Our Ref:

Your Ref:

Date: 2 February 2005

To: All Recipients of the Serviced Grid Code

Commercial Industry Codes

National Grid Company plc
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Dear Sir/Madam

THE SERVICED GRID CODE – ISSUE 3 REVISION 5

Revision 5 of Issue 3 of the Grid Code has recently been approved by the Authority for implementation on **4th February 2005**.

I have enclosed the replacement pages that incorporate the agreed changes necessary to update the serviced copies of the Grid Code Issue 3 held by you to Revision 5 standard.

The enclosed note indicates the changes that are necessary to incorporate the pages and also attached is a brief summary of the changes made to the text.

Yours faithfully

D Payne
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THE GRID CODE – ISSUE 3 REVISION 5

INCLUSION OF REVISED PAGES

Title Page			
Glossary and Definitions	**GD**	**-**	**Pages 7/8, 15 to 28**
Planning Code	**PC**	**-**	**Pages 51 to 53**
Connection Conditions	**CC**	**-**	**Contents pages, Pages 25 to 46**
Operating Codes	**OC7**	**-**	**All pages**
	OC8	**-**	**Pages 1/2**
	OC8A	**-**	**Pages 1 to 12**
	OC8B	**-**	**Pages 1 to 8**
	OC9	**-**	**All Pages**
General Conditions	**GC**	**-**	**All Pages**
Revisions			**All Pages**

NOTE: See Page 1 of the Revisions section of the Grid Code for details of how the revisions are indicated on the pages.

NATIONAL GRID COMPANY plc

THE GRID CODE – ISSUE 3 REVISION 5

SUMMARY OF CHANGES

The changes arise from the implementation of modifications proposed in Ofgem/DTI Consultation **251/04** (Ofgem/DTI BETTA consultation on outstanding matters concerning the Grid Code under BETTA and associated STC drafting).

1. Glossary and Definitions

   - Reinstatement of the definition of GB Transmission System Warning.
   - Amendment of Definition of Operational Switching.
   - Amendment of definition of Local Joint Restoration Plan.
   - Amendment of the definition of Power Island.
   - Add definition of Control Engineer
   - Add definition of Local Switching Procedure.

2. Planning Code.

   - Amend Appendix C to refer to GB Security and Quality of Supply Standard.

3. Connection Conditions

   - Add proformas for SHETL and SPT Site Responsibility Schedules in Appendix 1.

   - Amendment to Appendix A.

4. Operating Codes

   - OC7- Additional text in relation to the procedure in respect of Operational Switching.

   - OC8 – Additional text to clarify how safety precautions are established when work on one Transmission System requires Safety Precautions to be established on an adjacent Transmission System or on a User System connected to the Transmission System.

   - OC9 – Additional text in respect of the establishment of Local Joint Restoration Plans IN Scotland. Changes reflecting the difference between existing operational practice in respect of Black Start in Scotland and England and Wales and the role of the transmission owner in a Black Start situation in Scotland.

5. General Conditions

   - Addition of lists of Electrical Standards for SPT and SHETL.

   - Amendment to GC.A2.12

THE GRID CODE

Issue 3

Revision 5
4th February 2005

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Contingency Reserve The margin of generation over forecast **Demand** which is required in the period from 24 hours ahead down to real time to cover against uncertainties in **Large Power Station** availability and against both weather forecast and **Demand** forecast errors.

Control Calls A telephone call whose destination and/or origin is a key on the control desk telephone keyboard at a **Transmission Control Centre** and which has the right to exercise priority over (ie. disconnect) a call of a lower status.

Control Centre A location used for the purpose of control and operation of the **GB Transmission System** or a **User System** other than a **Generator's System** or an **External System**.

Control Engineer A person nominated by the relevant party for the control of its **Plant** and **Apparatus**.

Control Person The term used as an alternative to "**Safety Co-ordinator**" on the **Site Responsibility Schedule** only.

Control Phase The **Control Phase** follows on from the **Programming Phase** and covers the period down to real time.

Control Point The point from which:-

a) A **Non-Embedded Customer's Plant** and **Apparatus** is controlled; or

b) A **BM Unit** at a **Large Power Station** or at a **Medium Power Station** or representing a **Cascade Hydro Scheme** or with a **Demand Capacity** with a magnitude of 50MW or more (in England and Wales) or 5MW or more (in Scotland), is physically controlled by a **BM Participant**; or

c) In the case of any other **BM Unit**, data submission is co-ordinated for a **BM Participant** and instructions are received from **NGC**,

as the case may be. For a **Generator** this will normally be at a **Power Station**. In the case of a **BM Unit** of an **Interconnector User**, the **Control Point** will be the **Control Centre** of the relevant **Externally Interconnected System Operator**.

Control Telephony The method by which a **User's Responsible Engineer/Operator** and **NGC Control Engineer(s)** speak to one another for the purposes of control of the **Total System** in both normal and emergency operating conditions.

CUSC Has the meaning set out in **NGC's Transmission Licence**

CUSC Contract	One or more of the following agreements as envisaged in Standard Condition C1 of **NGC's Transmission Licence**: (a) the **CUSC Framework Agreement**; (b) a **Bilateral Agreement**; (c) a **Construction Agreement** or a variation to an existing **Bilateral Agreement** and/or **Construction Agreement**;
CUSC Framework Agreement	Has the meaning set out in **NGC's Transmission Licence**
Customer	A person to whom electrical power is provided (whether or not he is the same person as the person who provides the electrical power).
Customer Demand Management	Reducing the supply of electricity to a **Customer** or disconnecting a **Customer** in a manner agreed for commercial purposes between a **Supplier** and its **Customer**.
Customer Demand Management Notification Level	The level above which a **Supplier** has to notify **NGC** of its proposed or achieved use of **Customer Demand Management** which is 12 MW in England and Wales and 5 MW in Scotland.
Customer Generating Plant	A **Power Station** or **Generating Unit** of a **Customer** to the extent that it operates the same exclusively to supply all or part of its own electricity requirements, and does not export electrical power to any part of the **Total System**.
Data Registration Code or **DRC**	That portion of the **Grid Code** which is identified as the **Data Registration Code**.
Data Validation, Consistency and Defaulting Rules	The rules relating to validity and consistency of data, and default data to be applied, in relation to data submitted under the **Balancing Codes**, to be applied by **NGC** under the **Grid Code** as set out in the document "Data Validation, Consistency and Defaulting Rules" - Issue 7, dated 11th October 2004. The document is available on the National Grid website or upon request from **NGC**.
De-Load	The condition in which a **Genset** has reduced or is not delivering electrical power to the **System** to which it is **Synchronised**.
Demand	The demand of MW and Mvar of electricity (i.e. both **Active** and **Reactive Power**), unless otherwise stated.
Demand Capacity	Has the meaning as set out in the **BSC**.

GB National Demand

The amount of electricity supplied from the **Grid Supply Points** plus:-

- that supplied by **Embedded Large Power Stations**, and
- **GB Transmission System Losses**,

minus:-

- the **Demand** taken by **Station Transformers** and **Pumped Storage Units'**

and, for the purposes of this definition, does not include:-

- any exports from the **GB Transmission System** across **External Interconnections.**

GB Transmission System

The system consisting (wholly or mainly) of high voltage electric lines owned or operated by **Transmission Licensees** within **Great Britain** and used for the transmission of electricity from one **Power Station** to a sub-station or to another **Power Station** or between sub-stations or to or from any **External Interconnection**, and includes any **Plant** and **Apparatus** and meters owned or operated by any **Transmission Licensee** within **Great Britain** in connection with the transmission of electricity but does not include any **Remote Transmission Assets**.

GB Transmission System Demand

The amount of electricity supplied from the **Grid Supply Points** plus:-

- that supplied by **Embedded Large Power Stations**, and
- exports from the **GB Transmission System** across **External Interconnections**, and
- **GB Transmission System Losses**,

and, for the purposes of this definition, includes:-

- the **Demand** taken by **Station Transformers** and **Pumped Storage Units.**

GB Transmission System Losses

The losses of electricity incurred on the **GB Transmission System**.

GB Transmission System Study Network Data File

A computer file containing details of transmission plant and **Large Power Stations** and the configuration of the connection between them, together with data on **Demand** and on the **GB Transmission System**. These details, when read together as represented in the file, form **NGC's** view of an appropriate representation of the **GB Transmission System** for technical analysis purposes only. The file will only deal with the **GB Transmission System**

GB Transmission System Warning	A warning issued by **NGC** to **Users** (or to certain **Users** only) in accordance with OC7.4.8.2, which provides information relating to **System** conditions or **Events** and is intended to : (a) alert **Users** to possible or actual **Plant** shortage, **System** problems and/or **Demand** reductions; (b) inform of the applicable period; (c) indicate intended consequences for **Users**; and (d) enable specified **Users** to be in a state of readiness to receive instructions from **NGC**.
GB Transmission System Warning - Demand Control Imminent	A warning issued by **NGC**, in accordance with OC7.4.8.7, which is intended to provide short term notice, where possible, to those **Users** who are likely to receive **Demand** reduction instructions from **NGC** within 30 minutes.
GB Transmission System Warning - High Risk of Demand Reduction	A warning issued by **NGC**, in accordance with OC7.4.8.6, which is intended to alert recipients that there is a high risk of **Demand** reduction being implemented and which may normally result from an inadequate **System Margin**.
GB Transmission System Warning - Inadequate System Margin	A warning issued by **NGC**, in accordance with OC7.4.8.5, which is intended to alert recipients of an inadequate **System Margin** and which if not improved may result in **Demand** reduction being instructed.
GB Transmission System Warning - Risk of System Disturbance	A warning issued by **NGC**, in accordance with OC7.4.8.8, which is intended to alert **Users** of the risk of widespread and serious **System** disturbance which may affect **Users**.
General Conditions or **GC**	That portion of the **Grid Code** which is identified as the **General Conditions**.
Generating Plant Demand Margin	The difference between **Output Usable** and forecast **Demand**.
Generating Unit	Unless otherwise provided in the **Grid Code**, any **Apparatus** which produces electricity, including, for the avoidance of doubt, a **CCGT Unit**.
Generation Capacity	Has the meaning set out in the **BSC**.
Generation Planning Parameters	Those parameters listed in Appendix 2 of **OC2**.

Generator	A person who generates electricity under licence or exemption under the **Act** acting in its capacity as a generator in **Great Britain**.
Generator Performance Chart	A diagram which shows the MW and Mvar capability limits within which a **Generating Unit** will be expected to operate under steady state conditions.
Genset	A **Generating Unit** or **CCGT Module** at a **Large Power Station** or any **Generating Unit** or **CCGT Module** which is directly connected to the **GB Transmission System**.
Good Industry Practice	The exercise of that degree of skill, diligence, prudence and foresight which would reasonably and ordinarily be expected from a skilled and experienced operator engaged in the same type of undertaking under the same or similar circumstances.
Governor Deadband	The total magnitude of the change in steady state speed (expressed as a range of Hz (± x Hz) where "x" is a numerical value) within which there is no resultant change in the position of the governing valves of the speed/load Governing System.
Great Britain or **GB**	Has the meaning set out in Schedule 1 of **NGC's Transmission Licence**.
Grid Code Review Panel or **Panel**	The panel with the functions set out in GC.4.
Grid Entry Point	A point at which a **Generating Unit** or a **CCGT Module** or a **CCGT Unit**, as the case may be, which is directly connected to the **GB Transmission System** connects to the **GB Transmission System**.
Grid Supply Point	A point of supply from the **GB Transmission System** to **Network Operators** or **Non-Embedded Customers**.
High Frequency Response	An automatic reduction in **Active Power** output in response to an increase in **System Frequency** above the **Target Frequency** (or such other level of **Frequency** as may have been agreed in an **Ancillary Services Agreement**). This reduction in **Active Power** output must be in accordance with the provisions of the relevant **Ancillary Services Agreement** which will provide that it will be released increasingly with time over the period 0 to 10 seconds from the time of the **Frequency** increase on the basis set out in the **Ancillary Services Agreement** and fully achieved within 10 seconds of the time of the start of the **Frequency** increase and it must be sustained at no lesser reduction thereafter. The interpretation of the **High Frequency Response** to a + 0.5 Hz frequency change is shown diagrammatically in Figure CC.A.3.3.
High Voltage or **HV**	In England and Wales, a voltage exceeding 650 volts. In Scotland, a voltage exceeding 1000 volts.

HV Generator Connections	**Apparatus** connected at the same voltage as that of the **GB Transmission System**, including **Users'** circuits, the higher voltage windings of **Users'** transformers and associated connection **Apparatus**.
HP Turbine Power Fraction	Ratio of steady state mechanical power delivered by the HP turbine to the total steady state mechanical power delivered by the total steam turbine at **Registered Capacity**.
IEC	International Electrotechnical Commission.
IEC Standard	A standard approved by the International Electrotechnical Commission.
Implementing Safety Co-ordinator	The **Safety Co-ordinator** implementing **Safety Precautions**.
Incident Centre	A centre established by **NGC** or a **User** as the focal point in **NGC** or in that **User**, as the case may be, for the communication and dissemination of information between the senior management representatives of **NGC**, or of that **User**, as the case may be, and the relevant other parties during a **Joint System Incident** in order to avoid overloading **NGC's**, or that **User's**, as the case may be, existing operational/control arrangements.
Indicated Constraint Boundary Margin	The difference between a constraint boundary transfer limit and the difference between the sum of **BM Unit** Maximum Export Limits and the forecast of local **Demand** within the constraint boundary.
Indicated Imbalance	The difference between the sum of **Physical Notifications** for **BM Units** comprising **Generating Units** or **CCGT Modules** and the forecast of **Demand** for the whole or any part of the **System**.
Indicated Margin	The difference between the sum of **BM Unit** Maximum Export Limits submitted and the forecast of **Demand** for the whole or any part of the **System**
Instructor Facilities	A device or system which gives certain **Transmission Control Centre** instructions with an audible or visible alarm, and incorporates the means to return message acknowledgements to the **Transmission Control Centre**
Integral Equipment Test or **IET**	A test on equipment, associated with **Plant** and/or **Apparatus**, which takes place when that **Plant** and/or **Apparatus** forms part of a **Synchronised System** and which, in the reasonable judgement of the person wishing to perform the test, may cause an **Operational Effect**.

Interconnection Agreement

An agreement made between **NGC** and an **Externally Interconnected System Operator** and/or an **Interconnector User** and/or other relevant persons for the **External Interconnection** relating to an **External Interconnection** and/or an agreement under which an **Interconnector User** can use an **External Interconnection**.

Interconnector User

Has the meaning set out in the **BSC**.

Interface Agreement

Has the meaning set out in the **CUSC**.

Intertripping

(a) The tripping of circuit-breaker(s) by commands initiated from **Protection** at a remote location independent of the state of the local **Protection**; or

(b) **Operational Intertripping**.

Intertrip Apparatus

Apparatus which performs **Intertripping**.

IP Turbine Power Fraction

Ratio of steady state mechanical power delivered by the IP turbine to the total steady state mechanical power delivered by the total steam turbine at **Registered Capacity**.

Isolating Device

A device for achieving **Isolation**.

Isolation

The disconnection of **HV Apparatus** (as defined in OC8A.1.6.2 and OC8B.1.7.2) from the remainder of the **System** in which that **HV Apparatus** is situated by either of the following:

(a) an **Isolating Device** maintained in an isolating position. The isolating position must either be:

(i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be retained in safe custody; or

(ii) maintained and/or secured by such other method which must be in accordance with the **Local Safety Instructions** of **NGC** or the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be; or

(b) an adequate physical separation which must be in accordance with and maintained by the method set out in the **Local Safety Instructions** of **NGC** or the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be.

Joint BM Unit Data

Has the meaning set out in the **BSC**.

Joint System Incident	An **Event** wherever occurring (other than on an **Embedded Medium Power Station** or an **Embedded Small Power Station**) which, in the opinion of **NGC** or a **User**, has or may have a serious and/or widespread effect, in the case of an **Event** on a **User(s) System(s)** (other than on an **Embedded Medium Power Station** or **Embedded Small Power Station**), on the **GB Transmission System**, and in the case of an **Event** on the **GB Transmission System**, on a **User(s) System(s)** (other than on an **Embedded Medium Power Station** or **Embedded Small Power Station**).
Key Safe	A device for the secure retention of keys.
Key Safe Key	A key unique at a **Location** capable of operating a lock, other than a control lock, on a **Key Safe**.
Large Power Station	A **Power Station** in **NGC's Transmission Area** with a **Registered Capacity** of 100MW or more or a **Power Station** in **SPT's Transmission Area** with a **Registered Capacity** of 30MW or more; or a **Power Station** in **SHETL's Transmission Area** with a **Registered Capacity** of 5MW or more.
Licence	Any licence granted to **NGC** or a **Relevant Transmission Licensee** or a **User**, under Section 6 of the **Act**.
Licence Standards	Those standards set out or referred to in Condition C17 of **NGC's Transmission Licence** and/or Condition D3 of a **Relevant Transmission Licensee's Transmission Licence**.
Limited Frequency Sensitive Mode	A mode whereby the operation of the **Genset** is **Frequency** insensitive except when the **System Frequency** exceeds 50.4Hz, from which point **Limited High Frequency Response** must be provided.
Limited High Frequency Response	A response of a **Genset** to an increase in **System Frequency** above 50.4Hz leading to a reduction in **Active Power** in accordance with the provisions of BC3.7.2.
Load	The **Active**, **Reactive** or **Apparent Power**, as the context requires, generated, transmitted or distributed.
Loaded	Supplying electrical power to the **System**.
Load Factor	The ratio of the actual output of a **Generating Unit** to the possible maximum output of that **Generating Unit**.
Load Management Block	A block of **Demand** controlled by a **Supplier** or other party through the means of radio teleswitching or by some other means.

