anchor **Restoration Contractor** that the **Black Start Station** or **Black Start HVDC System**their **Anchor Plant** is ready to accept load and, where provided for in the **Local Joint Restoration Plan**, **Top Up Restoration Contractors** are in a position to subsequently synchronise to the **Total System** as soon as external site supplies are restored, **The Company** will instruct the **Black Start Service Provider**Anchor **Restoration Contractor** (as provided for in OC9.4.5.2.2) to energise part of the **Total System**. The **Black Start Service Provider**Anchor **Restoration Contractor** and the relevant **Network Operator** will then, in accordance with the requirements of the **Local Joint Restoration Plan**, establish communication and agree the output of the relevant **Genset(s)** and/or **HVDC System** and/or **DC Converter Station**Anchor **Plant** and the connection of **Demand** so as to establish a **Power Island**. As part of establishing a **Power Island**, **The Company** may instruct one or more **Top Up Restoration Contractors** to subsequently synchronise their **Plant** and **Apparatus** to the **System** to facilitate supplying more **Demand** in the **Power Island** in accordance with the requirements of the **Local Joint Restoration Plan**. During this period, the **Black Start Service Provider**Restoration **Contractors** will be required to regulate the output of thetheir relevant **Black Start Station** or **Black Start HVDC System**Plant to the **Demand** prevailing in the **Power Island** in which it is situated, on the basis that it will (where practicable) seek to maintain the **Target Frequency**. The **Genset(s)** at the **Black Start Station** or **Black Start HVDC System**The **Restoration Contractor's Plant** and **Apparatus** will (where practical) also seek to follow the requirements relating to **Reactive Power** (which may include the requirement to maintain a target voltage) set out in the **Local Joint Restoration Plan**.

(f)OC9.4.7.7.5 Operation in accordance with the **Local Joint Restoration Plan** will be terminated by **The Company** or relevant **Transmission Licensee** in Scotland (by notifying the relevant **Users**) prior to**Network Operator** and relevant **Restoration Contractors**) immediately after successfully connecting the **Power Island** to another **Power Island**s (other than, in Scotland, as allowed for in the **Local Joint Restoration Plan**), or to the , or to the **User System** of another **Network Operator**, or to the synchronising of **Gensets** at other **Power Stations** (which are not owned and operated by **Restoration Contractors**) or **HVDC Systems** or **DC Converter Station** (other than, in Scotland, those forming part of the **Local Joint Restoration Plan**).**Stations.** Operation in accordance with the **Local Joint Restoration Plan** will also terminate in the circumstances provided for in OC9.4.7.6(a.3(d) if an agreement is not reached or if **The Company** states that it does not wish the remainder of the **Local Joint Restoration Plan** to apply. **Users** will then comply with the **Bid-Offer Acceptances** or **Emergency Instructions** of **The Company**.

(g) In Scotland, **Gensets** or **HVDC Systems** or **DC Converter Station** included in a **Local Joint Restoration Plan**, but not at a **Black Start Station** or **Black Start HVDC System**, will operate in accordance with the requirements of the **Local Joint Restoration Plan**.

OC9.4.7.8 Distribution Restoration Zone Operation

Following a **Total** or **Partial Shutdown** the following shall apply:

OC9.4.7.8.1 Where **The Company** wishes a **Network Operator** to activate a **Distribution Restoration Zone Plan**, **The Company** will issue an **Emergency Instruction** to that **Network Operator** for it to activate the relevant **Distribution Restoration Zone Plan** whilst also informing the **Relevant Transmission Licensee**. In Scotland the instruction to a Scottish **Network Operator** to activate a Scottish **Distribution Restoration Zone Plan** would be given by the relevant **Scottish Transmission Licensee**. For the avoidance of doubt, **The Company** will issue instructions to initiate **System Restoration** in Scotland via STCP 06-1 which includes arrangements for the activation of Scottish **Distribution Restoration Zone Plans**.

OC9.4.7.8.2 Upon receipt of an **Emergency Instruction** from **The Company** (or instruction from the relevant **Scottish Transmission Licensee**), the **Network Operator** will confirm and acknowledge receipt in accordance with the requirements of BC2.9.2 and activate a **Distribution Restoration Zone Plan** as provided for in OC9.4.7.6.1(b). All instructions to relevant **Restoration Contractors** party to the **Distribution Restoration Zone Plan** will be issued by the **Network Operator**.

OC9.4.7.8.3 The operation of the **Distribution Restoration Zone** will then continue in accordance with the **Distribution Restoration Zone Plan** until it is terminated in accordance with the requirements of OC9.4.7.6.3(d).

OC9.4.7.8.4 Where **The Company** issues an **Emergency Instruction** (or in Scotland where a **Relevant Scottish Transmission Licensee** issues an instruction) to a **Network Operator** to activate a **Distribution Restoration Zone Plan**, the **Network Operator** will first issue instructions to the **Restoration Contractor** (as provided for in OC9.4.5.1.1) informing them of the requirement to prepare their **Anchor Plant** to re-energise a **Distribution Restoration Zone** (or part thereof) and will (if applicable) then consequently issue instructions to **Restoration Contractors** in respect of their **Top Up Restoration Plant** informing them of the requirement to prepare their **Top Up Restoration Plant** accordance with the **Distribution Restoration Zone Plan**. The **Network Operator** shall also liaise with the **Relevant Transmission Licensee** where they are party to the **Distribution Restoration Zone Plan** to ensure switching can take place in the appropriate timescales. The **Network Operator** in liaison with the **Restoration Contractor(s)** will discuss when their **Anchor Plant** and **Top Up Plant** are expected to be available. For the avoidance of doubt, the **Anchor Restoration Contractor** shall not start to re-energise the **Distribution Restoration Zone** until instructed by the **Network Operator** in accordance with OC9.4.7.8.10 and this instruction shall only be given once the **Network Operator** has configured its **System** and taken the necessary additional actions to prepare the **Distribution Restoration Zone** to be re-energised. This may include any automatic switching that takes place through the action of any **Distribution Restoration Zone Control System**. It is only then, that once external site supplies have been restored, and as appliable to the **Distribution Restoration Zone Plan**, that **Network Operators** will give instructions (by manual or automatic means) to **Restoration Contractors** in respect of **Top Up Restoration Plant** to synchronise to the **Network Operator's System** in accordance with OC9.4.7.8.10.

OC9.4.7.8.5 All relevant **Restoration Contractors** and where applicable **Relevant Transmission Licensees** will inform the **Network Operator** of the indicative time when their **Plant** and **Apparatus** will be ready to energise or synchronise to the **Distribution Restoration Zone**.