Local Joint Restoration Plan	A plan produced under OC9.4.7.11 detailing the agreed method and procedure by which a **Genset** at a **Black Start Station** (possibly with other **Gensets** at that **Black Start Station**) will energise part of the **Total System** and meet complementary blocks of local **Demand** so as to form a **Power Island**. In Scotland, the plan may also: cover more than one **Black Start Station**; include **Gensets** other than those at a **Black Start Station** and cover the creation of one or more **Power Islands**.
Local Safety Instructions	For safety co-ordination in England and Wales, instructions on each **User Site** and **Transmission Site**, approved by the relevant **NGC** or **User's** manager, setting down the methods of achieving the objectives of **NGC's** or the **User's Safety Rules**, as the case may be, to ensure the safety of personnel carrying out work or testing on **Plant** and/or **Apparatus** on which his **Safety Rules** apply and, in the case of a **User**, any other document(s) on a **User Site** which contains rules with regard to maintaining or securing the isolating position of an **Isolating Device**, or maintaining a physical separation or maintaining or securing the position of an **Earthing Device**.
Local Switching Procedure	A procedure produced under OC7.6 detailing the agreed arrangements in respect of carrying out of **Operational Switching** at **Connection Sites** and parts of the **GB Transmission System** adjacent to those **Connection Sites**.
Localised Negative Reserve Active Power Margin or **Localised NRAPM**	That margin of **Active Power** sufficient to allow transfers to and from a **System Constraint Group** (as the case may be) to be contained within such reasonable limit as **NGC** may determine.
Location	Any place at which **Safety Precautions** are to be applied.
Locked	A condition of **HV Apparatus** that cannot be altered without the operation of a locking device.
Locking	The application of a locking device which enables **HV Apparatus** to be **Locked**.
Low Frequency Relay	Has the same meaning as **Under Frequency Relay**.
Low Voltage or **LV**	In England and Wales a voltage not exceeding 250 volts. In Scotland, a voltage exceeding 50 voltage but not exceeding 1000 volts.
Main Protection	**Protection** equipment or system expected to have priority in initiating either a fault clearance or an action to terminate an abnormal condition in a power system.

Material Effect	An effect causing **NGC** or a **Relevant Transmission Licensee** to effect any works or to alter the manner of operation of **Transmission Plant** and/or **Transmission Apparatus** at the **Connection Site** (which term shall, in this definition and in the definition of "**Modification**" only, have the meaning ascribed thereto in the **CUSC**) or the site of connection or a **User** to effect any works or to alter the manner of operation of its **Plant** and/or **Apparatus** at the **Connection Site** or the site of connection which in either case involves that party in expenditure of more than £10,000.
Maximum Generation Service, MGS	A service utilised by **NGC** in accordance with the **CUSC** and the **Balancing Principles Statement** in operating the **Total System**.
Maximum Generation Service Agreement	An agreement between a **User** and **NGC** for the payment by **NGC** to that **User** in respect of the provision by such **User** of a **Maximum Generation Service**.
Medium Power Station	A **Power Station** in **NGC's Transmission Area** with a **Registered Capacity** of 50MW or more, but less than 100MW; or a **Power Station** in **SPT's Transmission Area** with a **Registered Capacity** of 5MW or more, but less than 30MW.
Medium Voltage or **MV**	In England and Wales a voltage exceeding 250 volts but not exceeding 650 volts.
Mills	Milling plant which supplies pulverised fuel to the boiler of a coal fired **Power Station**.
Minimum Generation	The minimum output (in whole MW) which a **Genset** can generate under stable operating conditions, as registered with **NGC** under the **PC** (and amended pursuant to the **PC**). For the avoidance of doubt, the output may go below this level as a result of operation in accordance with BC3.7.
Modification	Any actual or proposed replacement, renovation, modification, alteration or construction by or on behalf of a **User** or **NGC** to either that **User's Plant** or **Apparatus** or **Transmission Plant** or **Apparatus**, as the case may be, or the manner of its operation which has or may have a **Material Effect** on **NGC** or a **User**, as the case may be, at a particular **Connection Site**.
Mothballed Generating Unit	A **Generating Unit** that has previously generated which the **Generator** plans not to use to generate for the remainder of the current **NGC Financial Year** but which could be returned to service.
Multiple Point of Connection	A double (or more) **Point of Connection**, being two (or more) **Points of Connection** interconnected to each other through the **User's System**.
Network Data	The data to be provided by **NGC** to **Users** in accordance with the **PC**, as listed in Part 3 of the Appendix to the **PC**.

Network Operator	A person with a **User System** directly connected to the **GB Transmission System** to which **Customers** and/or **Power Stations** (not forming part of the **User System**) are connected, acting in its capacity as an operator of the **User System**, but shall not include a person acting in the capacity of an **Externally Interconnected System Operator**.
NGC	National Grid Company plc.
NGC Control Engineer	The nominated person employed by **NGC** to direct the operation of the **GB Transmission System** or such person as nominated by **NGC**.
NGC Operational Strategy	**NGC's** operational procedures which form the guidelines for operation of the **GB Transmission System**.
No-Load Field Voltage	Shall have the meaning ascribed to that term in **IEC** 34-16-1:1991 [equivalent to **British Standard BS**4999 Section 116.1 : 1992].
Non-Embedded Customer	A **Customer** in **Great Britain**, except for a **Network Operator** acting in its capacity as such, receiving electricity direct from the **GB Transmission System** irrespective of from whom it is supplied.
Normal CCGT Module	A **CCGT Module** other than a **Range CCGT Module**.
Novel Unit	A tidal, wave, wind, geothermal, or any similar, **Generating Unit**.
OC9 De-synchronised Island Procedure	Has the meaning set out in OC9.5.4.
On-Site Generator Site	A site which is determined by the **BSC Panel** to be a Trading Unit under the **BSC** by reason of having fulfilled the Class 1 or Class 2 requirements as such terms are used in the **BSC**.
Operating Code or **OC**	That portion of the **Grid Code** which is identified as the **Operating Code**.
Operating Margin	**Contingency Reserve** plus **Operating Reserve**.
Operating Reserve	The additional output from **Large Power Stations** or the reduction in **Demand**, which must be realisable in real-time operation to respond in order to contribute to containing and correcting any **System Frequency** fall to an acceptable level in the event of a loss of generation or a loss of import from an **External Interconnection** or mismatch between generation and **Demand**.
Operation	A scheduled or planned action relating to the operation of a **System** (including an **Embedded Power Station**).

Operational Data	Data required under the **Operating Codes** and/or **Balancing Codes**.
Operational Day	The period from 0500 hours on one day to 0500 on the following day.
Operation Diagrams	Diagrams which are a schematic representation of the **HV Apparatus** and the connections to all external circuits at a **Connection Site**, incorporating its numbering, nomenclature and labelling.
Operational Effect	Any effect on the operation of the relevant other **System** which causes the **GB Transmission System** or the **System** of the other **User** or **Users**, as the case may be, to operate (or be at a materially increased risk of operating) differently to the way in which they would or may have operated in the absence of that effect.
Operational Intertripping	The automatic tripping of circuit-breakers to prevent abnormal system conditions occurring, such as over voltage, overload, **System** instability, etc. after the tripping of other circuit-breakers following power **System** fault(s) which includes **System** to **Generating Unit**, **System** to **CCGT Module** and **System** to **Demand** intertripping schemes.
Operational Planning	Planning through various timescales the matching of generation output with forecast **GB Transmission System Demand** together with a reserve of generation to provide a margin, taking into account outages of certain **Generating Units**, of parts of the **GB Transmission System** and of parts of **User Systems** to which **Power Stations** and/or **Customers** are connected, carried out to achieve, so far as possible, the standards of security set out in **NGC's Transmission Licence**, each **Relevant Transmission Licensee's Transmission Licence** or **Electricity Distribution Licence**, as the case may be.
Operational Planning Margin	An operational planning margin set by **NGC**.
Operational Planning Phase	The period from 8 weeks to the end of the 5th year ahead of real time operation.
Operational Procedures	Management instructions and procedures, both in support of the **Safety Rules** and for the local and remote operation of **Plant** and **Apparatus**, issued in connection with the actual operation of **Plant** and/or **Apparatus** at or from a **Connection Site**.
Operational Switching	Operation of **Plant** and/or **Apparatus** to the instruction of the relevant **Control Engineer.** For the avoidance of doubt, the operation of **Transmission Plant** and/or **Apparatus** forming part of the **GB Transmission System** in England and Wales, will be to the instruction of **NGC** and in Scotland will be to the instruction of the **Relevant Transmission Licensee**.

Other Relevant Data The data listed in BC1.4.2(f) under the heading **Other Relevant Data**

Out of Synchronism The condition where a **System** or **Generating Unit** cannot meet the requirements to enable it to be **Synchronised**.

Output Usable or **OU** That portion of **Registered Capacity** which is expected to be available and which is not unavailable due to a **Planned Outage.**

Over-excitation Limiter Shall have the meaning ascribed to that term in **IEC** 34-16-1:1991 [equivalent to **British Standard BS**4999 Section 116.1 : 1992].

Part 1 System Ancillary Services **Ancillary Services** which are required for **System** reasons and which must be provided by **Users** in accordance with the **Connection Conditions**. An exhaustive list of **Part 1 System Ancillary Services** is included in that part of CC.8.1 headed Part 1.

Part 2 System Ancillary Services **Ancillary Services** which are required for **System** reasons and which must be provided by a **User** if the **User** has agreed to provide them under a **Bilateral Agreement**. A non-exhaustive list of **Part 2 System Ancillary Services** is included in that part of CC.8.1 headed Part 2.

Part Load The condition of a **Genset**, or **Cascade Hydro Scheme** which is **Loaded** but is not running at its Maximum Export Limit.

Permit for Work for proximity work In England and Wales, a document issued by **NGC** or a **User** in accordance with its respective **Safety Rules** to enable work to be carried out in accordance with OC8A.8 and which provides for **Safety Precautions** to be applied and maintained. An example format of **NGC**'s permit for work is attached as Appendix E to **OC8A**.

In Scotland, a document issued by a **Relevant Transmission Licensee** or a **User** in accordance with its respective **Safety Rules** to enable work to be carried out in accordance with OC8B.8 and which provides for **Safety Precautions** to be applied and maintained. Example formats of the **Relevant Transmission Licensees'** permits for work are attached as Appendix E to **OC8B**.

Partial Shutdown 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** and, 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 **NGC's** directions relating to a **Black Start**.

Phase (Voltage) Unbalance The ratio (in percent) between the rms values of the negative sequence component and the positive sequence component of the voltage.

Physical Notification	Data that describes the **BM Participant**'s best estimate of the expected input or output of **Active Power** of a **BM Unit**.
Planning Code or **PC**	That portion of the **Grid Code** which is identified as the **Planning Code**.
Planned Maintenance Outage	An outage of **NGC** electronic data communication facilities as provided for in CC.6.5.8 and **NGC's** associated computer facilities of which normally at least 5 days notice is given, but in any event of which at least twelve hours notice has been given by **NGC** to the **User** and which is anticipated to last no longer than 2 hours. The length of such an outage may in exceptional circumstances be extended where at least 24 hours notice has been given by **NGC** to the **User**. It is anticipated that normally any planned outage would only last around one hour.
Planned Outage	An outage of a **Large Power Station** or of part of the **GB Transmission System**, or of part of a **User System**, co-ordinated by **NGC** under **OC2**.
Plant	Fixed and movable items used in the generation and/or supply and/or transmission of electricity, other than **Apparatus**.
Point of Common Coupling	That point on the **GB Transmission System** electrically nearest to the **User** installation at which either **Demands** or **Loads** are, or may be, connected.
Point of Connection	An electrical point of connection between the **GB Transmission System** and a **User's System**.
Point of Isolation	The point on **Apparatus** (as defined in OC8A.1.6.2 and OC8B.1.7.2) at which **Isolation** is achieved.
Post-Control Phase	The period following real time operation.
Power Factor	The ratio of **Active Power** to **Apparent Power**.
Power Island	**Gensets** at an isolated **Power Station**, together with complementary local **Demand**. In Scotland a **Power Island** may include more than one **Power Station.**
Power Station	An installation comprising one or more **Generating Units** (even where sited separately) owned and/or controlled by the same **Generator**, which may reasonably be considered as being managed as one **Power Station**.
Power System Stabiliser or **PSS**	Equipment controlling the **Exciter** output via the voltage regulator in such a way that power oscillations of the synchronous machines are dampened. Input variables may be speed, frequency or power (or a combination of these).

Preface	The preface to the **Grid Code** (which does not form part of the **Grid Code** and therefore is not binding).
Preliminary Notice	A notice in writing, sent by **NGC** both to all **Users** identified by it under OC12.4.2.1 and to the **Test Proposer**, notifying them of a proposed **System Test**.
Preliminary Project Planning Data	Data relating to a proposed **User Development** at the time the **User** applies for a **CUSC Contract** but before an offer is made and accepted.
Primary Response	The automatic increase in **Active Power** output of a **Genset** or, as the case may be, the decrease in **Active Power Demand** in response to a **System Frequency** fall. This increase in **Active Power** output or, as the case may be, the decrease in **Active Power Demand** must be in accordance with the provisions of the relevant **Ancillary Services Agreement** which will provide that it will be released increasingly with time over the period 0 to 10 seconds from the time of the start of the **Frequency** fall on the basis set out in the **Ancillary Services Agreement** and fully available by the latter, and sustainable for at least a further 20 seconds. The interpretation of the **Primary Response** to a – 0.5 Hz frequency change is shown diagrammatically in Figure CC.A.3.2.
Programming Phase	The period between **Operational Planning Phase** and the **Control Phase**. It starts at the 8 weeks ahead stage and finishes at 17:00 on the day ahead of real time.
Proposal Notice	A notice submitted to **NGC** by a **User** which would like to undertake a **System Test**.
Proposal Report	A report submitted by the **Test Panel** which contains: a) proposals for carrying out a **System Test** (including the manner in which the **System Test** is to be monitored); b) an allocation of costs (including un-anticipated costs) between the affected parties (the general principle being that the **Test Proposer** will bear the costs); and c) such other matters as the **Test Panel** considers appropriate. The report may include requirements for indemnities to be given in respect of claims and losses arising from a **System Test**.
Protection	The provisions for detecting abnormal conditions on a **System** and initiating fault clearance or actuating signals or indications.
Protection Apparatus	A group of one or more **Protection** relays and/or logic elements designated to perform a specified **Protection** function.

Pumped Storage Generator	A **Generator** which owns and/or operates any **Pumped Storage Plant**.
Pumped Storage Plant	The Dinorwig, Ffestiniog, Cruachan and Foyers **Power Stations**.
Pumped Storage Unit	A **Generating Unit** within a **Pumped Storage Plant**.
Quiescent Physical Notification or **QPN**	Data that describes the MW levels to be deducted from the **Physical Notification** of a **BM Unit** to determine a resultant operating level to which the **Dynamic Parameters** associated with that **BM Unit** apply, and the associated times for such MW levels. The MW level of the **QPN** must always be set to zero.
Range CCGT Module	A **CCGT Module** where there is a physical connection by way of a steam or hot gas main between that **CCGT Module** and another **CCGT Module** or other **CCGT Modules**, which connection contributes (if open) to efficient modular operation, and which physical connection can be varied by the operator.
Rated Field Voltage	Shall have the meaning ascribed to that term in **IEC** 34-16-1:1991 [equivalent to **British Standard BS**4999 Section 116.1 : 1992].
Rated MW	The "rating-plate" MW output of a **Generating Unit**, being that output up to which the **Generating Unit** was designed to operate (Calculated as specified in **British Standard BS** EN 60034 – 1: 1995).
Reactive Energy	The integral with respect to time of the **Reactive Power**.
Reactive Power	The product of voltage and current and the sine of the phase angle between them measured in units of voltamperes reactive and standard multiples thereof, ie: 1000 VAr = 1 kVAr 1000 kVAr = 1 Mvar
Record of Inter-System Safety Precautions or **RISSP**	A written record of inter-system **Safety Precautions** to be compiled in accordance with the provisions of **OC8**.

PLANNING CODE APPENDIX C

C1.1 Planning and design of the **SPT** and **SHETL Transmission Systems** is based generally, but not totally, on criteria which evolved from joint consultation among various **Transmission Licensees** responsible for design of the **GB Transmission System.**

C1.2 The above criteria are set down within the standards, memoranda, recommendations and reports and are provided as a guide to system planning. It should be noted that each scheme for reinforcement or modification of the **Transmission System** is individually designed in the light of economic and technical factors associated with the particular system limitations under consideration.

C1.3 The tables below identify the literature referred to above, together with the main topics considered within each document.