OC9.4.7.8.6 The **Network Operator** shall inform **The Company** (and the **Relevant Scottish Transmission Licensee** in the case of a Scottish **Distribution Restoration Zone**) and **Transmission Licensees** where they are party to the **Distribution Restoration Zone Plan** advising that it has contacted the appropriate **Restoration Contractors** in accordance with the **Distribution Restoration Zone Plan** and the expected time when the **Anchor Generator** energises the **Distribution Restoration Zone**.

OC9.4.7.8.7 In addition to the requirements of OC9.4.7.8.4 to OC9.4.7.8.6, and in accordance with the **Distribution Restoration Zone Plan**, the **Network Operator** shall start to reconfigure its **System** (by manual or automatic means) such that it is ready to enable the **Anchor Restoration Contractor** to re-energise the **Distribution Restoration Zone** (or part thereof), and where provided for in the **Distribution Restoration Zone Plan**, the subsequent synchronisation of **Top Up Restoration Plant**. To enable this process to take place, the **Network Operator** may need to change the topology and status of its **System** which may include but shall not be limited to changing the status of circuit breakers in addition to switching between pre agreed control system and **Protection** settings. Reconfiguration of the **Network Operator's System** prior to re-energisation of the **Distribution Restoration Zone**, may be achieved by instructions carried out manually, switching carried out remotely from the **Network Operators Control Centre** or via fully automatic means which could include a **Distribution Restoration Zone Control System**. Where a **Transmission Licensee** is party to the **Distribution Restoration Zone Plan**, the **Network Operator** shall liaise with the **Relevant Transmission Licensee** as part of this process to ensure that parts of the **Transmission System** can be energised from the **Distribution Restoration Zone**.

OC9.4.7.8.8 Once the **Network Operator** (and where necessary in accordance with the **Relevant Transmission Licensee**) has reconfigured its **System** and associated **Plant** and **Apparatus** (including but not limited to **Protection** and control system settings) it will contact the **Anchor Restoration Contractor** (be it by manual or automatic means) and agree a time for the **Anchor Plant** to re-energise the **Distribution Restoration Zone** (or part thereof). Where the **Anchor Restoration Contractor** or **Network Operator** needs to change the agreed proposed re-energisation time as a result of an unforeseen event such as, but not limited to, a faulty item of **Plant** or **Apparatus**, safety issue or unavailability of personnel, the **Anchor Restoration Contractor** and/or **Network Operator** will agree a revised re-energisation time. The **Anchor Restoration Contractor** and the relevant **Network Operator** will in accordance with the requirements of the **Distribution Restoration Zone Plan**, establish communication and agree the planned output of the relevant **Anchor Plant** and the connection of **Demand** to plan the formation of the **Power Island**.

OC9.4.7.8.9 The **Network Operator** will inform **The Company** (or relevant **Scottish Transmission Licensee** in the case of a Scottish **Distribution Restoration Zone**) or **Relevant Transmission Licensee** where they are party to the **Distribution Restoration Zone Plan** of the time when the **Anchor Restoration Contractor** is estimated to re-energise a section of the **Network Operator's System**. Should this estimated time vary, the **Network Operator** will inform **The Company** (or relevant **Scottish Transmission Licensee** in the case of a Scottish **Distribution Restoration Zone**) to state the revised estimated re-energisation time and the reason for the change.

OC9.4.7.8.10 The **Restoration Contractor** shall contact the **Network Operator** once their **Anchor Plant** is ready to re-energise the network. The **Network Operator** shall then assess their network status, the estimated re-energisation time as detailed in OC9.4.7.8.8 and if conditions are suitable, the **Network Operator** will issue an instruction to the **Anchor Restoration Contractor** (by manual or automatic means) to re-energise the **Distribution Restoration Zone** (or part thereof). Following the issue of instructions to the **Anchor Restoration Contractor**, and successful re-energisation of the **Distribution Restoration Zone** (or part thereof) the **Network Operator** will instruct (by manual or automatic means) **Top Up Restoration Contractors** party to the **Distribution Restoration Zone Plan** to synchronise to the **Distribution Restoration Zone**. The **Network Operator** shall also inform the **Relevant Transmission Licensee** when an instruction has been issued to the **Restoration Contractor** where they are party to the **Distribution Restoration Zone Plan**.

OC9.4.7.8.11 Once the **Distribution Restoration Zone** (or part thereof) has been re-energised and feeding some local **Demand** or controllable **Demand** provided by a relevant **Restoration Contractor**, they will be required to follow instructions from the **Network Operator** (by manual or automatic means) in accordance with the **Distribution Restoration Zone Plan**. The **Network Operator** and/or **Distribution Restoration Zone Control System** shall issue instructions to **Restoration Contractors** as necessary to ensure the **Distribution Restoration Zone** continues to run in a stable manner. As part of this process, the **Network Operator**, in coordination with **Restoration Contractors**, shall ensure risks to the **Network Operator's System** or the **Restoration Contractor's Plant**, that could arise through disturbances in the **Distribution Restoration Zone**, are minimised as far as reasonably practicable. This may be assisted through a planned series of re-energisation steps within the **Distribution Restoration Zone**, taking account of the capability and performance of the **Restoration Contractor's Plant** at that time.

OC9.4.7.8.12 **Demand** within the **Distribution Restoration Zone** can be restored by manual or remote controlled switching, or automatically by a **Distribution Restoration Zone Control System**. If during the **Demand** restoration process, any relevant **Restoration Contractor's Plant** or **Apparatus** cannot keep within its safe operating parameters, because of the nature of the **Demand** being supplied, the relevant **Restoration Contractor** shall inform the **Network Operator** without undue delay who in turn shall inform **The Company**. In the case of a **Distribution Restoration Zone** in Scotland, the Scottish **Network Operator** shall inform the relevant **Scottish Transmission Licensee**.

In order to help alleviate issues the **Network Operator** or **Distribution Restoration Zone Control System** will, where possible:

i. Instruct relevant **Restoration Contractors** to alter their **Demand**; or

ii. re-configure the topology of the **Distribution Restoration Zone**; or

iii. will instruct the relevant **Restoration Contractor** forming part of the **Distribution Restoration Zone** to re-configure its **System**.

The Company and **Network Operator** (and **Relevant Transmission Licensee** in Scotland) accepts that any decision to keep a relevant **Restoration Contractor's Plant** or **Apparatus** operating, if outside its safe operating parameters, is one for the **Restoration Contractor** concerned alone. **The Company**, the **Network Operator**, and the **Relevant Scottish Transmission Licensee** (for **Distribution Restoration Zones** in Scotland) accepts that the relevant **Restoration Contractor's Plant** and **Apparatus** may have its operating point changed by the relevant **Restoration Contractor** if it believes it is necessary for safety reasons (whether relating to personnel or **Plant** and/or **Apparatus**). If such a change is made without prior notice, then the relevant **Restoration Contractor** shall inform the **Network Operator** as soon as reasonably practical. A **Restoration Contractor** may also reject an instruction issued by a **Network Operator** but only on safety grounds (relating to personnel or plant) and this must be notified to **Network Operator** immediately.