PART 1 – SHETL's TECHNICAL AND DESIGN CRITERIA

ITEM No.	DOCUMENT	REFERENCE No.
1	GB Security and Quality of Supply Standard	Version 1
2	System Phasing	TPS 13/4
3	not used	
4	Planning Limits for Voltage Fluctuations Caused by Industrial, Commercial and Domestic Equipment in the United Kingdom	ER P28
5	EHV or HV Supplies to Induction Furnaces Voltage unbalance limits. Harmonic current limits.	ER P16 (Supported by ACE Report No.48)
6	Planning Levels for Harmonic Voltage Distortion and the Connection of Non-Linear Loads to Transmission Systems and Public Electricity Supply Systems in the United Kingdom Harmonic distortion (waveform). Harmonic voltage distortion. Harmonic current distortion. Stage 1 limits. Stage 2 limits. Stage 3 Limits Addition of Harmonics Short Duration Harmonics Site Measurements	ER G5/4 (Supported by ACE Report No.73)

ITEM No.	DOCUMENT	REFERENCE No.
7	AC Traction Supplies to British Rail Type of supply point to railway system. Estimation of traction loads. Nature of traction current. System disturbance estimation. Earthing arrangements.	ER P24
8	Operational Memoranda Main System operating procedure. Operational standards of security. Voltage and reactive control on main system. System warnings and procedures for instructed load reduction. Continuous tape recording of system control telephone messages and instructions. Emergency action in the event of an exceptionally serious breakdown of the main system.	(SOM) SOM 1 SOM 3 SOM 4 SOM 7 SOM 10 SOM 15
9	Planning Limits for Voltage Unbalance in the United Kingdom.	ER P29

PART 2 – SPT's TECHNICAL AND DESIGN CRITERIA

ITEM No.	DOCUMENT	Reference No.
1	GB Security and Quality of Supply Standard	Version 1
2	System Phasing	TDM 13/10,002 Issue 4
3	not used	
4	Planning Limits for Voltage Fluctuations Caused by Industrial, Commercial and Domestic Equipment in the United Kingdom	ER P28
5	EHV or HV Supplies to Induction Furnaces Voltage Unbalance limits. Harmonic current limits.	ER P16 (Supported by ACE Report No.48)
6	Planning Levels for Harmonic Voltage Distortion and the Connection of Non-Linear Loads to Transmission Systems and Public Electricity Supply Systems in the United Kingdom Harmonic distortion (waveform). Harmonic voltage distortion. Harmonic current distortion. Stage 1 limits. Stage 2 limits. Stage 3 Limits Addition of Harmonics Short Duration Harmonics Site Measurements	ER G5/4 Supported by ACE Report No.73)
7	AC Traction Supplies to British Rail Type of supply point to railway system. Estimation of traction loads. Nature of traction current. System disturbance estimation. Earthing arrangements.	ER P24

< End of **Planning Code (PC) >**

CONNECTION CONDITIONS

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CC.7.8 SITE OPERATIONAL PROCEDURES

CC.7.8.1 **NGC** and **Users** with an interface with **NGC**, must make available staff to take necessary **Safety Precautions** and carry out operational duties as may be required to enable work/testing to be carried out and for the operation of **Plant** and **Apparatus** connected to the **Total System**.

CC.8 ANCILLARY SERVICES

CC.8.1 System Ancillary Services

The **CC** contain requirements for the capability for certain **Ancillary Services**, which are needed for **System** reasons ("**System Ancillary Services**"). There follows a list of these **System Ancillary Services**, together with the paragraph number of the **CC** (or other part of the **Grid Code**) in which the minimum capability is required or referred to. The list is divided into two categories: Part 1 lists the **System Ancillary Services** which **Generators** are obliged to provide, and Part 2 lists the **System Ancillary Services** which **Generators** will provide only if agreement to provide them is reached with **NGC**:

Part 1

(a) **Reactive Power** supplied otherwise than by means of synchronous or static compensators - CC.6.3.2

(b) **Frequency** Control by means of **Frequency** sensitive generation - CC.6.3.7 and BC3.5.1

Part 2

(c) **Frequency** Control by means of **Fast Start** - CC.6.3.14

(d) **Black Start Capability** - CC.6.3.5

CC.8.2 Commercial Ancillary Services

Other **Ancillary Services** are also utilised by **NGC** in operating the **Total System** if these have been agreed to be provided by a **User** (or other person) under an **Ancillary Services Agreement** or under a **Bilateral Agreement**, with payment being dealt with under an **Ancillary Services Agreement** or in the case of **Externally Interconnected System Operators** or **Interconnector Users**, under any other agreement (and in the case of **Externally Interconnected System Operators** and **Interconnector Users** includes ancillary services equivalent to or similar to **System Ancillary Services**) ("**Commercial Ancillary Services**"). The capability for these **Commercial Ancillary Services** is set out in the relevant **Ancillary Services Agreement** or **Bilateral Agreement** (as the case may be).

CONNECTION CONDITIONS

APPENDIX 1

FORMAT, PRINCIPLES AND BASIC PROCEDURE TO BE USED IN THE PREPARATION OF **SITE RESPONSIBILITY SCHEDULES**

CC.A.1.1 PRINCIPLES

Types of Schedules

CC.A.1.1.1 At all **Complexes** the following **Site Responsibility Schedules** shall be drawn up using the relevant proforma attached or with such variations as may be agreed between **NGC** and **Users**, but in the absence of agreement the relevant proforma attached will be used:

(a) Schedule of **HV Apparatus**

(b) Schedule of **Plant**, **LV/MV Apparatus**, services and supplies;

(c) Schedule of telecommunications and measurements **Apparatus**.

Other than at **Generating Unit** and **Power Station** locations, the schedules referred to in (b) and (c) may be combined.

New **Connection Sites**

CC.A.1.1.2 In the case of a new **Connection Site** each **Site Responsibility Schedule** for a **Connection Site** shall be prepared by **NGC** in consultation with relevant **Users** at least 2 weeks prior to the **Completion Date** under the **Bilateral Agreement** and/or **Construction Agreement** for that **Connection Site** (which may form part of a **Complex**). Each **User** shall, in accordance with the timing requirements of the **Bilateral Agreement** and/or **Construction Agreement** , provide information to **NGC** to enable it to prepare the **Site Responsibility Schedule**.

Sub-division

CC.A.1.1.3 Each **Site Responsibility Schedule** will be subdivided to take account of any separate **Connection Sites** on that **Complex**.

Scope

CC.A.1.1.4 Each **Site Responsibility Schedule** shall detail for each item of **Plant** and **Apparatus**:-

(a) **Plant/Apparatus** ownership;

(b) Site Manager (Controller) (except in the case of **Plant/Apparatus** located in **SPT's Transmission Area**);

(c) Safety issues comprising applicable **Safety Rules** and **Control Person** or other responsible person (**Safety Co-ordinator**), or such other person who is responsible for safety;

(d) Operations issues comprising applicable **Operational Procedures** and control engineer;

(e) Responsibility to undertake statutory inspections, fault investigation and maintenance.

Each **Connection Point** shall be precisely shown.

Detail

CC.A.1.1.5 (a) In the case of **Site Responsibility Schedules** referred to in CC.A.1.1.1(b) and (c), with the exception of **Protection Apparatus** and **Intertrip Apparatus** operation, it will be sufficient to indicate the responsible **User** or **Transmission Licensee**, as the case may be.

(b) In the case of the **Site Responsibility Schedule** referred to in CC.A.1.1.1(a) and for **Protection Apparatus** and **Intertrip Apparatus**, the responsible management unit must be shown in addition to the **User** or **Transmission Licensee**, as the case may be.

CC.A.1.1.6 The **HV Apparatus Site Responsibility Schedule** for each **Connection Site** must include lines and cables emanating from or traversing[1] the **Connection Site**.

Issue Details

CC.A.1.1.7 Every page of each **Site Responsibility Schedule** shall bear the date of issue and the issue number.

Accuracy Confirmation

CC.A.1.1.8 When a **Site Responsibility Schedule** is prepared it shall be sent by **NGC** to the **Users** involved for confirmation of its accuracy.

CC.A.1.1.9 The **Site Responsibility Schedule** shall then be signed on behalf of **NGC** by its **Responsible Manager** (see CC.A.1.1.16) and on behalf of each **User** involved by its **Responsible Manager** (see CC.A.1.1.16), by way of written confirmation of its accuracy. For **Connection Sites** in Scotland, the **Site Responsibility Schedule** will also be signed on behalf of the **Relevant Transmission Licensee** by its **Responsible Manager**.

Distribution and Availability

CC.A.1.1.10 Once signed, two copies will be distributed by **NGC**, not less than two weeks prior to its implementation date, to each **User** which is a party on the **Site Responsibility Schedule**, accompanied by a note indicating the issue number and the date of implementation.

CC.A.1.1.11 **NGC** and **Users** must make the **Site Responsibility Schedules** readily available to operational staff at the **Complex** and at the other relevant control points.

[1] Details of circuits traversing the **Connection Site** are only needed from the date which is the earlier of the date when the **Site Responsibility Schedule** is first updated and 15th October 2004. In Scotland, from a date to be agreed between **NGC** and **the Relevant Transmission Licensee**.

Alterations to Existing **Site Responsibility Schedules**

CC.A 1.1.12 Without prejudice to the provisions of CC.A.1.1.15 which deals with urgent changes, when a **User** identified on a **Site Responsibility Schedule** becomes aware that an alteration is necessary, it must inform **NGC** immediately and in any event 8 weeks prior to any change taking effect (or as soon as possible after becoming aware of it, if less than 8 weeks remain when the **User** becomes aware of the change). This will cover the commissioning of new **Plant** and/or Apparatus at the **Connection Site,** whether requiring a revised **Bilateral Agreement** or not, de-commissioning of **Plant** and/or **Apparatus**, and other changes which affect the accuracy of the **Site Responsibility Schedule.**

CC.A 1.1.13 Where **NGC** has been informed of a change by a **User**, or itself proposes a change, it will prepare a revised **Site Responsibility Schedule** by not less than six weeks prior to the change taking effect (subject to it having been informed or knowing of the change eight weeks prior to that time) and the procedure set out in CC.A.1.1.8 shall be followed with regard to the revised **Site Responsibility Schedule**.

CC.A 1.1.14 The revised **Site Responsibility Schedule** shall then be signed in accordance with the procedure set out in CC.A.1.1.9 and distributed in accordance with the procedure set out in CC.A.1.1.10, accompanied by a note indicating where the alteration(s) has/have been made, the new issue number and the date of implementation.

Urgent Changes

CC.A.1.1.15 When a **User** identified on a **Site Responsibility Schedule**, or **NGC**, as the case may be, becomes aware that an alteration to the **Site Responsibility Schedule** is necessary urgently to reflect, for example, an emergency situation which has arisen outside its control, the **User** shall notify **NGC**, or **NGC** shall notify the **User**, as the case may be, immediately and will discuss:

(a) what change is necessary to the **Site Responsibility Schedule;**

(b) whether the **Site Responsibility Schedule** is to be modified temporarily or permanently;

(c) the distribution of the revised **Site Responsibility Schedule**.

NGC will prepare a revised **Site Responsibility Schedule** as soon as possible, and in any event within seven days of it being informed of or knowing the necessary alteration. The **Site Responsibility Schedule** will be confirmed by **Users** and signed on behalf of **NGC** and **Users** (by the persons referred to in CC.A.1.1.9) as soon as possible after it has been prepared and sent to **Users** for confirmation.

Responsible Managers

CC.A.1.1.16 Each **User** shall, prior to the **Completion Date** under each **Bilateral Agreement** and/or **Construction Agreement**, supply to **NGC** a list of Managers who have been duly authorised to sign **Site Responsibility Schedules** on behalf of the **User** and **NGC** shall, prior to the **Completion Date** under each **Bilateral Agreement** and/or **Construction Agreement**, supply to that **User** the name of its **Responsible Manager** and for **Connection Sites** in Scotland, the name of the **Relevant Transmission Licensee's Responsible Manager** and each shall supply to the other any changes to such list six weeks before the change takes effect where the

change is anticipated, and as soon as possible after the change, where the change was not anticipated.

De-commissioning of **Connection Sites**

CC.A.1.1.17 Where a **Connection Site** is to be de-commissioned, whichever of **NGC** or the **User** who is initiating the de-commissioning must contact the other to arrange for the **Site Responsibility Schedule** to be amended at the relevant time.

ATTACHMENT TO APPENDIX 1 OF **CONNECTION CONDITIONS**

PROFORMA FOR **SITE RESPONSIBILITY SCHEDULE**

_____ AREA

COMPLEX: _____ SCHEDULE: _____

CONNECTION SITE: _____

ITEM OF PLANT/ APPARATUS	PLANT APPARATUS OWNER	SITE MANAGER	SAFETY		OPERATIONS		PARTY RESPONSIBLE FOR UNDERTAKING STATUTORY INSPECTIONS, FAULT INVESTIGATION & MAINTENANCE	REMARKS
			SAFETY RULES	CONTROL OR OTHER RESPONSIBLE PERSON (SAFETY CO-ORDINATOR	OPERATIONAL PROCEDURES	CONTROL OR OTHER RESPONSIBLE ENGINEER		

PAGE: _____ ISSUE NO: _____ DATE: _____

ATTACHMENT TO APPENDIX 1 OF **CONNECTION CONDITIONS**

PROFORMA FOR **SITE RESPONSIBILITY SCHEDULE**

_____ AREA

COMPLEX: _____ SCHEDULE: _____

CONNECTION SITE: _____

ITEM OF PLANT/ APPARATUS	PLANT APPARATUS OWNER	SITE MANAGER	SAFETY		OPERATIONS		PARTY RESPONSIBLE FOR UNDERTAKING STATUTORY INSPECTIONS, FAULT INVESTIGATION & MAINTENANCE	REMARKS
			SAFETY RULES	CONTROL OR OTHER RESPONSIBLE PERSON (SAFETY CO-ORDINATOR	OPERATIONAL PROCEDURES	CONTROL OR OTHER RESPONSIBLE ENGINEER		

NOTES:

SIGNED: _____ NAME: _____ COMPANY: _____ DATE: _____

SIGNED: _____ NAME: _____ COMPANY: _____ DATE: _____

SIGNED: _____ NAME: _____ COMPANY: _____ DATE: _____

SIGNED: _____ NAME: _____ COMPANY: _____ DATE: _____

PAGE: _____ ISSUE NO: _____ DATE: _____

SP TRANSMISSION Ltd
SITE RESPONSIBILITY SCHEDULE
OWNERSHIP, MAINTENANCE AND OPERATIONS OF EQUIPMENT
IN JOINT USER SITUATIONS

Network Area:

Sheet No.
Revision:
Date:

SECTION 'A' BUILDING AND SITE

OWNER		ACCESS REQUIRED:-	
LESSEE			
MAINTENANCE		SPECIAL CONDITIONS:-	
SAFETY			
SECURITY		LOCATION OF SUPPLY TERMINALS:-	

SECTION 'B' CUSTOMER OR OTHER PARTY

NAME:-					
ADDRESS:-					
TEL NO:-					
SUB STATION:-					
LOCATION:-					

SECTION 'C' PLANT

ITEM Nos.	EQUIPMENT	IDENTIFICATION	OWNER	SAFETY RULES APPLICABLE	OPERATION				MAINTENANCE		FAULT INVESTIGATION			TESTING		RELAY SETTINGS	REMARKS
					Tripping	Closing	Isolating	Earthing	Primary Equip.	Protection Equip.	Primary Equip.	Protection Equip.	Reclosure	Trip and Alarm	Primary Equip.		

SECTION 'D' CONFIGURATION AND CONTROL

ITEM Nos.	CONFIGURATION RESPONSIBILITY	TELEPHONE NUMBER	REMARKS

ITEM Nos.	CONTROL RESPONSIBILITY	TELEPHONE NUMBER	REMARKS

SECTION 'E' ADDITIONAL INFORMATION

ABBREVIATIONS:-
D - SP AUTHORISED PERSON - DISTRIBUTION SYSTEM
NGC - NATIONAL GRID COMPANY
SPD - SP DISTRIBUTION Ltd
SPPS - POWERSYSTEMS
SPT - SP TRANSMISSION Ltd
ST - SCOTTISH POWER TELECOMMUNICATIONS
T - SP AUTHORISED PERSON - TRANSMISSION SYSTEM
U - USER

SIGNED _____ FOR SP Transmission DATE _____

SIGNED _____ FOR SP Distribution DATE _____

SIGNED _____ FOR PowerSystems/User DATE _____

Scottish Hydro-Electric Transmission Limited

Site Responsibility Schedule

Substation Type			Number:			Revision:		

Equipment	Owner	Controller	Maintainer	Responsible System User	Responsible Management Unit	Control Authority	Safety Rules	Operational Procedures	Notes

CONNECTION CONDITIONS

APPENDIX 2

PART 1A

PROCEDURES RELATING TO OPERATION DIAGRAMS

FIXED CAPACITOR

EARTH

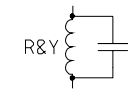
EARTHING RESISTOR

LIQUID EARTHING RESISTOR

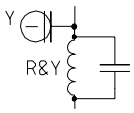
ARC SUPPRESSION COIL

FIXED MAINTENANCE EARTHING DEVICE

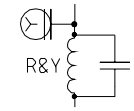
CARRIER COUPLING EQUIPMENT
(WITHOUT VT)



CARRIER COUPLING EQUIPMENT
(WITH VT ON ONE PHASE)



CARRIER COUPLING EQUIPMENT
(WITH VT ON 3 PHASES)



AC GENERATOR

SYNCHRONOUS COMPENSATOR

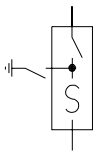
CIRCUIT BREAKER

CIRCUIT BREAKER
WITH DELAYED AUTO RECLOSE

WITHDRAWABLE METALCLAD
SWITCHGEAR

SWITCH DISCONNECTOR

SWITCH DISCONNECTOR
WITH INCORPORATED
EARTH SWITCH



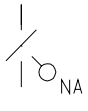
DISCONNECTOR
(CENTRE ROTATING POST)

DISCONNECTOR
(SINGLE BREAK
DOUBLE ROTATING)

DISCONNECTOR
(SINGLE BREAK)

DISCONNECTOR
(NON-INTERLOCKED)

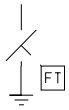
DISCONNECTOR
(POWER OPERATED)
NA - NON-AUTOMATIC
A - AUTOMATIC
SO - SEQUENTIAL OPERATION
FI - FAULT INTERFERING OPERATION



EARTH SWITCH

FAULT THROWING SWITCH
(PHASE TO PHASE)

FAULT THROWING SWITCH
(EARTH FAULT)

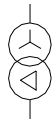


SURGE ARRESTOR

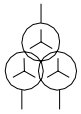
THYRISTOR

TRANSFORMERS
(VECTORS TO INDICATE
WINDING CONFIGURATION)

TWO WINDING

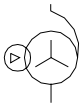


THREE WINDING



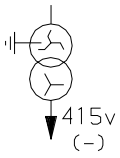
AUTO

AUTO WITH DELTA TERTIARY



EARTHING OR AUX. TRANSFORMER

(-) INDICATE REMOTE SITE
IF APPLICABLE



VOLTAGE TRANSFORMERS

SINGLE PHASE WOUND

THREE PHASE WOUND

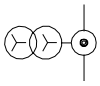
SINGLE PHASE CAPACITOR

TWO SINGLE PHASE CAPACITOR

THREE PHASE CAPACITOR

* CURRENT TRANSFORMER
(WHERE SEPARATE PRIMARY
APPARATUS)

* COMBINED VT/CT UNIT
FOR METERING

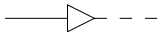


REACTOR

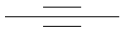
* BUSBARS

* OTHER PRIMARY CONNECTIONS

* CABLE & CABLE SEALING END

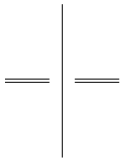


* THROUGH WALL BUSHING



* BYPASS FACILITY

* CROSSING OF CONDUCTORS
(LOWER CONDUCTOR
TO BE BROKEN)



PREFERENTIAL ABBREVIATIONS

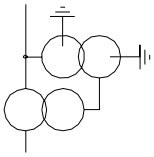
AUXILIARY TRANSFORMER	Aux T
EARTHING TRANSFORMER	ET
GAS TURBINE	Gas T
GENERATOR TRANSFORMER	Gen T
GRID TRANSFORMER	Gr T
SERIES REACTOR	Ser Reac
SHUNT REACTOR	Sh Reac
STATION TRANSFORMER	Stn T
SUPERGRID TRANSFORMER	SGT
UNIT TRANSFORMER	UT

* NON-STANDARD SYMBOL

PORTABLE MAINTENANCE
EARTH DEVICE

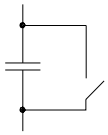
DISCONNECTOR
(PANTOGRAPH TYPE)

QUADRATURE BOOSTER



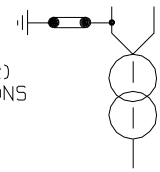
DISCONNECTOR
(KNEE TYPE)

SHORTING/DISCHARGE SWITCH

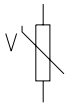


CAPACITOR
(INCLUDING HARMONIC FILTER)

SINGLE PHASE TRANSFORMER(BR)
NEUTRAL AND PHASE CONNECTIONS



RESISTOR WITH INHERENT
NON-LINEAR VARIABILITY,
VOLTAGE DEPENDANT



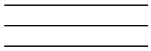
CONNECTION CONDITIONS

APPENDIX 2

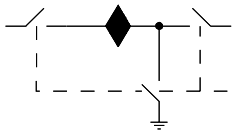
PART 1B

PROCEDURES RELATING TO GAS ZONE DIAGRAMS

GAS INSULATED BUSBAR

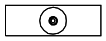


DOUBLE-BREAK DISCONNECTOR



GAS BOUNDARY

EXTERNAL MOUNTED CURRENT TRANSFORMER (WHERE SEPARATE PRIMARY APPARATUS)



GAS/GAS BOUNDARY

STOP VALVE NORMALLY CLOSED

GAS/CABLE BOUNDARY

STOP VALVE NORMALLY OPEN

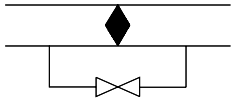
GAS/AIR BOUNDARY

GAS MONITOR

GAS/TRANSFORMER BOUNDARY

FILTER

MAINTENANCE VALVE



QUICK ACTING COUPLING

CONNECTION CONDITIONS

APPENDIX 2

NON-EXHAUSTIVE LIST OF **APPARATUS**
TO BE INCLUDED ON **OPERATION DIAGRAMS**

PART 2

Basic Principles

1. Where practicable, all the **HV Apparatus** on any **Connection Site** shall be shown on one **Operation Diagram**. Provided the clarity of the diagram is not impaired, the layout shall represent as closely as possible the geographical arrangement on the **Connection Site**.

2. Where more than one **Operation Diagram** is unavoidable, duplication of identical information on more than one **Operation Diagram** must be avoided.

3. The **Operation Diagram** must show accurately the current status of the **Apparatus** eg. whether commissioned or decommissioned. Where decommissioned, the associated switchbay will be labelled "spare bay".

4. Provision will be made on the **Operation Diagram** for signifying approvals, together with provision for details of revisions and dates.

5. **Operation Diagrams** will be prepared in A4 format or such other format as may be agreed with **NGC**.

6. The **Operation Diagram** should normally be drawn single line. However, where appropriate, detail which applies to individual phases shall be shown. For example, some **HV Apparatus** is numbered individually per phase.

APPARATUS TO BE SHOWN ON **OPERATION DIAGRAM**

1. Busbars
2. Circuit Breakers
3. Disconnector (Isolator) and Switch Disconnecters (Switching Isolators)
4. Disconnectors (Isolators) - Automatic Facilities
5. Bypass Facilities
6. Earthing Switches
7. Maintenance Earths
8. Overhead Line Entries
9. Overhead Line Traps
10. Cable and Cable Sealing Ends
11. Generating Unit
12. Generator Transformers
13. Generating Unit Transformers, Station Transformers, including the lower voltage circuit-breakers.
14. Synchronous Compensators
15. Static Variable Compensators
16. Capacitors (including Harmonic Filters)
17. Series or Shunt Reactors (Referred to as "Inductors" at nuclear power station sites)
18. Supergrid and Grid Transformers
19. Tertiary Windings
20. Earthing and Auxiliary Transformers
21. Three Phase VT's
22. Single Phase VT & Phase Identity
23. High Accuracy VT and Phase Identity
24. Surge Arrestors/Diverters
25. Neutral Earthing Arrangements on HV Plant
26. Fault Throwing Devices
27. Quadrature Boosters
28. Arc Suppression Coils
29. Single Phase Transformers (BR) Neutral and Phase Connections
30. Current Transformers (where separate plant items)
31. Wall Bushings
32. Combined VT/CT Units
33. Shorting and Discharge Switches
34. Thyristor
35. Resistor with Inherent Non-Linear Variability, Voltage Dependent
36. Gas Zone

CONNECTION CONDITIONS

APPENDIX 3

MINIMUM FREQUENCY RESPONSE REQUIREMENT PROFILE AND OPERATING RANGE for new Generating Units and/or CCGT Modules with a Completion Date after 1 January 2001 in England and Wales and 1 April 2005 in Scotland

CC.A.3.1 SCOPE

The frequency response capability is defined in terms of **Primary Response**, **Secondary Response** and **High Frequency Response**. This appendix defines the minimum frequency response requirement profile for each **Generating Unit** and/or **CCGT Module** which has a **Completion Date** after 1 January 2001 in England and Wales and 1 April 2005 in Scotland. For the avoidance of doubt, this appendix does not apply to **Generating Units** and/or **CCGT Modules** which have a **Completion Date** before 1 January 2001 or to **Small Power Stations**. The functional definition provides appropriate performance criteria relating to the provision of frequency control by means of frequency sensitive generation in addition to the other requirements identified in CC.6.3.7.

In this Appendix 3 to the **CC**, for a **CCGT Module** with more than one **Generating Unit**, the phrase **Minimum Generation** applies to the entire **CCGT Module** operating with all **Generating Units Synchronised** to the **System**.

The minimum frequency response requirement profile is shown diagrammatically in Figure CC.A.3.1. The capability profile specifies the minimum required levels of **Primary Response**, **Secondary Response** and **High Frequency Response** throughout the normal plant operating range. The definitions of these frequency response capabilities are illustrated diagrammatically in Figures CC.A.3.2 & CC.A.3.3.

CC.A.3.2 PLANT OPERATING RANGE

The upper limit of the operating range is the **Registered Capacity** of the **Generating Unit** or **CCGT Module**.

The **Minimum Generation** level may be less than, but must not be more than, 65% of the **Registered Capacity**. Each **Generating Unit** and/or **CCGT Module** must be capable of operating satisfactorily down to the **Designed Minimum Operating Level** as dictated by **System** operating conditions, although it will not be instructed to below its **Minimum Generation** level. If a **Generating Unit** or **CCGT Module** is operating below **Minimum Generation** because of high **System Frequency**, it should recover adequately to its **Minimum Generation** level as the **System Frequency** returns to **Target Frequency** so that it can provide **Primary** and **Secondary Response** from **Minimum Generation** if the **System Frequency** continues to fall. For the avoidance of doubt, under normal operating conditions steady state operation below **Minimum Generation** is not expected. The **Designed Minimum Operating Level** must not be more than 55% of **Registered Capacity**.

In the event of a **Generating Unit** or **CCGT Module** load rejecting down to no less than its **Designed Minimum Operating Level** it should not trip as a result of automatic action as detailed in BC3.7. If the load rejection is to a level less than the **Designed Minimum Operating Level** then it is accepted that the condition might be so severe as to cause it to be disconnected from the **System**.

CC.A.3.3 MINIMUM FREQUENCY RESPONSE REQUIREMENT PROFILE

Figure CC.A.3.1 shows the minimum frequency response requirement profile diagrammatically for a 0.5 Hz change in **Frequency**. The percentage response capabilities and loading levels are defined on the basis of the **Registered Capacity** of the **Generating Unit** or **CCGT Module**. Each **Generating Unit** and/or **CCGT Module** must be capable of operating in a manner to provide frequency response at least to the solid boundaries shown in the figure. If the frequency response capability falls within the solid boundaries, the **Generating Unit** or **CCGT Module** is providing response below the minimum requirement which is not acceptable. Nothing in this appendix is intended to prevent a **Generating Unit** or **CCGT Module** from being designed to deliver a frequency response in excess of the identified minimum requirement.

The frequency response delivered for **Frequency** deviations of less than 0.5 Hz should be no less than a figure which is directly proportional to the minimum frequency response requirement for a **Frequency** deviation of 0.5 Hz. For example, if the **Frequency** deviation is 0.2 Hz, the corresponding minimum frequency response requirement is 40% of the level shown in Figure CC.A.3.1. The frequency response delivered for **Frequency** deviations of more than 0.5 Hz should be no less than the response delivered for a **Frequency** deviation of 0.5 Hz.

Each **Generating Unit** and/or **CCGT Module** must be capable of providing some response, in keeping with its specific operational characteristics, when operating between 95% to 100% of **Registered Capacity** as illustrated by the dotted lines in Figure CC.A.3.1.

At the **Minimum Generation** level, each **Generating Unit** and/or **CCGT Module** is required to provide high and low frequency response depending on the **System Frequency** conditions. Where the **Frequency** is high, the **Active Power** output is therefore expected to fall below the **Minimum Generation** level.

The **Designed Minimum Operating Level** is the output at which a **Generating Unit** and/or **CCGT Module** has no **High Frequency Response** capability. It may be less than, but must not be more than, 55% of the **Registered Capacity**. This implies that a **Generating Unit** or **CCGT Module** is not obliged to reduce its output to below this level unless the **Frequency** is at or above 50.5 Hz (cf BC3.7).

CC.A.3.4 TESTING OF FREQUENCY RESPONSE CAPABILITY

The response capabilities shown diagrammatically in Figure CC.A.3.1 are measured by taking the responses as obtained from some of the dynamic response tests specified by **NGC** and carried out by **Generators** for compliance purposes and to validate the content of **Ancillary Services Agreements** using an injection of a frequency change to the plant control system (ie governor and load controller). The injected signal is a linear ramp from zero to 0.5 Hz frequency change over a ten second period, and is sustained at 0.5 Hz frequency change thereafter, as illustrated diagrammatically in figures CC.A.3.2 and CC.A.3.3.

The **Primary Response** capability (P) of a **Generating Unit** or a **CCGT Module** is the minimum increase in **Active Power** output between 10 and 30 seconds after the start of the ramp injection as illustrated diagrammatically in Figure CC.A.3.2.

The **Secondary Response** capability (S) of a **Generating Unit** or a **CCGT Module** is the minimum increase in **Active Power** output between 30 seconds and 30 minutes after the start of the ramp injection as illustrated diagrammatically in Figure CC.A.3.2.

The **High Frequency Response** capability (H) of a **Generating Unit** or a **CCGT Module** is the decrease in **Active Power** output provided 10 seconds after the start of the ramp injection and sustained thereafter as illustrated diagrammatically in Figure CC.A.3.3.

CC.A.3.5 REPEATABILITY OF RESPONSE

When a **Generating Unit** or **CCGT Module** has responded to a significant **Frequency** disturbance, its response capability must be fully restored as soon as technically possible. Full response capability should be restored no later than 20 minutes after the initial change of **System Frequency** arising from the **Frequency** disturbance.