OC9.4.7.8.13 To stabilise the voltage and **Frequency** of the **Network Operator's System** and increase the **Demand** supplied within the **Distribution Restoration Zone**, the **Network Operator** may need to instruct (by manual or automatic means) additional relevant **Restoration Contractors** to **Synchronise** their **Plant** to the **Distribution Restoration Zone** which would be part of the **Distribution Restoration Zone Plan**. The **Network Operator** and/or the **Distribution Restoration Zone Control System** shall ensure **Restoration Contractors** are able (where applicable) to contribute to voltage and **Frequency** control and ensure that adequate positive and negative headroom is maintained on **Restoration Contractor's Plant** and **Apparatus** to enable the management of **Power Island** contingences. For the avoidance of doubt, **The Company** may require **Transmission Licensees** in Scotland to manage the **Frequency** and voltage of **Power Islands** in Scotland as provided for in STCP 06-1 or **Network Operators** to manage the **Frequency** and voltage of **Distribution Restoration Zones** whilst recognising **The Company** has overall responsibility to the wider restoration process in the **GB Synchronous Area**.

OC9.4.7.8.14 As the **Distribution Restoration Zone** supports increasing **Demand**, and as implementation of the **Distribution Restoration Zone Plan** progresses, the **Network Operator** may need to switch between predefined control and **Protection** settings as the need arises.

OC9.4.7.8.15 Expansion of a **Distribution Restoration Zone** to an unenergised **Transmission** busbar and to wider parts of the unenergised **Transmission System** could be part of the **Distribution Restoration Zone Plan** in addition to the requirements of OC9.5.

OC9.4.7.8.16 Operation in accordance with the **Distribution Restoration Zone Plan** will be terminated by the **Network Operator** in accordance OC9.4.7.6.3(d).

OC9.4.7.9 Expansion of Power Islands

The Company will instruct relevant **Users** to expand **Power Islands** to achieve larger **Power Islands** following the successful termination of **Local Joint Restoration Plans** and **Distribution Restoration Zone Plans**.

OC9.4.7.10 Interconnection of Power Islands

~~OC9.4.7.7~~ ~~**The Company** will instruct the relevant **Users** so as to interconnect **Power Islands** to achieve larger sub-systems, and~~ **The Company** will subsequently ~~the interconnection of these sub-systems~~interconnect the expanded **Power Islands** detailed in OC9.4.7.9 to form larger **Power Islands** which will then be connected to form an integrated system as detailed in OC9.5 which is a fundamental component of the **Electricity System Restoration Standard**. This should eventually achieve the re-establishment of the **Total System** or that part of the **Total System** subject to the **Partial Shutdown**, as the case may be. The interconnection of **Power Islands** ~~and sub-systems~~ will utilise the provisions of all or part of OC9.5 (**Re-Synchronisation** of **De-synchronised Power Islands**) and in such a situation such provisions will be part of the ~~**Black Start**~~**System Restoration**.

~~OC9.4.7.8~~ ~~As part of the **Black Start** strategy, each **Network Operator** with either an **Embedded Black Start Station** or **Embedded HVDC System** or **Embedded DC Converter Station**, which has established a **Power Island** within its **User System** or with any **Embedded Power Stations** or **Embedded HVDC Systems** or **Embedded DC Converter Stations** within its **User System**, which have become islanded, may in liaison with **The Company**, sustain and expand these islands in accordance with the relevant provisions of OC9.5 which shall apply to this OC9.4 as if set out here. They will inform **The Company** of their actions and will not **Re-Synchronise** to the **National Electricity Transmission System** or any **User's System** which is already **Synchronised** to the **National Electricity Transmission System** without **The Company 's** agreement.~~

Return the Total System Back to Normal Operation

OC9.4.7.~~9~~11 **The Company** shall, as soon as reasonably practical, inform **Users** and the **BSCCo** when the **Total System** could return to normal operation. Any such determination by **The Company** does not mean that the provisions of Section G paragraph 3 (~~Black Start~~**System Restoration**) of the **BSC** shall cease to apply.

In making the determination that the **Total System** could return to normal operation, **The Company**, would consider, amongst other things, the following areas:

(a) the extent to which the **National Electricity Transmission System** is contiguous and energised;

(b) the integrity and stability of the **National Electricity Transmission System** and its ability to operate in accordance with the **Licence Standards**;

(c) the impact that returning to normal may have on transmission constraints and the corresponding ability to maximise the **Demand** connected; and

(d) the volume of generation, **Electricity Storage** or **Demand** not connected to the **National Electricity Transmission System**; and

(e) the functionality of normal communication systems (~~i.e.~~ie electronic data

communication facilities, **Control Telephony**, etc).

In the event that the **Balancing Mechanism** has been suspended, it will not resume until the start of the **Settlement Period** determined by the **BSC Panel** in accordance with paragraph G3.1.2(d)(i) of the **BSC**.

For the avoidance of doubt, until resumption of the **Balancing Mechanism, The Company** is likely to continue to issue **Emergency Instructions** in accordance with BC2.9.

Users shall use reasonable endeavours to submit **Physical notifications** ten hours prior to the start of the **Settlement Period** determined by the **BSC Panel** in accordance with paragraph G3.1.2(d)(i) of the BSC and as notified by **The Company** to **Users**, in preparation for a return to normal operations.

In the event that the **Balancing Mechanism** has not been suspended and **The Company** has determined that the **Total System** has returned to normal operation, **The Company** shall inform **Users** and the **BSCCo** as soon as possible of the time and date at which (in **The Company's** determination) the **Total System** returned to normal operation.

Conclusion of ~~Black Start~~System Restoration

OC9.4.7.~~10~~12 The provisions of this **OC9** shall cease to apply with effect from either:

(a) Where the **Balancing Mechanism** was suspended, the start of the **Settlement Period** that the **Balancing Mechanism** resumed normal operation, as determined by the **BSC Panel** and notified by the **BSCCo** in accordance with the provisions of the **BSC**; or

(b) Where the **Balancing Mechanism** was not suspended, the end of the **Settlement Period** determined and notified by the **BSCCo** (in accordance with the provisions of the **BSC**) and corresponding to the time and date that **The Company** determined that the **Total System** had returned to normal operation.

Externally Interconnected System Operators

~~OC9.4.7.11 During a **Black Start**~~OC9.4.7.13 Unless an **Interconnector** has an **Anchor Restoration Contract**, **The Company** will, pursuant to the **Interconnection Agreement** with **Externally Interconnected System Operators**, agree with **Externally Interconnected System Operators** when their transmission systems can be **Re-Synchronised**~~ to the **Total System**~~, if they have become separated.