Figure CC.A.3.1 - Minimum Frequency Response Requirement Profile

for a 0.5 Hz frequency change from Target Frequency

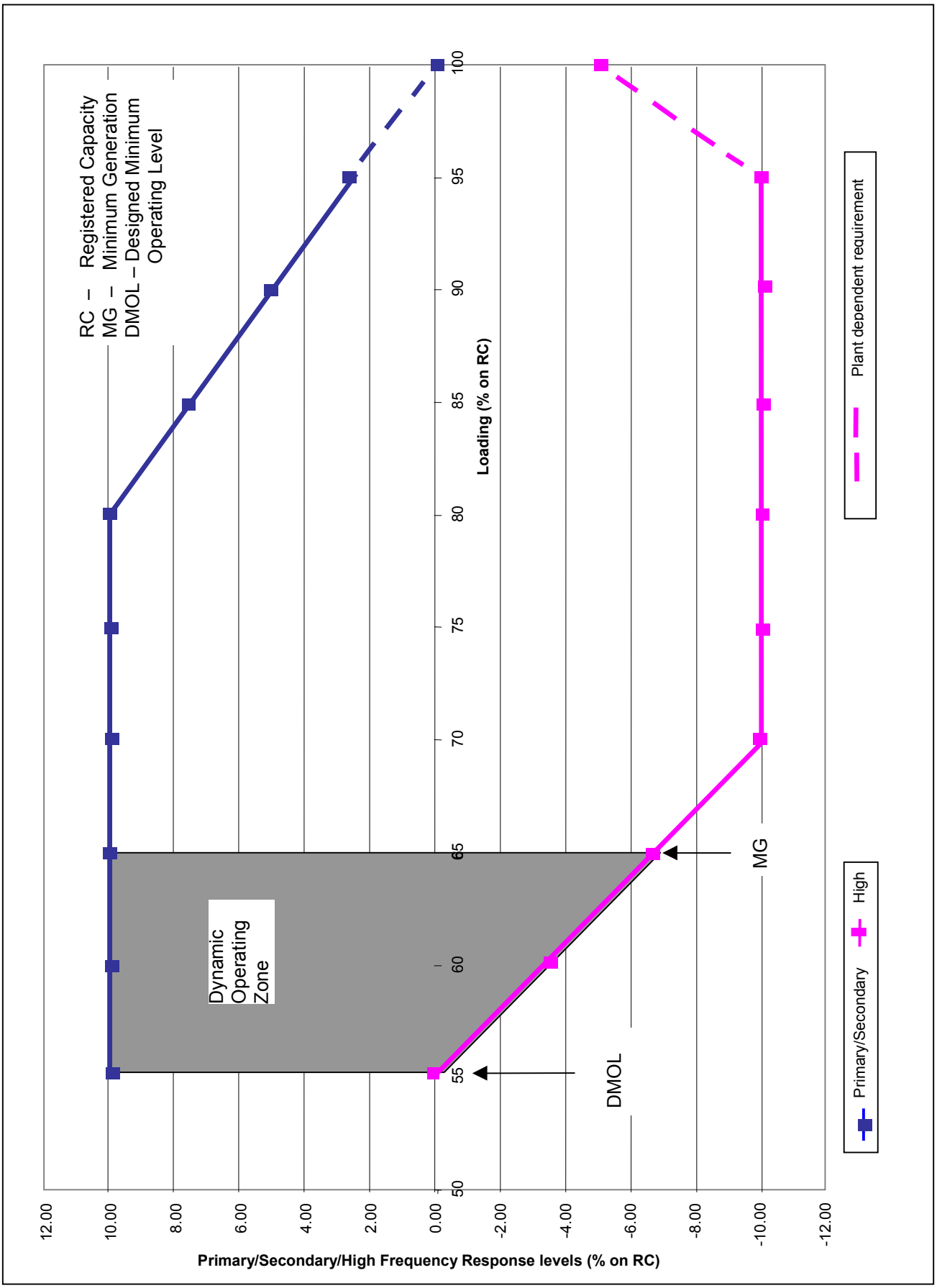


Figure CC.A.3.2 - Interpretation of Primary and Secondary Response Values

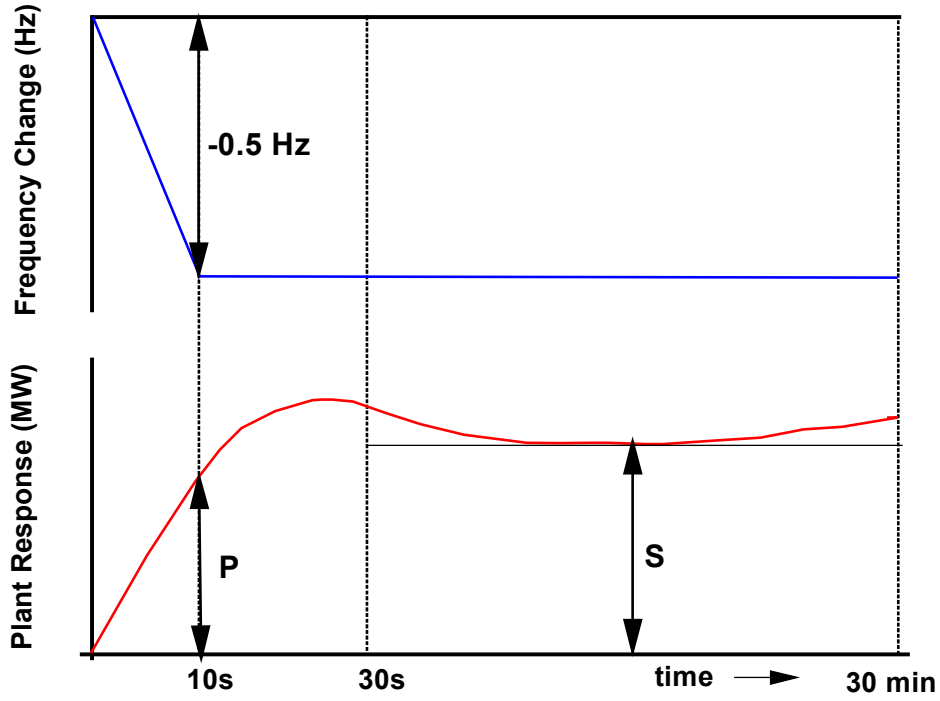
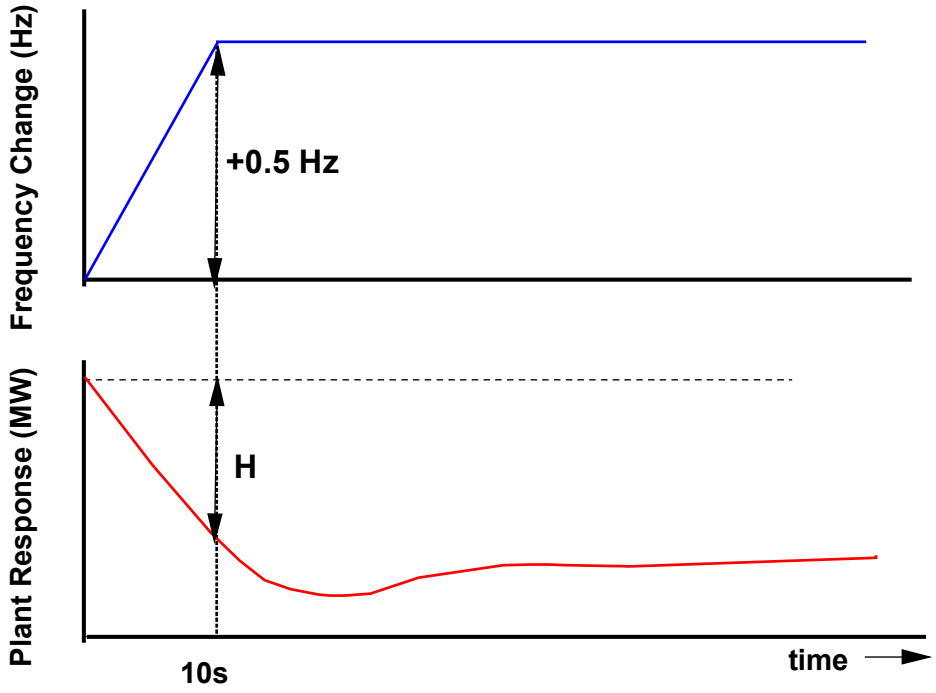


Figure CC.A.3.3 - Interpretation of High Frequency Response Values



APPENDIX 4

[Not Used]

APPENDIX 5

TECHNICAL REQUIREMENTS
LOW FREQUENCY RELAYS FOR THE AUTOMATIC
DISCONNECTION OF SUPPLIES AT LOW **FREQUENCY**

CC.A.5.1 **LOW FREQUENCY RELAYS**

CC.A.5.1.1 The **Low Frequency Relays** to be used shall be in accordance with the requirements of the **Bilateral Agreement**. They should have a setting range of 47.0 to 50Hz and be suitable for operation from a nominal AC input of 63.5, 110 or 240V. The following general parameters on the requirements of approved **Low Frequency Relays** for automatic installations is given as an indication, without prejudice to the provisions that may be included in a **Bilateral Agreement**:

(a)	**Frequency** settings:	47-50Hz in steps of 0.05Hz or better, preferably 0.01Hz;
(b)	Measurement period settings:	Within a minimum selectable settings range of 4 to 6 cycles;
(c)	Operating time:	Between 100 and 150ms dependent on measurement period setting;
(d)	Voltage lock-out:	Selectable within a range of 55 to 90% of nominal voltage;
(e)	Facility stages:	One or two stages of **Frequency** operation;
(f)	Output contacts:	Two output contacts per stage to be capable of repetitively making and breaking for 1000 operations.

CC.A.5.2 **LOW FREQUENCY RELAY** VOLTAGE SUPPLIES

CC.A.5.2.1 It is essential that the voltage supply to the **Low Frequency Relays** shall be derived from the primary **System** at the supply point concerned so that the **Frequency** of the **Low Frequency Relays** input voltage is the same as that of the primary **System**. This requires either:

(a) the use of a secure supply obtained from voltage transformers directly associated with the grid transformer(s) concerned, the

supply being obtained where necessary via a suitable automatic voltage selection scheme; or

(b) the use of the substation 240V phase-to-neutral selected auxiliary supply, provided that this supply is always derived at the supply point concerned and is never derived from a standby supply **Generating Unit** or from another part of the **User System**.

CC.A.5.3 SCHEME REQUIREMENTS

CC.A.5.3.1 The tripping facility should be engineered in accordance with the following reliability considerations:

(a) Dependability

Failure to trip at any one particular **Demand** shedding point would not harm the overall operation of the scheme. However, many failures would have the effect of reducing the amount of **Demand** under low **Frequency** control. An overall reasonable minimum requirement for the dependability of the **Demand** shedding scheme is 96%, ie. the average probability of failure of each **Demand** shedding point should be less than 4%. Thus the **Demand** under low **Frequency** control will not be reduced by more than 4% due to relay failure.

(b) Outages

Low **Frequency Demand** shedding schemes will be engineered such that the amount of **Demand** under control is as specified by **NGC** and is not reduced unacceptably during equipment outage or maintenance conditions.

< End of CC >

OPERATING CODE NO.7

OPERATIONAL LIAISON

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(This contents page does not form part of the Grid Code)

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OPERATING CODE NO.7

OPERATIONAL LIAISON

OC7.1 INTRODUCTION

OC7.1.1 **Operating Code No. 7** ("**OC7**") sets out the requirements for the exchange of information in relation to **Operations** and/or **Events** on the **Total System** which have had (or may have had) or will have (or may have) an **Operational Effect**:

(a) on the **GB Transmission System** in the case of an **Operation** and/or **Event** occurring on the **System** of a **User** or **Users**; and

(b) on the **System** of a **User** or **Users** in the case of an **Operation** and/or **Event** occurring on the **GB Transmission System**.

It also describes the types of **GB Transmission System Warning** which may be issued by **NGC**.

OC7.1.2 The requirement to notify in **OC7** relates generally to notifying of what is expected to happen or what has happened and not the reasons why. However, as **OC7** provides, when an **Event** or **Operation** has occurred on the **GB Transmission System** which itself has been caused by (or exacerbated by) an **Operation** or **Event** on a **User's System**, **NGC** in reporting the **Event** or **Operation** on the **GB Transmission System** to another **User** can pass on what it has been told by the first **User** in relation to the **Operation** or **Event** on the first **User's System**.

OC7.1.3 Where an **Event** or **Operation** on the **GB Transmission System** falls to be reported by **NGC** to an **Externally Interconnected System Operator** under an **Interconnection Agreement**, **OC7** provides that in the situation where that **Event** or **Operation** has been caused by (or exacerbated by) an **Operation** or **Event** on a **User's System**, **NGC** can pass on what it has been told by the **User** in relation to the **Operation** or **Event** on that **User's System**.

OC7.1.4 OC7 also deals with **Integral Equipment Tests**.

OC7.1.5 To reconfigure the **GB Transmission System**, **NGC** may reasonably require the assistance of a **User** to reconfigure parts of the **User System.** To reconfigure its **User System** a **User** may reasonably require the reasonable assistance of **NGC** to direct the reconfiguration of parts of the **GB Transmission System.**

OC7.1.6 OC7.6 sets down the arrangements for the exchange of information required when configuring **Connection Sites** and parts of the **GB Transmission System** adjacent to those **Connection Sites** in Scotland. It also covers the setting up of a **Local Switching Procedure**. **NGC** shall procure that **Relevant Transmission Licensees** shall comply with section OC7.6 and any relevant **Local Switching Procedure** where and to the extent that such matters apply to them.

OC7.2 OBJECTIVE

The objectives of OC7 are:-

OC7.2.1 To provide for the exchange of information so that the implications of an **Operation** and/or **Event** can be considered, possible risks arising from it can be assessed and appropriate action taken by the relevant party in order to maintain the integrity of the

Total System. **OC7** does not seek to deal with any actions arising from the exchange of information, but merely with that exchange.

OC7.2.2 To provide for types of **GB Transmission System Warnings** which may be issued by **NGC**.

OC7.2.3 To provide the framework for the information flow and discussion between **NGC** and certain **Users** in relation to **Integral Equipment Tests**.

OC7.2.4 To provide the procedure to be followed in respect of **Operational Switching** in Scotland.

OC7.3 SCOPE

OC7.3.1 **OC7** applies to **NGC** and to **Users,** which in **OC7** means:-

(a) **Generators** (other than those which only have **Embedded Small Power Stations** or **Embedded Medium Power Stations**);

(b) **Network Operators;**

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

(d) **Suppliers** (for the purposes of **GB Transmission System Warnings**)**;** and

(e) **Externally Interconnected System Operators** (for the purposes of **GB Transmission System Warnings**).

The procedure for operational liaison by **NGC** with **Externally Interconnected System Operators** is set out in the **Interconnection Agreement** with each **Externally Interconnected System Operator.**

In Scotland OC7.6 also applies to **Relevant Transmission Licensees**.

OC7.4 PROCEDURE

OC7.4.1 The term "**Operation**" means a scheduled or planned action relating to the operation of a **System** (including an **Embedded Power Station**).

OC7.4.2 The term "**Event**" means an unscheduled or unplanned (although it may be anticipated) occurrence on, or relating to, a **System** (including an **Embedded Power Station**) including, without limiting that general description, faults, incidents and breakdowns and adverse weather conditions being experienced.

OC7.4.3 The term "**Operational Effect**" means any effect on the operation of the relevant other **System** which causes the **GB Transmission System** or the **Systems** of the other **User** or **Users**, as the case may be, to operate (or be at a materially increased risk of operating) differently to the way in which they would or may have normally operated in the absence of that effect.

OC7.4.4 References in this **OC7** to a **System** of a **User** or **User's System** shall not include **Embedded Small Power Stations** or **Embedded Medium Power Stations**, unless otherwise stated.

OC7.4.5 Requirement to notify **Operations**

OC7.4.5.1 **Operation** on the **GB Transmission System**

In the case of an **Operation** on the **GB Transmission System,** which will have (or may have) an **Operational Effect** on the **System(s)** of a **User** or **Users**, **NGC** will notify the **User** or **Users** whose **System(s)** will, or may, in the reasonable opinion of **NGC**, be affected, in accordance with **OC7**.

OC7.4.5.2 **Operation** on a **User's System**

In the case of an **Operation** on the **System** of a **User** which will have (or may have) an **Operational Effect** on the **GB Transmission System** (including an equivalent to an **Operation** on the equivalent of a **System** of a **User** or other person connected to that **User's System** which, via that **User System**, will or may have an **Operational Effect** on the **GB Transmission System**), the **User** will notify **NGC** in accordance with **OC7**. Following notification by the **User**, **NGC** will notify any other **User** or **Users** on whose **System(s)** the **Operation** will have, or may have, in the reasonable opinion of **NGC,** an **Operational Effect**, in accordance with **OC7** and will notify any **Externally Interconnected System Operator** on whose **System** the **Operation** will have, or may have, in the reasonable opinion of **NGC**, an **Operational Effect**, if it is required to do so by the relevant **Interconnection Agreement**.

OC7.4.5.3 Examples of situations where notification by **NGC** or a **User** may be required

Whilst in no way limiting the general requirement to notify in advance set out in OC7.4.5.1 and OC7.4.5.2, the following are examples of situations where notification in accordance with OC7.4.5 will be required if they will, or may, have an **Operational Effect**:

(a) the implementation of a planned outage of **Plant** and/or **Apparatus** which has been arranged pursuant to **OC2**;

(b) the operation (other than, in the case of a **User**, at the instruction of **NGC**) of any circuit breaker or isolator/disconnector or any sequence or combination of the two; or

(c) voltage control.

OC7.4.5.4 **Operations** caused by another **Operation** or by an **Event**

An **Operation** may be caused by another **Operation** or an **Event** on another's **System** (including an **Embedded Power Station**) (or by the equivalent of an **Event** or **Operation** on the **System** of an **Externally Interconnected System Operator** or **Interconnector User**) and in that situation the information to be notified is different to that where the **Operation** arose independently of any other **Operation** or **Event**, as more particularly provided in OC7.4.5.6.

OC7.4.5.5 Form

A notification and any response to any questions asked under OC7.4.5, of an **Operation** which has arisen independently of any other **Operation** or of an **Event**, shall be of sufficient detail to describe the **Operation** (although it need not state the cause) and to enable the recipient of the notification reasonably to consider and

assess the implications and risks arising (provided that, in the case of an **Operation** on a **User's System** which **NGC** is notifying to other **Users** under OC7.4.5.2, **NGC** will only pass on what it has been told by the **User** which has notified it) and will include the name of the individual reporting the **Operation** on behalf of **NGC** or the **User**, as the case may be. The recipient may ask questions to clarify the notification and the giver of the notification will, insofar as it is able, answer any questions raised, provided that, in the case of an **Operation** on a **User's System** which **NGC** is notifying to other **Users** under OC7.4.5.2, in answering any question, **NGC** will not pass on anything further than that which it has been told by the **User** which has notified it. **NGC** may pass on the information contained in the notification as provided in OC7.4.5.6.

OC7.4.5.6 (a) A notification by **NGC** of an **Operation** under OC7.4.5.1 which has been caused by another **Operation** (the "first **Operation**") or by an **Event** on a **User's System**, will describe the **Operation** and will contain the information which **NGC** has been given in relation to the first **Operation** or that **Event** by the **User**. The notification and any response to any questions asked (other than in relation to the information which **NGC** is merely passing on from a **User**) will be of sufficient detail to enable the recipient of the notification reasonably to consider and assess the implications and risks arising from the **Operation** on the **GB Transmission System** and will include the name of the individual reporting the **Operation** on behalf of **NGC**. The recipient may ask questions to clarify the notification and **NGC** will, insofar as it is able, answer any questions raised, provided that in relation to the information which **NGC** is merely passing on from a **User**, in answering any question **NGC** will not pass on anything further than that which it has been told by the **User** which has notified it.

(b) Where a **User** is reporting an **Operation** or an **Event** which itself has been caused by an incident or scheduled or planned action affecting (but not on) its **System**, the notification to **NGC** will contain the information which the **User** has been given by the person connected to its **System** in relation to that incident or scheduled or planned action (which the **User** must require, contractually or otherwise, the person connected to its **System** to give to it) and **NGC** may pass on the information contained in the notification as provided in this OC7.4.5.6.

OC7.4.5.7 Where an **Operation** on the **GB Transmission System** falls to be reported by **NGC** under an **Interconnection Agreement** and the **Operation** has been caused by another **Operation** (the "first **Operation**") or by an **Event** on a **User's System**, **NGC** will include in that report the information which **NGC** has been given in relation to the first **Operation** or that **Event** by the **User** (including any information relating to an incident or scheduled or planned action, as provided in OC7.4.5.6).