~~OC9.4.7.12 Local Joint Restoration Plan Establishment~~

~~(a) In England and Wales, in relation to each **Black Start Station** and each **Black Start HVDC System**, **The Company**, **NGET,** the **Network Operator** and the relevant **Black Start Service Provider** will discuss and agree a **Local Joint Restoration Plan**. Where at the date of the first inclusion of this OC9.4.7.12 into the **Grid Code** a local plan covering the procedures to be covered in a **Local Joint Restoration Plan** is in existence and agreed, **The Company** will discuss this with **NGET,** the **Network Operator** and the relevant **Generator** or **HVDC System Owner or DC Converter Station Owner** to agree whether it is consistent with the principles set out in this OC9.4. If it is agreed to be so consistent, then it shall become a **Local Joint Restoration Plan** under this **OC9** and the relevant provisions of OC9.4.7.12(b) shall apply. If it is not agreed to be so consistent, then the provisions of OC9.4.7.12(b) shall apply as if there is no **Local Joint Restoration Plan** in place.~~

~~In respect of **Scottish Transmission Systems** where a requirement for a **Local Joint Restoration Plan** is identified, **The Company**, the **Relevant Scottish Transmission Licensee(s)**, the **Network Operator** and **Black Start Service Provider's)** will discuss and agree a **Local Joint Restoration Plan**. In addition other **Users**, including other **Generators** or **HVDC System Owners** or **DC Converter Station Owners**, may be reasonably required by **The Company** to discuss and agree a **Local Joint Restoration Plan**.~~

(b) In England and Wales, where the need for a **Local Joint Restoration Plan** arises when there is none in place, the following provisions shall apply:

(i) **The Company**, **NGET,** the **Network Operator** and the relevant **Black Start Service Provider** will discuss and agree the detail of the **Local Joint Restoration Plan** as soon as the requirement for a **Local Joint Restoration Plan** is identified by **The Company**. **The Company** will notify all affected **Users**, and will initiate these discussions.

(ii) Each **Local Joint Restoration Plan** will be in relation to a specific **Black Start Station** or **Black Start HVDC System**.

(iii) The **Local Joint Restoration Plan** will record which **Users** and which **User Sites** are covered by the **Local Joint Restoration Plan** and set out what is required from **The Company**, **NGET** and each **User** should a **Black Start** situation arise.

(iv) Each **Local Joint Restoration Plan** shall be prepared by **The Company** to reflect the above discussions and agreement.

(v) Each page of the **Local Joint Restoration Plan** shall bear a date of issue and the issue number.

(vi) When a **Local Joint Restoration Plan** has been prepared, it shall be sent by **The Company** to **NGET** and the **Users** involved for confirmation of its accuracy.

(vii) The **Local Joint Restoration Plan** shall then (if its accuracy has been confirmed) be signed on behalf of **The Company** and on behalf of **NGET** and each relevant **User** by way of written confirmation of its accuracy.

(viii) Once agreed under this OC9.4.7.12, the procedure will become a **Local Joint Restoration Plan** under the **Grid Code** and (subject to any change pursuant to this OC9) will apply between **The Company** and **NGET** and the relevant **Users** as if it were part of the **Grid Code**.

(ix) Once signed, a copy of the **Local Joint Restoration Plan** will be distributed by **The Company** to **NGET** and each **User** which is a party to it accompanied by a note indicating the date of implementation.

(x) **The Company**, **NGET** and **Users** must make the **Local Joint Restoration Plan** readily available to the relevant operational staff.

(xi) If **The Company**, or **NGET** or any **User** which is a party to a **Local Joint Restoration Plan**, becomes aware that a change is needed to that **Local Joint Restoration Plan**, it shall (in the case of **The Company**) initiate a discussion between **The Company** and the relevant **Users** to seek to agree the relevant change. If **NGET** or a **User** becomes so aware, it shall contact **The Company** who will then initiate such discussions. The principles applying to establishing a new **Local Joint Restoration Plan** under this OC9.4.7.12 shall apply to such discussions and to any consequent changes.

(xii) **The Company**, **NGET**, the **Network Operator**, and the relevant **Generator**, **or HVDC System Owner or DC Converter Station Owner** will conduct regular joint exercises of the **Local Joint Restoration Plan** to which they are parties. The objectives of such exercises include:

- To test the effectiveness of the **Local Joint Restoration Plan**;
- To provide for joint training of the parties in respect of the **Local Joint Restoration Plan**;
- To maintain the parties' awareness and familiarity of the **Local Joint Restoration Plan**;
- To promote understanding of each parties' roles under a **Local Joint**

Restoration Plan;

- To identify any improvement areas which should be incorporated in to the **Local Joint Restoration Plan**.

- The principles applying to the establishment of a new **Local Joint Restoration Plan** under this OC9.4.7.12 shall apply to any changes to the **Local Joint Restoration Plan**.

The Company will propose to the parties of a **Local Joint Restoration Plan** a date for the exercise to take place, to be agreed with the other parties. All the **Local Joint Restoration Plan** parties will jointly share the task of planning, preparing, participating in and facilitating the exercises, which will normally be in desktop format or as otherwise agreed. The precise timing of the exercise for each **Local Joint Restoration Plan** will be agreed by all parties, but will not be less than one every 8 years.

(c) In respect of **Scottish Transmission Systems**, where the need for a **Local Joint Restoration Plan** arises, the following provisions shall apply:

(i) **The Company**, the **Relevant Scottish Transmission Licensee(s)**, the **Network Operator** and the relevant **Black Start Service Provider** will discuss and agree the detail of the **Local Joint Restoration Plan** as soon as the requirement for a **Local Joint Restoration Plan** is identified by **The Company**. In addition, other **Scottish Users**, including other **Generators**, **HVDC System Owners** and **DC Converter Station Owners**, may be reasonably required by **The Company** to discuss and agree details of the **Local Joint Restoration Plan** as soon as the requirement for a **Local Joint Restoration Plan** is identified by **The Company**. **The Company** will notify the **Relevant Scottish Transmission Licensee(s)** and all affected **Scottish Users**, and will initiate these discussions.

(ii) Each **Local Joint Restoration Plan** may be in relation to either a specific **Black Start Station** or a number of **Black Start Stations**, and may include **Gensets** at **Power Stations** other than a **Black Start Station**. Each **Local Joint Restoration Plan** could equally apply to a specific **Black Start HVDC System** or a number of **Black Start HVDC Systems** and may include **HVDC Systems** or **DC Converter Stations** other than a **Black Start HVDC System**. For the avoidance of doubt, this would not preclude a **Local Joint Restoration Plan** from comprising a combination of **Power Stations**, **HVDC Systems** or **DC Converter Stations** irrespective of whether they have a **Black Start Capability**.

(iii) The **Local Joint Restoration Plan** will record which **Scottish Users** and which **Scottish User Sites** are covered by the **Local Joint Restoration Plan** and set out what is required from **The Company**, the **Relevant Scottish Transmission Licensee(s)** and each **Scottish User** should a **Black Start** situation arise.

(iv) Each **Local Joint Restoration Plan** shall be prepared by **The Company** to reflect the above discussions and agreement.

(v) Each page of the **Local Joint Restoration Plan** shall bear a date of issue and the issue number.

(vi) When a **Local Joint Restoration Plan** has been prepared, it shall be sent by **The Company** to the **Relevant Scottish Transmission Licensee(s)** and **Scottish Users** involved for confirmation of its accuracy.

(v) The **Local Joint Restoration Plan** shall then (if its accuracy has been confirmed) be signed on behalf of **The Company** and on behalf of each relevant **Scottish User** and **Relevant Scottish Transmission Licensee(s)** by way of written confirmation of its accuracy.

(vi) Once agreed under this OC9.4.7.12, the procedure will become a **Local Joint Restoration Plan** under the **Grid Code** and (subject to any change pursuant to this **OC9**) will apply between **The Company**, **Relevant Scottish Transmission Licensee(s)** and the relevant **Scottish Users** as if it were part of the **Grid Code**.

~~(vii) Once signed, a copy of the **Local Joint Restoration Plan** will be distributed by **The Company** to the **Relevant Scottish Transmission Licensee(s)** and each **Scottish User** which is a party to it accompanied by a note indicating the date of implementation.~~

~~(x) **The Company**, the **Relevant Scottish Transmission Licensee(s)** and **Scottish Users** must make the **Local Joint Restoration Plan** readily available to the relevant operational staff.~~

~~(xi) If **The Company**, the **Relevant Scottish Transmission Licensee(s)** or any **Scottish User** which is a party to a **Local Joint Restoration Plan**, becomes aware that a change is needed to that **Local Joint Restoration Plan**, it shall (in the case of **The Company**) initiate a discussion between **The Company**, the **Relevant Scottish Transmission Licensee(s)** and the relevant **Scottish Users** to seek to agree the relevant change. If a **Scottish User** or a **Relevant Scottish Transmission Licensee** becomes so aware, it shall contact **The Company** who will then initiate such discussions. The principles applying to establishing a new **Local Joint Restoration Plan** under this OC9.4.7.12 shall apply to such discussions and to any consequent changes.~~

~~(xii) **The Company**, the **Relevant Scottish Transmission Licensee(s)**, the **Network Operator** and the relevant **Black Start Service Provider** will conduct regular joint exercises of the **Local Joint Restoration Plan** to which they are parties. The objectives of such exercises include:~~

- ~~To test the effectiveness of the **Local Joint Restoration Plan**;~~
- ~~To provide for joint training of the parties in respect of the **Local Joint Restoration Plan**;~~
- ~~To maintain the parties' awareness and familiarity of the **Local Joint Restoration Plan**;~~
- ~~To promote understanding of each parties' roles under a **Local Joint Restoration Plan**;~~
- ~~To identify any improvement areas which should be incorporated in to the **Local Joint Restoration Plan**.~~
- ~~The principles applying to the establishment of a new **Local Joint Restoration Plan** under this OC9.4.7.12 shall apply to any changes to the **Local Joint Restoration Plan**.~~

~~**The Company** will propose to the parties of a **Local Joint Restoration Plan** a date for the exercise to take place, to be agreed with the other parties. All the **Local Joint Restoration Plan** parties will jointly share the task of planning, preparing, participating in and facilitating the exercises, which will normally be in desktop format or as otherwise agreed. The precise timing of the exercise for each **Local Joint Restoration Plan** will be agreed by all parties, but will not be less than one every 8 years.~~

OC9.5 RE-SYNCHRONISATION OF ~~DE-SYNCHRONISED~~POWER ISLANDS

The provisions in this OC9.5 do not apply to the parts of the **Total System** that normally operate **Out of Synchronism** with the rest of the **National Electricity Transmission System**.

Further requirements, including the provision of information, applying to **Re-synchronisation** of ~~**De-synchronised Islands**~~a Power Island following any **Total Shutdown** or **Partial Shutdown** are detailed in OC9.5.6.

OC9.5.1 (a) Where parts of the **Total System** are **Out of Synchronism** with each other (each such part being termed a "**De-SynchronisedPower Island**"),), but where there ishas been no **Total Shutdown** or **Partial Shutdown**, **The Company** will instruct **Users** to regulate generation or **Demand**, as the case may be, to enable the **De-SynchronisedPower Islands** to be **Re-Synchronised** and **The Company** will inform those **Users** when **Re-Synchronisation** has taken place.

(b) As part of that process, there may be a need to deal specifically with **Embedded** generation or storage in those **De-SynchronisedPower Islands**. This OC9.5 provides for how such **Embedded** generation or storage should be dealt with. In Scotland, this OC9.5 also provides for how **Transmission** connected generation in **De-SynchronisedPower Islands** should be dealt with.

(c) In accordance with the provisions of the **BC**, **The Company** may decide that, to enable **Re-Synchronisation**, it will issue **Emergency Instructions** in accordance with BC2.9 and it may be necessary to depart from normal **Balancing Mechanism** operation in accordance with **BC2** in issuing **Bid-Offer Acceptances**.

(d) The provisions of this OC9.5 shall also apply during a **Black StartSystem Restoration** to the **Re-Synchronising** of parts of the **System** following a **Total** or **Partial Shutdown**, as indicated in OC9.4. In such cases, the provisions of the OC9.5 shall apply following completion and/or termination ofwhen the relevant **Local Joint Restoration Plan(s)** process as referred to in OC9.4.7.6(f)..3(d) are completed or terminated.

OC9.5.2 OptionsIsland loading and generation data management

Generation in those **De-SynchronisedPower Islands** may be dealt with as described in three different ways, more than one of which may be utilisedOC.9.5.2.1 and OC9.5.2.2. The method deployed will vary in relation to any particular incident:-

OC9.5.2.1 Indirect Data Submission between Generators and Network Operators via The Company

(a) **The Company**, each **Generator**(a) In this section, OC9.5.2.1, relevant loading and other operational parameters are exchanged indirectly between **Generators** and/or **HVDC System Owners** and **DC Converter Station Owners** and **Network Operators** via **The Company**.

(b) **The Company**, each **Generator**, **HVDC Owner** and/or **DC Converter Station** owner with **Synchronised** (or connected and available to generate although not **Synchronised**) **Genset(s)** in the **De-SynchronisedPower Island** and the **Network Operator** whose **User System** forms all or part of the **De-SynchronisedPower Island** shall exchange information as set out in this OC9.5.2.1 to enable **The Company** to issue a **Bid-Offer Acceptance** or an **Emergency Instruction** to that **Generator** and/or **HVDC System Owner** and/or **DC Converter Station Owner** in relation to its **Genset(s)** in the **De-SynchronisedPower Island** until **Re-Synchronisation** takes place, on the basis that it will (where practicable) seek to maintain the **Target Frequency**.