OC7.4.5.8 (a) A notification to a **User** by **NGC** of an **Operation** under OC7.4.5.1 which has been caused by the equivalent of an **Operation** or of an **Event** on the equivalent of a **System** of an **Externally Interconnected System Operator** or **Interconnector User**, will describe the **Operation** on the **GB Transmission System** and will contain the information which **NGC** has been given, in relation to the equivalent of an **Operation** or of an **Event** on the equivalent of a **System** of an **Externally Interconnected System Operator** or **Interconnector User**, by that **Externally Interconnected System Operator** or **Interconnector User**.

(b) The notification and any response to any question asked (other than in relation to the information which **NGC** is merely passing on from that **Externally Interconnected System Operator** or **Interconnector User**) will be of sufficient detail to enable the recipient of the notification reasonably to consider and assess the implications and risks arising from the **Operation** on the **GB Transmission System** and will include the name of the individual reporting the **Operation** on behalf of **NGC**. The recipient may ask questions to clarify the notification and **NGC** will, insofar as it is able, answer any questions raised, provided that, in relation to the information which **NGC** is merely passing on from an **Externally Interconnected System Operator** or **Interconnector User**, in answering any question **NGC** will not pass on anything further than that which it has been told by the **Externally Interconnected System Operator** or **Interconnector User** which has notified it.

OC7.4.5.9 (a) A **Network Operator** may pass on the information contained in a notification to it from **NGC** under OC7.4.5.1, to a **Generator** with a **Generating Unit** connected to its **System**, or to the operator of another **User System** connected to its **System** (which, for the avoidance of doubt, could be another **Network Operator**), in connection with reporting the equivalent of an **Operation** under the **Distribution Code** (or the contract pursuant to which that **Generating Unit** or other **User System** is connected to the **System** of that **Network Operator**) (if the **Operation** on the **GB Transmission System** caused it).

(b) A **Generator** may pass on the information contained in a notification to it from **NGC** under OC7.4.5.1, to another **Generator** with a **Generating Unit** connected to its **System,** or to the operator of a **User System** connected to its **System** (which, for the avoidance of doubt, could be a **Network Operator**), if it is required (by a contract pursuant to which that **Generating Unit** or that **User System** is connected to its **System**) to do so in connection with the equivalent of an **Operation** on its **System** (if the **Operation** on the **GB Transmission System** caused it).

OC7.4.5.10 (a) Other than as provided in OC7.4.5.9, a **Network Operator** or a **Generator** may not pass on any information contained in a notification to it from **NGC** under OC7.4.5.1 (and an operator of a **User System** or **Generator** receiving information which was contained in a notification to a **Generator** or a **Network Operator**, as the case may be, from **NGC** under OC7.4.5.1, as envisaged in OC7.4.5.9 may not pass on this information) to any other person, but may inform persons connected to its **System** (or in the case of a **Generator** which is also a **Supplier**, inform persons to which it supplies electricity which may be affected) that there has been an incident on the **Total System**, the general nature of the incident (but not the cause of the incident) and (if known and if power supplies have been affected) an estimated time of return to service.

(b) In the case of a **Generator** which has an **Affiliate** which is a **Supplier**, the **Generator** may inform it that there has been an incident on the **Total System**, the general nature of the incident (but not the cause of the incident) and (if known and if power supplies have been affected in a particular area) an estimated time of return to service in that area, and that **Supplier** may pass this on to persons to which it supplies electricity which may be affected).

(c) Each **Network Operator** and **Generator** shall use its reasonable endeavours to procure that any **Generator** or operator of a **User System** receiving information which was contained in a notification to a **Generator** or **Network Operator**, as the case may be, from **NGC** under OC7.4.5.1, which is not bound by the **Grid Code**, does not pass on any information other than as provided above.

OC7.4.5.11 The notification will, if either party requests, be recorded by the sender and dictated to the recipient, who shall record and repeat each phrase as it is received and on completion of the dictation shall repeat back the notification in full to the sender who shall confirm that it has been accurately recorded.

OC7.4.5.12 Timing

A notification under OC7.4.5 will be given as far in advance as possible and in any event shall be given in sufficient time as will reasonably allow the recipient to consider and assess the implications and risks arising.

OC7.4.6 Requirements to notify **Events**

OC7.4.6.1 **Events** on the **GB Transmission System**

In the case of an **Event** on the **GB Transmission System** which has had (or may have had) an **Operational Effect** on the **System(s)** of a **User** or **Users**, **NGC** will notify the **User** or **Users** whose **System(s)** have been, or may have been, in the reasonable opinion of **NGC,** affected, in accordance with **OC7**.

OC7.4.6.2 **Events** on a **User's System**

In the case of an **Event** on the **System** of a **User** which has had (or may have had) an **Operational Effect** on the **GB Transmission System**, the **User** will notify **NGC** in accordance with **OC7**.

OC7.4.6.3 **Events** caused by another **Event** or by an **Operation**

An **Event** may be caused (or exacerbated by) another **Event** or by an **Operation** on another's **System** (including on an **Embedded Power Station**) (or by the equivalent of an **Event** or **Operation** on the equivalent of a **System** of an **Externally Interconnected System Operator** or **Interconnector User**) and in that situation the information to be notified is different to that where the **Event** arose independently of any other **Event** or **Operation**, as more particularly provided in OC7.4.6.7.

OC7.4.6.4 **NGC** or a **User**, as the case may be, may enquire of the other whether an **Event** has occurred on the other's **System**. If it has, and the party on whose **System** the **Event** has occurred is of the opinion that it may have had an **Operational Effect** on the **System** of the party making the enquiry, it shall notify the enquirer in accordance with **OC7**.

OC7.4.6.5 Examples of situations where notification by **NGC** or a **User** may be required

Whilst in no way limiting the general requirement to notify set out in OC7.4.6.1, OC7.4.6.2 and OC7.4.6.3, the following are examples of situations where

notification in accordance with OC7.4.6 will be required if they have an **Operational Effect**:

(a) where **Plant** and/or **Apparatus** is being operated in excess of its capability or may present a hazard to personnel;

(b) the activation of any alarm or indication of any abnormal operating condition;

(c) adverse weather conditions being experienced;

(d) breakdown of, or faults on, or temporary changes in the capabilities of, **Plant** and/or **Apparatus**;

(e) breakdown of, or faults on, control, communication and metering equipment; or

(f) increased risk of inadvertent protection operation.

Form

OC7.4.6.6 A notification and any response to any questions asked under OC7.4.6.1 and OC7.4.6.2 of an **Event** which has arisen independently of any other **Event** or of an **Operation**, will describe the **Event**, although it need not state the cause of the **Event,** and, subject to that, will be of sufficient detail to enable the recipient of the notification reasonably to consider and assess the implications and risks arising and will include the name of the individual reporting the **Event** on behalf of **NGC** or the **User**, as the case may be. The recipient may ask questions to clarify the notification and the giver of the notification will, insofar as it is able (although it need not state the cause of the **Event**) answer any questions raised. **NGC** may pass on the information contained in the notification as provided in OC7.4.6.7.

OC7.4.6.7 (a) A notification (and any response to any questions asked under OC7.4.6.1) by **NGC** of (or relating to) an **Event** under OC7.4.6.1 which has been caused by (or exacerbated by) another **Event** (the "first **Event**") or by an **Operation** on a **User's System** will describe the **Event** and will contain the information which **NGC** has been given in relation to the first **Event** or that **Operation** by the **User** (but otherwise need not state the cause of the **Event**). The notification and any response to any questions asked (other than in relation to the information which **NGC** is merely passing on from a **User**) will be of sufficient detail to enable the recipient of the notification reasonably to consider and assess the implications and risks arising from the **Event** on the **GB Transmission System** and will include the name of the individual reporting the **Event** on behalf of **NGC**. The recipient may ask questions to clarify the notification and **NGC** will, insofar as it is able, answer any questions raised, provided that in relation to the information which **NGC** is merely passing on from a **User**, in answering any question **NGC** will not pass on anything further than that which it has been told by the **User** which has notified it.

(b) Where a **User** is reporting an **Event** or an **Operation** which itself has been caused by (or exacerbated by) an incident or scheduled or planned action affecting (but not on) its **System** the notification to **NGC** will contain the information which the **User** has been given by the person connected to its **System** in relation to that incident or scheduled or planned action (which the **User** must require, contractually or otherwise, the person connected to its

System to give to it) and **NGC** may pass on the information contained in the notification as provided in this OC7.4.6.7.

OC7.4.6.8 Where an **Event** on the **GB Transmission System** falls to be reported by **NGC** under an **Interconnection Agreement** and the **Event** has been caused by (or exacerbated by) another **Event** (the "first **Event**") or by an **Operation** on a **User's System**, **NGC** will include in that report the information which **NGC** has been given in relation to the first **Event** or that **Operation** by the **User** (including any information relating to an incident or scheduled or planned action on that **User's System**, as provided in OC7.4.6.7).

OC7.4.6.9 (a) A notification to a **User** (and any response to any questions asked under OC7.4.6.1) by **NGC** of (or relating to) an **Event** under OC7.4.6.1 which has been caused by (or exacerbated by) the equivalent of an **Event** or of an **Operation** on the equivalent of a **System** of an **Externally Interconnected System Operator** or **Interconnector User**, will describe the **Event** on the **GB Transmission System** and will contain the information which **NGC** has been given, in relation to the equivalent of an **Event** or of an **Operation** on the equivalent of a **System** of an **Externally Interconnected System Operator** or **Interconnector User**, by that **Externally Interconnected System Operator** or **Interconnector User** (but otherwise need not state the cause of the **Event**).

(b) The notification and any response to any questions asked (other than in relation to the information which **NGC** is merely passing on from that **Externally Interconnected System Operator** or **Interconnector User**) will be of sufficient detail to enable the recipient of the notification reasonably to consider and assess the implications and risks arising from the **Event** on the **GB Transmission System** and will include the name of the individual reporting the **Event** on behalf of **NGC**. The recipient may ask questions to clarify the notification and **NGC** will, insofar as it is able (although it need not state the cause of the **Event**) answer any questions raised, provided that, in relation to the information which **NGC** is merely passing on from an **Externally Interconnected System Operator** or **Interconnector User**, in answering any question **NGC** will not pass on anything further than that which it has been told by the **Externally Interconnected System Operator** or **Interconnector User** which has notified it.

OC7.4.6.10 (a) A **Network Operator** may pass on the information contained in a notification to it from **NGC** under OC7.4.6.1, to a **Generator** with a **Generating Unit** connected to its **System** or to the operator of another **User System** connected to its **System** (which, for the avoidance of doubt, could be a **Network Operator**), in connection with reporting the equivalent of an **Event** under the **Distribution Code** (or the contract pursuant to which that **Generating Unit** or other **User System** is connected to the **System** of that **Network Operator**) (if the **Event** on the **GB Transmission System** caused or exacerbated it).

(b) A **Generator** may pass on the information contained in a notification to it from **NGC** under OC7.4.6.1, to another **Generator** with a **Generating Unit** connected to its **System** or to the operator of a **User System** connected to its **System** (which, for the avoidance of doubt, could be a **Network Operator**), if it is required (by a contract pursuant to which that **Generating Unit** or that **User System** is connected to its **System**) to do so in connection

with the equivalent of an **Event** on its **System** (if the **Event** on the **GB Transmission System** caused or exacerbated it).

OC7.4.6.11 (a) Other than as provided in OC7.4.6.10, a **Network Operator** or a **Generator**, may not pass on any information contained in a notification to it from **NGC** under OC7.4.6.1 (and an operator of a **User System** or **Generator** receiving information which was contained in a notification to a **Generator** or a **Network Operator**, as the case may be, from **NGC** under OC7.4.6.1, as envisaged in OC7.4.6.10 may not pass on this information) to any other person, but may inform persons connected to its **System** (or in the case of a **Generator** which is also a **Supplier**, inform persons to which it supplies electricity which may be affected) that there has been an incident on the **Total System**, the general nature of the incident (but not the cause of the incident) and (if known and if power supplies have been affected) an estimated time of return to service.

(b) In the case of a **Generator** which has an **Affiliate** which is a **Supplier**, the **Generator** may inform it that there has been an incident on the **Total System**, the general nature of the incident (but not the cause of the incident) and (if known and if power supplies have been affected in a particular area) an estimated time of return to service in that area, and that **Supplier** may pass this on to persons to which it supplies electricity which may be affected).

(c) Each **Network Operator** and **Generator** shall use its reasonable endeavours to procure that any **Generator** or operator of a **User System** receiving information which was contained in a notification to a **Generator** or **Network Operator**, as the case may be, from **NGC** under OC7.4.6.1, which is not bound by the **Grid Code**, does not pass on any information other than as provided above.

OC7.4.6.12 When an **Event** relating to a **Generating Unit**, has been reported to **NGC** by a **Generator** under OC7.4.6 and it is necessary in order for the **Generator** to assess the implications of the **Event** on its **System** more accurately, the **Generator** may ask **NGC** for details of the fault levels from the **GB Transmission System** to that **Generating Unit** at the time of the **Event**, and **NGC** will, as soon as reasonably practicable, give the **Generator** that information provided that **NGC** has that information.

OC7.4.6.13 Except in an emergency situation the notification of an **Event** will, if either party requests, be recorded by the sender and dictated to the recipient, who shall record and repeat each phrase as it is received and on completion of the dictation shall repeat the notification in full to the sender who shall confirm that it has been accurately recorded.

Timing

OC7.4.6.14 A notification under OC7.4.6 shall be given as soon as possible after the occurrence of the **Event**, or time that the **Event** is known of or anticipated by the giver of the notification under **OC7**, and in any event within 15 minutes of such time.

OC7.4.7 Significant Incidents

OC7.4.7.1 Where a **User** notifies **NGC** of an **Event** under **OC7** which **NGC** considers has had or may have had a significant effect on the **GB Transmission System**, **NGC** will require the **User** to report that **Event** in writing in accordance with the provisions of **OC10** and will notify that **User** accordingly.

OC7.4.7.2 Where **NGC** notifies a **User** of an **Event** under **OC7** which the **User** considers has had or may have had a significant effect on that **User's System**, that **User** will require **NGC** to report that **Event** in writing in accordance with the provisions of **OC10** and will notify **NGC** accordingly.

OC7.4.7.3 **Events** which **NGC** requires a **User** to report in writing pursuant to OC7.4.7.1, and **Events** which a **User** requires **NGC** to report in writing pursuant to OC7.4.7.2, are known as "**Significant Incidents**".

OC7.4.7.4 Without limiting the general description set out in OC7.4.7.1 and OC7.4.7.2, a **Significant Incident** will include **Events** having an **Operational Effect** which result in, or may result in, the following:

(a) operation of **Plant** and/or **Apparatus** either manually or automatically;

(b) voltage outside statutory limits;

(c) **Frequency** outside statutory limits; or

(d) **System** instability.

OC 7.4.8 GB TRANSMISSION SYSTEM WARNINGS

OC7.4.8.1 Role of GB Transmission System Warnings

GB Transmission System Warnings as described below provide information relating to **System** conditions or **Events** and are intended to:

(i) alert **Users** to possible or actual **Plant** shortage, **System** problems and/or **Demand** reductions;

(ii) inform of the applicable period;

(iii) indicate intended consequences for **Users**; and

(iv) enable specified **Users** to be in a state of readiness to react properly to instructions received from **NGC**.

A table of **GB Transmission System Warnings**, set out in the Appendix to **OC7**, summarises the warnings and their usage. In the case of a conflict between the table and the provisions of the written text of **OC7**, the written text will prevail.

OC7.4.8.2 Recipients of GB Transmission System Warnings

(a) Where **GB Transmission System Warnings**,(except those relating to **Demand Control** Imminent), are applicable to **System** conditions or **Events** which have widespread effect, **NGC** will notify all **Users** under **OC7**.

(b) Where in **NGC's** judgement **System** conditions or **Events** may only have a limited effect, the **GB Transmission System Warning** will only be issued to those **Users** who are or may in **NGC's** judgement be affected.

(c) Where a **GB Transmission System Warning** - **Demand Control Imminent** is issued it will only be sent to those **Users** who are likely to receive **Demand Control** instructions from **NGC**.

OC7.4.8.3 Preparatory Action

(a) Where possible, and if required, recipients of the warnings should take such preparatory action as they deem necessary taking into account the information contained in the **GB Transmission System Warning**. All warnings will be of a form determined by **NGC** and will remain in force from the stated time of commencement until the cancellation, amendment or re-issue, as the case may be, is notified by **NGC**.

(b) Where a **GB Transmission System Warning** has been issued to a **Network Operator** and is current, **Demand Control** should not (subject as provided below) be employed unless instructed by **NGC**. If **Demand Control** is, however, necessary to preserve the integrity of the **Network Operator's System**, then the impact upon the integrity of the **Total System** should be considered by the **Network Operator** and where practicable discussed with **NGC** prior to its implementation.

Where a **GB Transmission System Warning** has been issued to a **Supplier,** further **Customer Demand Management** (in addition to that previously notified under **OC1 - Demand** Forecasts) must only be implemented following notification to **NGC**.