(bc) The information to **The Company** from the **Generator** and/or **HVDC System Owner** and/or **DC Converter Station** owner will cover its relevant operational parameters as outlined in the **Balancing Codes** (**BC**) and from **The Company** to the **Generator** and/or **HVDC System Owner** and/or **DC Converter Station** owner will cover data on **Demand** and changes in **Demand** in the **De-SynchronisedPower Island**.

(cd) The information from the **Network Operator** to **The Company** will comprise data on **Demand** in the **De-SynchronisedPower Island**, including data on any constraints within the **De-SynchronisedPower Island**.

(de) **The Company** will keep the **Network Operator** informed of the **Bid-Offer Acceptances** or **Emergency Instructions** it is issuing to **Embedded Genset(s)** within the **Network Operator's User System** forming part of the **De-SynchronisedPower Island**.

OC9.5.2.2 Direct Data Submission between Generators, HVDC System Owners, DC Converter Station Owners and Network Operators

(~~a~~(a)In this section, OC9.5.2.2, relevant loading and other operational parameters are exchanged directly between **Generators**, and/or **HVDC System Owners** and **DC Converter Station Owners** and **Network Operators**.

(b) **The Company** will issue an **Emergency Instruction** and/or a **Bid-Offer Acceptance**, to the **Generator** and/or **HVDC System Owner** and/or **DC Converter Station Owner** to "float" local **Demand** and maintain **Frequency** at **Target Frequency**. ~~Under~~In this situation, the **Generator** and/or **HVDC System Owner** and/or **DC Converter Station** owner will be required to regulate the output of its **Genset(s)** at the **Power Station** in question to the **Demand** prevailing in the ~~**De-Synchronised**~~**Power Island** in which it is situated, until **Re-Synchronisation** takes place, on the basis that it will (where practicable) seek to maintain the **Target Frequency**.

(~~b~~c) The **Network Operator** is required to be in contact with the **Generator** ~~at the **Power**~~ and/or **HVDC System Operator** and/or **DC Converter Station** ~~to~~ owner so that the **Network Operator** can supply data to the **Generator** and/or **HVDC System Owner** and/or **DC Converter Station** owner on **Demand** changes within the ~~**De-Synchronised**~~ **Power Island**.

(~~c~~d) If more than one ~~**Genset**~~**Generating Unit** and/or **HVDC System** and/or **DC Converter** is **Synchronised** ~~on~~to the ~~**De-Synchronised**~~**Power Island**, or is connected to the ~~**De-Synchronised**~~**Power Island** and available to generate although not **Synchronised**, the **Network Operator** will need to liaise with **The Company** to agree which ~~**Genset(s)**~~**Generating Units** and/or **HVDC Systems** and/or **DC Converter** stations will be utilised to accommodate changes in **Demand** in the ~~**De-Synchronised**~~**Power Island**. The **Network Operator** will then maintain contact with the relevant **Generator** ~~(or **Generators**~~(s) and/or **HVDC System Owner(s)** and/or **DC Converter Station Owner**(s) in relation to that ~~**Genset(s)**~~ **Plant**.

(~~d~~e) The **Generator** at the **Power Station** and/or **HVDC System Owner** and/or **DC Converter Station** owner must contact the **Network Operator** if the level of **Demand** which it has been asked to meet as a result of the **Emergency Instruction** and/or **Bid-Offer Acceptance** to "float" and the detail on **Demand** passed on by the **Network Operator**, is likely to cause problems for safety reasons (whether relating to personnel or **Plant** and/or **Apparatus**) in the operation of its ~~**Genset**~~**Generating Unit(s)** or **HVDC System(s)** or **DC Converter Station(s)**, in order that the **Network Operator** can alter the level of **Demand** which that **Generator** and/or **HVDC System Owner** and/or **DC Converter Station** owner needs to meet. Any decision to operate outside any relevant parameters is one entirely for the **Generator** and/or **HVDC System Owner** and/or **DC Converter Station** owner.

OC9.5.2.3 Control Features

(a) A system may be established in relation to a part of the **National Electricity Transmission System** and a **Network Operator's User System**, if agreed between **The Company** and the **Network Operator** and any relevant **Generator(s)**, **HVDC System Owner** or **DC Converter Station** Owner, whereby upon a defined fault(s) occurring, manual or automatic control features will operate to protect the **National Electricity Transmission System** and relevant **Network Operator's User System** and ~~**Genset**~~ **Generator(s)**, **HVDC System Owner(s)** or **DC Converter Station Owner(s)** **Plant** and simplify the restoration of **Demand** in the ~~**De-Synchronised**~~**Power Island**.

(b) In agreeing the establishment of such a system of control features, **The Company** will need to consider its impact on the operation of the **National Electricity Transmission System**.

(c) **The Company** will work with **Network Operators** involved in the wider **System Restoration** process to help balance generation and ~~**D**~~**demand**, and help ensure that it does not have a destabilising effect on the **Total System**.

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OC9.5.2.4 Absence of Control Features System

If a system of control features under OC9.5.2.3 has not been agreed as part of an **OC9 De-Synchronised Island Procedure** under OC9.5.4 below, **The Company** may choose to utilise the procedures set out in OC9.5.2.1 or OC9.5.2.2, or may instruct the **~~Genset(s)~~Generators** or **HVDC System Owner** or **DC Converter Station** owners (or some of them~~)~~ in respect of the **~~De-Synchronised~~Plant** they own or operate) in the **Power Island** to **De-Synchronise**.

OC9.5.3 Choice ~~O~~of Option

In relation to each of the methods set out in OC9.5.2, where a **~~De-Synchronised~~Power Island** has come into existence and where an **OC9 De-Synchronised Island Procedure** under OC9.5.4 has been agreed, **The Company**, the **Network Operator** and the relevant **Generator(s~~)~~), HVDC System Owners** or **DC Converter Station** owners will operate in accordance with that **OC9 De-Synchronised ~~Islands~~Island Procedure** unless **The Company** considers that the nature of the **De-Synchronised Island** situation is such that either:-

(i) the **OC9 De-Synchronised Island Procedure** does not cover the situation; or

(ii) the provisions of the **OC9 De-Synchronised Island Procedure** are not appropriate,

in which case **The Company** will instruct the relevant **Users** and the **Users** will comply with **The Company's** instructions (which in the case of **Generators** ~~will relate to generation~~and/or **HVDC System Owners** and/or **DC Converter Station** owners will relate to **Active Power** supplied to the **Power Island** and in the case of **Network Operators** will relate to **Demand**).

OC9.5.4 Agreeing Procedures

In relation to each relevant part of the **Total System**, **The Company**, the **Network Operator** and the relevant **Generator** and/or **HVDC System Owner** and/or **DC Converter Station** owner will discuss and may agree a local procedure (an "**OC9 De-Synchronised Island Procedure**").