(c) **GB Transmission System Warnings** will be issued by fax, to the facsimile number(s) and locations agreed between **NGC** and **Users**, or by such electronic data transmission facilities as have been agreed. In the case of **Generators** with **Gensets** this will normally be at their **Trading Points** (if they have notified **NGC** that they have a **Trading Point)**

(d) **Users** may at times be informed by telephone or other means of **GB Transmission System Warnings** and in these circumstances confirmation will be sent to those **Users** so notified, by fax as soon as possible.

OC7.4.8.4 Types of **GB Transmission System Warnings**

GB Transmission System Warnings consist of the following types:-

(i) **GB Transmission System Warning - Inadequate System Margin**
(ii) **GB Transmission System Warning - High Risk of Demand Reduction**
(iii) **GB Transmission System Warning - Demand Control Imminent**
(iv) **GB Transmission System Warning - Risk of System Disturbance**

OC7.4.8.5 **GB Transmission System Warning - Inadequate System Margin**

A **GB Transmission System Warning - Inadequate System Margin** may be issued to **Users** in accordance with OC7.4.8.2, at times when there is inadequate

System Margin, as determined under BC1.5.4. It will contain the following information:

(i) the period for which the warning is applicable; and

(ii) the availability shortfall in MW; and

(iii) intended consequences for **Users**, including notification that **Maximum Generation Service** may be instructed.

OC 7.4.8.6 **GB Transmission System Warning - High Risk of Demand Reduction**

(a) A **GB Transmission System Warning - High Risk of Demand Reduction** may be issued to **Users** in accordance with OC7.4.8.2 at times when there is inadequate **System Margin**, as determined under BC1.5.4 and in **NGC's** judgement there is increased risk of **Demand** reduction being implemented under OC6.5.1. It will contain the following information in addition to the required information in a **GB Transmission System Warning - Inadequate System Margin**:

(i) the possible percentage level of **Demand** reduction required; and

(ii) Specify those **Network Operators** and **Non Embedded Customers** who may subsequently receive instructions under OC6.5.1.

(b) A **GB Transmission System Warning - High Risk of Demand Reduction** may also be issued by **NGC** to those **Network Operators** and **Non Embedded Customers** who may subsequently receive instructions under OC6.5.1 relating to a **Demand** reduction in circumstances not related to inadequate **System Margin** (for example **Demand** reduction required to manage **System** overloading).

The **GB Transmission System Warning - High Risk of Demand Reduction** will specify the period during which **Demand** reduction may be required and the part of the **Total System** to which it applies and any other matters specified in OC6.5.

OC7.4.8.6.1 Protracted Periods of Generation Shortage

(a) Whenever **NGC** anticipates that a protracted period of generation shortage may exist a **GB Transmission System Warning - Inadequate System Margin** or **High Risk of Demand Reduction** may be issued, to give as much notice as possible to those **Network Operators** and **Non Embedded Customers** who may subsequently receive instructions under OC6.5.

(b) A **GB Transmission System Warning - High Risk of Demand Reduction** will in these instances include an estimate of the percentage of **Demand** reduction that may be required and the anticipated duration of the **Demand** reduction. It may also include information relating to estimates of any further percentage of **Demand** reduction that may be required.

(c) The issue of the **GB Transmission System Warning - Inadequate System Margin** or **High Risk of Demand Reduction** is intended to enable recipients to plan ahead on the various aspects of **Demand** reduction.

OC7.4.8.7 **GB Transmission System Warning - Demand Control Imminent**

(a) A **GB Transmission System Warning** - **Demand Control Imminent**, relating to a **Demand** reduction under OC6.5, will be issued by **NGC** to **Users** in accordance with OC7.4.8.2. It will specify those **Network Operators** who may subsequently receive instructions under OC6.5.

(b) A **GB Transmission System Warning** - **Demand Control Imminent**, need not be preceded by any other **GB Transmission System Warning** and will be issued when a **Demand** reduction is expected within the following 30 minutes, but will not cease to have effect after 30 minutes from its issue. However, **NGC** will either reissue the **GB Transmission System Warning - Demand Control Imminent** or cancel the **GB Transmission System Warning** - **Demand Control Imminent** no later than 2 hours from first issue, or from re-issue, as the case may be.

OC7.4.8.8 **GB Transmission System Warning - Risk of System Disturbance**

(a) A **GB Transmission System Warning - Risk of System Disturbance** will be issued by **NGC** to **Users** who may be affected when **NGC** knows there is a risk of widespread and serious disturbance to the whole or part of, the **GB Transmission System**;

(b) The **GB Transmission System Warning** - **Risk of System Disturbance** will contain such information as **NGC** deems appropriate;

(c) for the duration of the **GB Transmission System Warning - Risk of System Disturbance**, each User in receipt of the **GB Transmission System Warning - Risk of System Disturbance** shall take the necessary steps to warn its operational staff and to maintain its **Plant** and/or **Apparatus** in the condition in which it is best able to withstand the anticipated disturbance;

(d) During the period that the **GB Transmission System Warning - Risk of System Disturbance** is in effect, **NGC** may issue **Emergency Instructions** in accordance with **BC2** and it may be necessary to depart from normal **Balancing Mechanism** operation in accordance with **BC2** in issuing **Bid-Offer Acceptances**.

OC7.4.8.9 **Cancellation of GB Transmission System Warning**

(a) **NGC** will give notification of a **Cancellation of GB Transmission System Warning** to all **Users** issued with the **GB Transmission System Warning** when in **NGC's** judgement **System** conditions have returned to normal.

(b) A **Cancellation of GB Transmission System Warning** will identify the type of **GB Transmission System Warning** being cancelled and the period for which it was issued. The **Cancellation of GB Transmission System Warning** will also identify any **GB Transmission System Warnings** that are still in force.

OC7.4.8.10 General Management of **GB Transmission System Warnings**

(a) **GB Transmission System Warnings** remain in force for the period specified unless superseded or cancelled by **NGC**.

(b) A **GB Transmission System Warning** issued for a particular period may be superseded by further related warnings. This will include **GB Transmission System Warning - Inadequate System Margin** being superseded by **GB Transmission System Warning - High Risk of Demand Reduction** and vice-versa.

(c) In circumstances where it is necessary for the period of a **GB Transmission System Warning** to be changed:

(i) the period applicable may be extended by the issue of a **GB Transmission System Warning** with a period which follows on from the original period, or

(ii) revised or updated **GB Transmission System Warnings** will be issued where there is an overlap with the period specified in an existing **GB Transmission System Warning**, but only if the revised period also includes the full period of the existing **GB Transmission System Warning**.

In any other case the existing **GB Transmission System Warning** will be cancelled and a new one issued.

(d) A **GB Transmission System Warning** is no longer applicable once the period has passed and to confirm this **NGC** will issue a **Cancellation of GB Transmission System Warning**.

OC7.5 PROCEDURE IN RELATION TO **INTEGRAL EQUIPMENT TESTS**

OC7.5.1 This section of the **Grid Code** deals with **Integral Equipment Tests**. It is designed to provide a framework for the exchange of relevant information and for discussion between **NGC** and certain **Users** in relation to **Integral Equipment Tests.**

OC7.5.2 An **Integral Equipment Test** :-

(a) is carried out in accordance with the provisions of this OC7.5 at:-

i) a **User Site**,
ii) a **Transmission Site**, or,
iii) an **Embedded Large Power Station**;

(b) will normally be undertaken during commissioning or re-commissioning of **Plant** and/or **Apparatus**;

(c) may, in the reasonable judgement of the person wishing to perform the test, cause, or have the potential to cause, an **Operational Effect** on a part or parts of the **Total System** but which with prior notice is unlikely to have a materially adverse effect on any part of the **Total System**; and

(d) may form part of an agreed programme of work.

OC7.5.3 A set of guidance notes is available from **NGC** on request, which provide further details on suggested procedures, information flows and responsibilities.

Notification of an **IET**

OC7.5.4 In order to undertake an **Integral Equipment Test** (and subject to OC7.5.8 below), the **User** or **NGC**, as the case may be, (the proposer) must notify the other (the recipient) of a proposed **IET**. Reasonable advance notification must be given, taking into account the nature of the test and the circumstances which make the test necessary. This will allow recipients time to adequately assess the impact of the **IET** on their **System**.

OC7.5.5 The notification of the **IET** must normally include the following information:-

a) the proposed date and time of the **IET**;

b) the name of the individual and the organisation proposing the **IET**;

c) a proposed programme of testing; and

d) such further detail as the proposer reasonably believes the recipient needs in order to assess the effect the **IET** may have on relevant **Plant** and/or **Apparatus**.

OC7.5.6 In the case of an **IET** in connection with commissioning or re-commissioning, the test should be incorporated as part of any overall commissioning programme agreed between **NGC** and the **User**.

Response to notification of an **IET**

OC7.5.7 The recipient of notification of an **IET** must respond within a reasonable timescale prior to the start time of the **IET** and will not unreasonably withhold or delay acceptance of the **IET** proposal.

OC7.5.8 (a) Where **NGC** receives notification of a proposed **IET** from a **User**, **NGC** will consult those other **Users** whom it reasonably believes may be affected by the proposed **IET** to seek their views. Information relating to the proposed **IET** may be passed on by **NGC** with the prior agreement of the proposer. However it is not necessary for **NGC** to obtain the agreement of any such **User** as **IETs** should not involve the application of irregular, unusual or extreme conditions. **NGC** may however consider any comments received when deciding whether or not to agree to an **IET**.

(b) In the case of an **Embedded Large Power Station**, the **Generator** must liaise with both **NGC** and the relevant **Network Operator**. **NGC** will not agree to an **IET** relating to such **Plant** until the **Generator** has shown that it has the agreement of the relevant **Network Operator**.

(c) A **Network Operator** will liaise with **NGC** as necessary in those instances where it is aware of an **Embedded Small Power Station** or an **Embedded Medium Power Station** which intends to perform tests which in the reasonable judgement of the **Network Operator** may cause an **Operational Effect** on the **GB Transmission System**.

OC7.5.9 The response from the recipient, following notification of an **IET** must be one of the following:-

a) to accept the **IET** proposal;

b) to accept the **IET** proposal conditionally subject to minor modifications such as date and time;

c) not to agree the **IET**, but to suggest alterations to the detail and timing of the **IET** that are necessary to make the **IET** acceptable.

Final confirmation of an **IET**

OC7.5.10 The date and time of an **IET** will be confirmed between **NGC** and the **User**, together with any limitations and restrictions on operation of **Plant** and/or **Apparatus**.

OC7.5.11 The **IET** may subsequently be amended following discussion and agreement between **NGC** and the **User**.

Carrying out an **IET**

OC7.5.12 **IETs** may only take place when agreement has been reached and must be carried out in accordance with the agreed programme of testing.

OC7.5.13 The implementation of an **IET** will be notified in accordance with OC7.4.5.

OC7.5.14 Where elements of the programme of testing change during the **IET**, there must be discussion between the appropriate parties to identify whether the **IET** should continue.

OC7.6 PROCEDURE IN RESPECT OF **OPERATIONAL SWITCHING** IN SCOTLAND

OC7.6.1 This section OC7.6 of the **Grid Code** sets out the procedure to be followed for **Operational Switching** in Scotland. Its provisions are supplementary to the provisions of the rest of this **OC7.**

It is designed to set down the arrangements for **NGC**, **Users** and the **Relevant Transmission Licensees** in respect of the **Operational Switching** of **Plant** and **Apparatus** at a **Connection Site** and parts of the **GB Transmission System** adjacent to that **Connection Site**.

OC7.6.2 In general:

(i) **NGC** is responsible for directing the configuration of the **GB Transmission System**

(ii) Each **Relevant Transmission Licensee** is responsible for the instruction and operation of its **Plant** and **Apparatus** on its **Transmission System**

(iii) Each **User** is responsible for the configuration, instruction and operation of its **Plant** and **Apparatus.**

Definitive schedules of these responsibilities for each **Connection Site** are contained in the relevant **Site Responsibility Schedules**.

For the avoidance of doubt, where a **User** operates **Transmission Plant** and **Apparatus** on behalf of a **Relevant Transmission Licensee**, **NGC** cannot instruct the **User** to operate that **Plant** and **Apparatus.**

Planned **Operational Switching**

OC7.6.3 Following the notification of an **Operation** under OC7.4.5, **NGC** and the **User** shall discuss the **Operational Switching** required. **NGC** will then discuss and agree the details of the **Operational Switching** with the **Relevant Transmission Licensee.** The **Relevant Transmission Licensee** shall then make contact with the **User** to initiate the **Operational Switching**. For the avoidance of doubt, from the time that the **Relevant Transmission Licensee** makes contact with the **User**, the **Relevant Transmission Licensee** shall then become the primary point of operational contact with the **User** in relation to **OC7** for matters which would or could affect, or would or could be affected by the **Operational Switching**.

OC7.6.4 The **User** shall be advised by the **Relevant Transmission Licensee** on the completion of the **Operational Switching**, that **NGC** shall again become the primary point of operational contact for the **User** in relation to **OC7**.

OC7.6.5 During **Operational Switching,** either the **Relevant Transmission Licensee** or the **User** may need to unexpectedly terminate the **Operational Switching. NGC** may also need to terminate the **Operational Switching** during the **Operational Switching.** In the event of unexpected termination of the **Operational Switching**, **NGC** shall become the primary point of operational contact for the **User** in relation to **OC7**. Following the termination of the **Operational Switching**, it will not be permitted to restart that **Operational Switching** without the parties again following the process described in OC7.6.3.

Emergencies

OC7.6.6 For **Operations** and/or **Events** that present an immediate hazard to the safety of personnel, **Plant** or **Apparatus**, the **Relevant Transmission Licensee** may:

(i) as permitted by the **STC**, carry out **Operational Switching** of **Plant** and **Apparatus** on its **Transmission System** without reference to **NGC** and the **User**, and

(ii) request a **User** to carry out **Operational Switching** without the **User** first receiving notification from **NGC.**

In such emergency circumstances, communication between the **Relevant Transmission Licensee** and the **User** shall normally be by telephone and will include an exchange of names. The **User** shall use all reasonable endeavours to carry out **Operational Switching** on its **Plant** and **Apparatus** without delay. Following completion of the requested **Operational Switching**, the **Relevant Transmission Licensee** shall notify **NGC** of the **Operational Switching** which has taken place. In such emergency circumstances, the **User** may only refuse to carry out **Operational Switching** on safety grounds (relating to personnel or plant) and this must be notified to the **Relevant Transmission Licensee** immediately by telephone.

OC7.6.7 For **Operations** and/or **Events** that present an immediate hazard to the safety of personnel, **Plant** or **Apparatus**, and which require **Operational Switching** of

Plant or **Apparatus** on a **Transmission System** in order to remove the hazard, the **User** should contact the **Relevant Transmission Licensee** directly to request **Operational Switching** of **Plant** or **Apparatus** on its **Transmission System**.

In such emergency circumstances, communication between the **Relevant Transmission Licensee** and the **User** shall normally be by telephone and will include an exchange of names. The **Relevant Transmission Licensee** shall use all reasonable endeavours to carry out **Operational Switching** on its **Plant** and **Apparatus** without delay. Following completion of the requested **Operational Switching**, the **User** shall notify **NGC** of the **Operational Switching** which has taken place. In such emergency circumstances, the **Relevant Transmission Licensee** may only refuse to carry out **Operational Switching** on safety grounds (relating to personnel or plant) and this must be notified to the **User** immediately by telephone.

OC7.6.8 Establishment of a **Local Switching Procedure**

(a) **NGC**, a **User** or a **Relevant Transmission Licensee** may reasonably require a **Local Switching Procedure** to be established.

(b) Where the need for a **Local Switching Procedure** arises the following provisions shall apply:-

(i) **NGC, User(s)** and the **Relevant Transmission Licensee** will discuss and agree the detail of the **Local Switching Procedure** as soon as the requirement for a **Local Switching Procedure** is identified. **NGC** will notify the **Relevant Transmission Licensee** and the affected **User(s)** and will initiate these discussions.

(ii) Each **Local Switching Procedure** shall be in relation to either one or more **Connection Sites** and parts of the **GB Transmission System** adjacent to the **Connection Site(s)**

(iii) A draft **Local Switching Procedure** shall be prepared by the **Relevant Transmission Licensee** to reflect the agreement reached and shall be sent to **NGC**.

(iv) When a **Local Switching Procedure** has been prepared, it shall be sent by **NGC** to the **Relevant Transmission Licensee** and **User(s)** for confirmation of its accuracy.

(v) The **Local Switching Procedure** shall then be signed on behalf of **NGC** and on behalf of each **User** and **Relevant Transmission Licensee** by way of written confirmation of its accuracy.

(vi) Once agreed under this OC7.6.8, the procedure will become a **Local Switching Procedure** under the **Grid Code**, and (subject to any change pursuant to this **OC7**) will apply between **NGC, Relevant Transmission Licensee** and the relevant **User(s)** as if it were part of the **Grid Code.**

(vii) Once signed, **NGC** will send a copy of the **Local Switching Procedure** to the **Relevant Transmission Licensee** and the **User(s)**.

(viii) An agreed **Local Switching Procedure** should be referenced by relevant **Site Responsibility Schedules**.

(ix) **NGC**, the **User(s)** and the **Relevant Transmission Licensee** must make the **Local Switching Procedure** readily available to the relevant operational staff.