~~OC9.5.4.1 Where there is no relevant local procedure in place at 12th May 1997, or in the case where~~ Where the need for an **OC9 De-Synchronised Island Procedure** arises for the first time, the following provisions shall apply:

(a) **The Company**, the **Network Operator(s)** and the relevant **Generator(s)** and/or **HVDC System Owners** or **DC Converter Station** owners will discuss the need for, and the detail of, the **OC9 De-Synchronised Island Procedure**. As soon as the need for an **OC9 De-Synchronised Island Procedure** is identified by **The Company** or a **User**, and the party which identifies such a need will notify all affected **Users** (and **The Company**, if that party is a **User**), and **The Company** will initiate these discussions.

(b) Each **OC9 De-Synchronised Island Procedure** will be in relation to a specific **Grid Supply Point**, but if there is more than one **Grid Supply Point** ~~between **The Company** and the **Network Operator**~~involved, then the **OC9 De-Synchronised Island Procedure** may cover all relevant **Grid Supply Points**. In Scotland, the **OC9 De-Synchronised Island Procedure** may also cover parts of the **National Electricity Transmission System** connected to the **User's System(s)** and **Power Stations** and **HVDC Systems** and **DC Converter Station** owners directly connected to the **National Electricity Transmission System** which are also likely to form part of the **Power Island**.

(c) The **OC9 De-Synchronised Island Procedure** will:

(i) record which **Users** and which **User Sites** are covered by the **OC9 De-Synchronised Island Procedure**;

(ii) record which of the ~~three~~ methods set out in OC9.5 ~~(or combination of the three)~~ shall apply, with any conditions as to applicability being set out as well;

(iii) set out what is required from **The Company** and each **User** should a ~~**De-Synchronised**~~**Power Island** arise;

(iv) set out what action should be taken if the **OC9 De-Synchronised Island Procedure** does not cover a particular set of circumstances and will reflect that in the absence of any specified action, the provisions of OC9.5.3 will apply;

(v) in respect of **Scottish Transmission Systems**, the **OC9 De-Synchronised Island** ~~**Procedure**~~procedure may be produced with and include obligations on the **Relevant Scottish Transmission Licensee(s)**~~) ;~~; and

(vi) in respect of **Scottish Transmission Systems**, where the **OC9 De-Synchronised Island Procedure** includes the establishment of a ~~**De-synchronised**~~**Power Island**, describe the route for establishment of the ~~**De-Synchronised**~~**Power Island**.

(d) Each **OC9 De-Synchronised Island Procedure** shall be prepared by **The Company** to reflect the above discussions.

(e) Each page of the **OC9 De-Synchronised Island Procedure** shall bear a date of issue and the issue number.

(f) When an **OC9 De-Synchronised Island Procedure** is prepared, it shall be sent by **The Company** to the **Users** involved for confirmation of its accuracy.

(g) The **OC9 De-Synchronised Island Procedure** shall then be signed on behalf of **The Company** and on behalf of each relevant **User** by way of written confirmation of its accuracy.

(h) Once agreed under this OC9.5.4.~~1~~, the procedure will become an **OC9 De-Synchronised Island Procedure** under the **Grid Code** and (subject to any change pursuant to this OC9) will apply between **The Company**, **Relevant Transmission Licensee** and the relevant **Users** as if it were part of the **Grid Code**.

(i) Once signed, a copy will be distributed by **The Company** to each **User** which is a party accompanied by a note indicating the issue number and the date of implementation.

(j) **The Company** and **Users** must make the **OC9 De-Synchronised Island Procedure** readily available to the relevant operational staff.

(k) If a new **User** connects to the **Total System** and needs to be included with an existing **OC9 De-Synchronised Island Procedure**, **The Company** will initiate a discussion with that **User** and the **Users** which are parties to the relevant **OC9 De-Synchronised Island Procedure**. The principles applying to a new **OC9 De-Synchronised Island Procedure** under this OC9.5.4.~~1~~ shall apply to such discussions and to any consequent changes.

(l) If **The Company**, or any **User** which is a party to an **OC9 De-Synchronised Island Procedure**, becomes aware that a change is needed to that **OC9 De-Synchronised Island Procedure**, it shall (in the case of **The Company**) initiate a discussion between **The Company** and the relevant **Users** to seek to agree the relevant change. The principles applying to establishing a new **OC9 De-Synchronised Island Procedure** under this OC9.5.4.~~1~~ shall apply to such discussions and to any consequent changes. If a **User** becomes so aware, it shall contact **The Company** who will then initiate such discussions.

(m) If in relation to any discussions, agreement cannot be reached between **The Company** and the relevant **Users**, **The Company** will operate the **System** on the basis that it will discuss which of the ~~three~~ methods set out in OC9.5.2.1 ~~to~~or OC9.5.2.~~3~~2 would be most appropriate at the time, if practicable. The complexities and uncertainties of recovery from a ~~**De-Synchronised Island** means that **The Company** will decide, having discussed the situation with the relevant **Users** and taking into account the fact that the three methods may not cover the situation or be appropriate, the approach which is to be followed. **The Company** will instruct the relevant **Users** and the **Users** will comply with **The Company 's** instructions as provided in OC9.5.3.~~

~~OC9.5.4.2 Where there is a relevant local procedure in place at 12th May 1997, the following provisions shall apply:~~

~~(a) **The Company** and the **Network Operator** and the relevant **Generator(s)** will discuss the existing procedure to see whether it is consistent with the principles set out in this OC9.5.~~

~~(b) If it is, then it shall become an **OC9 De-Synchronised Island Procedure** under this **OC9**, and the relevant provisions of OC9.5.4.1 shall apply.~~

~~(c) If it is not, then the parties will discuss what changes are needed to ensure that it is consistent, and once agreed, the procedure will become an **OC9 De-Synchronised Island Procedure** under this **OC9**, and the relevant provisions of OC9.5.4.1 shall apply.~~

~~(d) If agreement cannot be reached between **The Company** and the relevant **Users** after a reasonable period of time, the existing procedure will cease to apply and **The Company** will operate the **System** on the basis that it will discuss which of the three methods set out in OC9.5.2.1 to OC9.5.2.3 would be most appropriate at the time, if practicable. The complexities and uncertainties of recovery from a **De-Synchronised**~~**Power Island** means that **The Company** will decide, having discussed the situation with the relevant **Users** and taking into account the fact that the three methods may not cover the situation or be appropriate, the approach which is to be followed. **The Company** will instruct the relevant **Users** and the **Users** will comply with **The** ~~**Company 's**~~**Company's** instructions as provided in OC9.5.3.

OC9.5.5 Where the **National Electricity Transmission System** is **Out of Synchronism** with the **Transmission System** of an **Externally Interconnected System Operator**, **The Company** will, pursuant to the **Interconnection Agreement** with that **Externally Interconnected System Operator**, agree with that **Externally Interconnected System Operator** when its **Transmission System** can be **Re-Synchronised** to the **National Electricity Transmission System**.

OC9.5.6 Further requirements regarding **Re-synchronisation** of **De-synchronised Islands** following any **Total Shutdown** or **Partial Shutdown**

Following any **Total Shutdown** or **Partial Shutdown**, **The Company** expects that it will be necessary to interconnect **Power Islands** utilising the provisions of OC9.5. The complexities and uncertainties of recovery from a **Total Shutdown** or **Partial Shutdown** requires the provisions of OC9.5 to be flexible, however, the strategies which **The Company** will, where practicable, be seeking to follow when **Re-synchronising** ~~**De-synchronised**~~**Power Islands** following any **Total Shutdown** or **Partial Shutdown**, include the following:

(a) ~~(a)~~ the provision of supplies to appropriate **Power Stations** to facilitate their synchronisation as soon as practicable;

(b) energisation of a skeletal **National Electricity Transmission System**;

(c) the strategic restoration of **Demand** in co-ordination with relevant **Network Operators**.

As highlighted in OC9.4.3, during a **Total Shutdown** or **Partial Shutdown** and during the subsequent recovery, which includes any period during which the procedures in this OC9.5 apply, the **Licence Standards** may not apply and the **Total System** may be operated outside normal voltage and **Frequency** standards.

OC9.5.7 To manage effectively and co-ordinate the restoration strategies of the **Total System** (any **Re-Synchronisation** of ~~**De-Synchronised**~~**Power Islands**) following any **Total Shutdown** or **Partial Shutdown**, requires **The Company** and relevant **Users** to undertake certain planning activities as set out below:

(a) **The Company** and **Network Operators** shall review on a regular basis the processes by which each **Power Island** will be interconnected. This is likely to cover an exchange of information regarding the typical size, location and timing requirements for **Demand** to be reconnected and also include details (ability to change/disable) of the low frequency trip relay settings of the **Demand** identified.

(b) Each **Generator** shall provide to **The Company** information to assist **The Company** in the formulation of the restoration strategies of **Power Island** expansion. This information shall be provided in accordance with PC.A.5.7.

OC9.6 JOINT SYSTEM INCIDENT PROCEDURE

OC9.6.1 A "**Joint System Incident**" is

(a) an **Event**, wherever occurring (other than on an **Embedded Small Power Station** or **Embedded Medium Power Station**), which, in the opinion of **The Company** or a **User**, has or may have a serious and/or widespread effect.

(b) In the case of an **Event** on a **User(s) System(s)** (other than on an **Embedded Small Power Station** or **Embedded Medium Power Station**), the effect must be on the **National Electricity Transmission System**, and in the case of an **Event** on the **National Electricity Transmission System**, the effect must be on a **User(s) System(s)** (other than on an **Embedded Small Power Station** or **Embedded Medium Power Station**).

Where an **Event** on a **User(s) System(s)** has or may have no effect on the **National Electricity Transmission System**, then such an **Event** does not fall within **OC9** and accordingly **OC9** shall not apply to it.

OC9.6.2 (a) (i) Each **User** (other than **Generators** which only have **Embedded Small Power Stations** and/or **Embedded Medium Power Stations**) will provide in writing to **The Company**, and

(ii) **The Company** will provide in writing to each **User** (other than **Generators** which only have **Embedded Small Power Stations** and/or **Embedded Medium Power Stations**), a telephone number or numbers at which, or through which, senior management representatives nominated for this purpose and who are fully authorised to make binding decisions on behalf of **The Company** or the relevant **User**, as the case may be, can be contacted day or night when there is a **Joint System Incident**.

(b) The lists of telephone numbers will be provided in accordance with the timing requirements of the **Bilateral Agreement** and/or **Construction Agreement** with that **User**, prior to the time that a **User** connects to the **National Electricity Transmission System** and must be up-dated (in writing) as often as the information contained in them changes.

OC9.6.3 Following notification of an **Event** under **OC7**, **The Company** or a **User**, as the case may be, will, if it considers necessary, telephone the **User** or **The Company**, as the case may be, on the telephone number referred to in OC9.6.2, to obtain such additional information as it requires.

OC9.6.4 Following notification of an **Event** under **OC7**, and/or the receipt of any additional information requested pursuant to OC9.6.3, **The Company** or a **User**, as the case may be, will determine whether or not the **Event** is a **Joint System Incident**, and, if so, **The Company** and/or the **User** may set up an **Incident Centre** in order to avoid overloading the existing, operational/control arrangements be they **The Company's** or **User's**.

OC9.6.5 Where **The Company** has determined that an **Event** is a **Joint System Incident**, **The Company** shall, as soon as possible, notify all relevant **Users** that a **Joint System Incident** has occurred and, if appropriate, that it has established an **Incident Centre** and the telephone number(s) of its **Incident Centre** if different from those already supplied pursuant to OC9.6.2.

OC9.6.6 If a **User** establishes an **Incident Centre** it shall, as soon as possible, notify **The Company** that it has been established and the telephone number(s) of the **Incident Centre** if different from those already supplied pursuant to OC9.6.2.

OC9.6.7 **The Company's Incident Centre** and/or the **User's Incident Centre** will not assume any responsibility for the operation of the **National Electricity Transmission System** or **User's System**, as the case may be, but will be the focal point in **The Company** or the **User**, as the case may be, for:

(a) the communication and dissemination of information between **The Company** and the senior management representatives of **User(s)**; or

(b) between the **User** and the senior management representatives of **The Company**, as the case may be,

relating to the **Joint System Incident**. The term "**Incident Centre**" does not imply a specially built centre for dealing with **Joint System Incidents**, but is a communications focal point. During a **Joint System Incident**, the normal communication channels, for operational/control communication between **The Company** and **Users** will continue to be used.

OC9.6.8 All communications between the senior management representatives of the relevant parties with regard to **The Company's** role in the **Joint System Incident** shall be made via **The Company's Incident Centre** if it has been established.

OC9.6.9 All communications between the senior management representatives of **The Company** and a **User** with regard to that **User's** role in the **Joint System Incident** shall be made via that **User's Incident Centre** if it has been established.

OC9.6.10 **The Company** will decide when conditions no longer justify the need to use its **Incident Centre** and will inform all relevant **Users** of this decision.

OC9.6.11 Each **User** which has established an **Incident Centre** will decide when conditions no longer justify the need to use that **Incident Centre** and will inform **The Company** of this decision.

APPENDIX 1 – SYSTEM RESTORATION REGIONS

North Scotland
South Scotland
North East
North West
Midlands
South East
South West

< END OF OPERATING CODE NO. 9 >

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