(x) If the **Relevant Transmission Licensee** or the **User(s)** become aware that a change is needed to a **Local Switching Procedure**, they must inform **NGC** immediately. Where **NGC** has been informed of a need for a change**,** or **NGC** proposes a change, **NGC** shall notify both the affected **User** and the **Relevant Transmission Licensee** and will initiate discussions to agree a change to the **Local Switching Procedure**. The principles applying to the establishment of a new **Local Switching Procedure** shall then apply to the discussion and agreement of any changes.

GB TRANSMISSION SYSTEM WARNINGS TABLE

WARNING TYPE	Grid Code	FORMAT	to : for ACTION	to : for INFORMATION	TIMESCALE	WARNING OF/OR CONSEQUENCE	Response From Recipients
GB TRANSMISSION SYSTEM WARNING - Inadequate System Margin	OC7.4.8.5	Fax or other electronic means	Generators, Suppliers, Externally Interconnected System Operators	Network Operators, Non-Embedded Customers	All timescales when at the time there is not a high risk of Demand reduction. Primarily 1200 hours onwards for a future period.	Insufficient generation available to meet forecast Demand plus Operating Margin Notification that if not improved Demand reduction may be instructed. (Normal initial warning of insufficient System Margin)	Offers of increased availability from Generators and Interconnector Users. Suppliers notify **NGC** of any additional Customer Demand Management that they will initiate.
GB TRANSMISSION SYSTEM WARNING - High Risk of Demand Reduction	OC7.4.8.6	Fax or other electronic means	Generators, Suppliers, Network Operators, Non-Embedded Customers, Externally Interconnected System Operators		All timescales where there is a high risk of Demand reduction. Primarily 1200 hours onwards for a future period.	Insufficient generation available to meet forecast Demand plus Operating Margin and /or a high risk of Demand reduction being instructed. (May be issued locally as Demand reduction risk only for circuit overloads)	Offers of increased availability from Generators and Interconnector Users. Suppliers notify **NGC** of any additional Customer Demand Management that they will initiate. Specified Network Operators and Non-Embedded Customers to prepare their Demand reduction arrangements and take actions as necessary to enable compliance with **NGC** instructions that may follow. (Percentages of Demand reduction above 20 % may not be achieved if **NGC** has not issued the warning by 16.00 hours the previous day).
GB TRANSMISSION SYSTEM WARNING - Demand Control Imminent	OC7.4.8.7	Fax/ Telephone or other electronic means	**Specified Users only :** (to whom an instruction is to be given) Network Operators, Non-Embedded Customers	None	within 30 minutes of anticipated instruction.	Possibility of Demand reduction within 30 minutes.	Network Operators specified to prepare to take action as necessary to enable them to comply with any subsequent **NGC** instruction for Demand reduction.
GB TRANSMISSION SYSTEM WARNING - Risk of System Disturbance	OC7.4.8.8	Fax/ Telephone or other electronic means	Generators, Network Operators, Non-Embedded Customers, Externally Interconnected System	Suppliers	Control room timescales	Risk of, or widespread system disturbance to whole or part of the **GB Transmission System**	Recipients take steps to warn operational staff and maintain plant or apparatus such that they are best able to withstand the disturbance.

< End of OC7 >

OPERATING CODE NO.8

SAFETY CO-ORDINATION

OC8.1 INTRODUCTION

OC8.1.1 **OC8** specifies the standard procedures to be used for the co-ordination, establishment and maintenance of necessary **Safety Precautions** when work is to be carried out on or near the **GB Transmission System** or the **System** of a **User** and when there is a need for **Safety Precautions** on **HV Apparatus** on the other **System** for this work to be carried out safely. **OC8** Appendix 1 applies when work is to be carried out on or near to **Systems** in England and Wales and **OC8** Appendix 2 applies when work is to be carried out on or near to **Systems** in Scotland.

OC8.1.2 **OC8** also covers the co-ordination, establishment and maintenance of necessary safety precautions on the **Implementing Safety Co-ordinator's System** when work is to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment of the **User** or a **Transmission Licensee** as the case may be where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**.

OC.8.2 OBJECTIVE

OC8.2.1 The objective of OC8 is to achieve:-

(i) **Safety From The System** when work on or near a **System** necessitates the provision of **Safety Precautions** on another **System** on **HV Apparatus** up to a **Connection Point**; and

(ii) **Safety From The System** when work is to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment of the **User** or a **Transmission Licensee** (as the case may be) where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**.

OC8.3 SCOPE

OC8.3.1 **OC8** applies to **NGC** and to **Users**, which in **OC8** means:-

(a) **Generators**;

(b) **Network Operators**; and

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

In Scotland **OC8** also applies to **Relevant Transmission Licensees**.

The procedures for the establishment of safety co-ordination by **NGC** in relation to **External Interconnections** are set out in **Interconnection Agreements** with relevant persons for the **External Interconnections**.

OC8.4 PROCEDURE

OC8.4.1 Safety Co-ordination in England and Wales

OC8.4.1.1 **OC8** Appendix 1, OC8A, applies when work is to be carried out on or near to **Systems** in England and Wales or when **Safety Precautions** are required to be established in England and Wales when work is to be carried out on or near to **Systems** in Scotland.

OC8.4.2 Safety Co-ordination in Scotland

OC8.4.2.1 **OC8** Appendix 2, OC8B, applies when work is to be carried out on or near to **Systems** in Scotland or when **Safety Precautions** are required to be established in Scotland when work is to be carried out on or near to **Systems** in England or Wales.

OPERATING CODE NO.8 APPENDIX 1 (OC8A)

SAFETY CO-ORDINATION IN ENGLAND AND WALES

OC8A.1 INTRODUCTION

OC8A.1.1 **OC8A** specifies the standard procedures to be used by **NGC** and **Users** for the co-ordination, establishment and maintenance of necessary **Safety Precautions** when work is to be carried out on or near the **GB Transmission System** in England and Wales or the **System** of a **User** in England and Wales and when there is a need for **Safety Precautions** on **HV Apparatus** on the other's **System** for this work to be carried out safely. **OC8A** applies to **NGC** and **Users** only in England and Wales. Where work is to be carried out on or near equipment in Scotland, but such work requires **Safety Precautions** to be established in England and Wales, **OC8A** should be followed by **NGC** and **Users** to establish the required **Safety Precautions** in England and Wales.

OC8B specifies the procedures to be used by the **Relevant Transmission Licensees** and **Users** in Scotland.

In this **OC8A** the term "work" includes testing, other than **System Tests** which are covered by **OC12**.

OC8A.1.2 **OC8A** also covers the co-ordination, establishment and maintenance of necessary safety precautions on the **Implementing Safety Co-ordinator's System** when work is to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment of the **User** or **NGC** as the case may be where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**.

OC8A.1.3 **OC8A** does not apply to the situation where **Safety Precautions** need to be agreed solely between **Users**. **OC8A** does not apply to the situation where **Safety Precautions** need to be agreed solely between **Transmission Licensees**.

OC8A.1.4 **OC8A** does not seek to impose a particular set of **Safety Rules** on **NGC** and **Users**; the **Safety Rules** to be adopted and used by **NGC** and each **User** shall be those chosen by each.

OC8A.1.5 **Site Responsibility Schedules** document the control responsibility for each item of **Plant** and **Apparatus** for each site.

OC8A.1.6 Defined terms

OC8A.1.6.1 **Users** should bear in mind that in **OC8** only, in order that **OC8** reads more easily with the terminology used in certain **Safety Rules**, the term "**HV Apparatus**" is defined more restrictively and is used accordingly in **OC8A. Users** should, therefore, exercise caution in relation to this term when reading and using **OC8A.**

OC8A.1.6.2 In **OC8A** only the following terms shall have the following meanings:

(1) "**HV Apparatus**" means **High Voltage** electrical circuits forming part of a **System**, on which **Safety From The System** may be required or on which **Safety Precautions** may be applied to allow work to be carried out on a **System**.

(2) "**Isolation**" means the disconnection of **Apparatus** from the remainder of the **System** in which that **Apparatus** is situated by either of the following:

(a) an **Isolating Device** maintained in an isolating position. The isolating position must either be:

(i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be retained in safe custody; or

(ii) maintained and/or secured by such other method which must be in accordance with the **Local Safety Instructions** of **NGC** or that **User**, as the case may be; or

(b) an adequate physical separation which must be in accordance with, and maintained by, the method set out in the **Local Safety Instructions** of **NGC** or that **User**, as the case may be, and, if it is a part of that method, a **Caution Notice** must be placed at the point of separation.

(3) "**Earthing**" means a way of providing a connection between conductors and earth by an **Earthing Device** which is either:

(i) immobilised and **Locked** in the **Earthing** position. Where the **Earthing Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be retained in safe custody; or

(ii) maintained and/or secured in position by such other method which must be in accordance with the **Local Safety Instructions** of **NGC** or that **User** as the case may be.

OC8A.1.6.3 For the purpose of the co-ordination of safety relating to **HV Apparatus** the term **"Safety Precautions"** means **Isolation** and/or **Earthing.**

OC8A.2 OBJECTIVE

OC8A.2.1 The objective of **OC8A** is to achieve:-

(i) **Safety From The System** when work on or near a **System** necessitates the provision of **Safety Precautions** on another **System** on **HV Apparatus** up to a **Connection Point**; and

(ii) **Safety From The System** when work is to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment of the **User** or **NGC**

(as the case may be) where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**.

OC8A.2.2 A flow chart, set out in **OC8A Appendix C**, illustrates the process utilised in **OC8A** to achieve the objective set out in OC8A.2.1. In the case of a conflict between the flow chart and the provisions of the written text of **OC8A**, the written text will prevail.

OC8A.3 SCOPE

OC8A.3.1 **OC8A** applies to **NGC** and to **Users** in England and Wales, which in OC8A means:-

(a) **Generators**;

(b) **Network Operators**; and

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

The procedures for the establishment of safety co-ordination by **NGC** in relation to **External Interconnections** are set out in **Interconnection Agreements** with relevant persons for the **External Interconnections**.

OC8A.4 PROCEDURE

OC8A.4.1 Approval of **Local Safety Instructions**

OC8A.4.1.1 (a) In accordance with the timing requirements of its **Bilateral Agreement**, each **User** will supply to **NGC** a copy of its **Local Safety Instructions** relating to its side of the **Connection Point** at each **Connection Site**.

(b) In accordance with the timing requirements of each **Bilateral Agreement**, **NGC** will supply to each **User** a copy of its **Local Safety Instructions** relating to the **Transmission** side of the **Connection Point** at each **Connection Site**.

(c) Prior to connection **NGC** and the **User** must have approved each other's relevant **Local Safety Instructions** in relation to **Isolation** and **Earthing**.

OC8A.4.1.2 Either party may require that the **Isolation** and/or **Earthing** provisions in the other party's **Local Safety Instructions** affecting the **Connection Site** should be made more stringent in order that approval of the other party's **Local Safety Instructions** can be given. Provided these requirements are not unreasonable, the other party will make such changes as soon as reasonably practicable. These changes may need to cover the application of **Isolation** and/or **Earthing** at a place remote from the **Connection Site**, depending upon the **System** layout. Approval may not be withheld because the party required to approve reasonably believes the provisions relating to **Isolation** and/or **Earthing** are too stringent.

OC8A.4.1.3 If, following approval, a party wishes to change the provisions in its **Local Safety Instructions** relating to **Isolation** and/or **Earthing**, it must inform the other party. If the change is to make the provisions more stringent, then the other party merely has to note the changes. If the change is to make the provisions less stringent, then the

other party needs to approve the new provisions and the procedures referred to in OC8A.4.1.2 apply.

OC8A.4.2 **Safety Co-ordinators**

OC8A.4.2.1 For each **Connection Point**, **NGC** and each **User** will at all times have nominated and available a person or persons ("**Safety Co-ordinator(s)**") to be responsible for the co-ordination of **Safety Precautions** when work is to be carried out on a **System** which necessitates the provision of **Safety Precautions** on **HV Apparatus** pursuant to **OC8A**. A **Safety Co-ordinator** may be responsible for the co-ordination of safety on **HV Apparatus** at more than one **Connection Point**.

OC8A.4.2.2 Each **Safety Co-ordinator** shall be authorised by **NGC** or a **User**, as the case may be, as competent to carry out the functions set out in **OC8A** to achieve **Safety From The System**. Confirmation from **NGC** or a **User**, as the case may be, that its **Safety Co-ordinator(s)** as a group are so authorised is dealt with in CC.5.2. Only persons with such authorisation will carry out the provisions of **OC8A.**

OC8A.4.2.3 Contact between **Safety Co-ordinators** will be made via normal operational channels, and accordingly separate telephone numbers for **Safety Co-ordinators** need not be provided. At the time of making contact, each party will confirm that they are authorised to act as a **Safety Co-ordinator**, pursuant to **OC8A.**

OC8A.4.2.4 If work is to be carried out on a **System**, or on equipment of **NGC** or a **User** near to a **System**, as provided in this **OC8A**, which necessitates the provision of **Safety Precautions** on **HV Apparatus** in accordance with the provisions of **OC8A**, the **Requesting Safety Co-ordinator** who requires the **Safety Precautions** to be provided shall contact the relevant **Implementing Safety Co-ordinator** to co-ordinate the establishment of the **Safety Precautions**.

OC8A.4.3 **RISSP**

OC8A.4.3.1 **OC8A** sets out the procedures for utilising the **RISSP**, which will be used except where dealing with equipment in proximity to the other's **System** as provided in OC8A.8. Sections OC8A.4 to OC8A.7 inclusive should be read accordingly.

OC8A.4.3.2 **NGC** will use the format of the **RISSP** forms set out in Appendix A and Appendix B to **OC8A.** That set out in **OC8A** Appendix A and designated as "RISSP-R", shall be used when **NGC** is the **Requesting Safety Co-ordinator**, and that in **OC8A** Appendix B and designated as "RISSP-I", shall be used when **NGC** is the **Implementing Safety Co-ordinator**. Proformas of RISSP-R and RISSP-I will be provided for use by **NGC** staff.

OC8A.4.3.3 (a) **Users** may either adopt the format referred to in OC8A.4.3.2, or use an equivalent format, provided that it includes sections requiring insertion of the same information and has the same numbering of sections as RISSP-R and RISSP-I as set out in Appendices A and B respectively.

(b) Whether **Users** adopt the format referred to in OC8A.4.3.2, or use the equivalent format as above, the format may be produced and held in, and retrieved from an electronic form by the **User**.

(c) Whichever method **Users** choose, each must provide proformas (whether in tangible or electronic form) for use by its staff.

OC8A.4.3.4 All references to RISSP-R and RISSP-I shall be taken as referring to the corresponding parts of the alternative forms or other tangible written or electronic records used by each **User**.

OC8A.4.3.5 RISSP-R will have an identifying number written or printed on it, comprising a prefix which identifies the location at which it is issued, and a unique (for each **User** or **NGC**, as the case may be) serial number consisting of four digits and the suffix "R".

OC8A.4.3.6 (a) In accordance with the timing requirements set out in CC.5.2 each **User** shall apply in writing to **NGC** for **NGC's** approval of its proposed prefix.

(b) **NGC** shall consider the proposed prefix to see if it is the same as (or confusingly similar to) a prefix used by **NGC** or another **User** and shall, as soon as possible (and in any event within ten days), respond in writing to the **User** with its approval or disapproval.

(c) If **NGC** disapproves, it shall explain in its response why it has disapproved and will suggest an alternative prefix.

(d) If **NGC** has disapproved, then the **User** shall either notify **NGC** in writing of its acceptance of the suggested alternative prefix or it shall apply in writing to **NGC** with revised proposals and the above procedure shall apply to that application.

OC8A.4.3.7 The prefix allocation will be periodically circulated by **NGC** to all **Users,** for information purposes, using a National Grid Safety Circular in the form set out in **OC8A** Appendix D.

OC8A.5 SAFETY PRECAUTIONS ON HV APPARATUS

OC8A.5.1 Agreement of Safety Precautions

OC8A.5.1.1 The **Requesting Safety Co-ordinator** who requires **Safety Precautions** on another **System(s)** will contact the relevant **Implementing Safety Co-ordinator(s)** to agree the **Location** of the **Safety Precautions** to be established. This agreement will be recorded in the respective **Safety Logs**.

OC8A.5.1.2 It is the responsibility of the **Implementing Safety Co-ordinator** to ensure that adequate **Safety Precautions** are established and maintained, on his and/or another **System** connected to his **System**, to enable **Safety From The System** to be achieved on the **HV Apparatus**, specified by the **Requesting Safety Co-ordinator** which is to be identified in Part 1.1 of the **RISSP**. Reference to another **System** in this OC8A.5.1.2 shall not include the **Requesting Safety Co-ordinator's System** which is dealt with in OC8A.5.1.3.

OC8A.5.1.3 When the **Implementing Safety Co-ordinator** is of the reasonable opinion that it is necessary for **Safety Precautions** on the **System** of the **Requesting Safety Co-ordinator**, other than on the **HV Apparatus** specified by the **Requesting Safety Co-ordinator,** which is to be identified in Part 1.1 of the **RISSP**, he shall contact the **Requesting Safety Co-ordinator** and the details shall be recorded in part 1.1 of the

RISSP forms. In these circumstances it is the responsibility of the **Requesting Safety Co-ordinator** to establish and maintain such **Safety Precautions**.

OC8A.5.1.4 In the event of disagreement

In any case where the **Requesting Safety Co-ordinator** and the **Implementing Safety Co-ordinator** are unable to agree the **Location** of the **Isolation** and (if requested) **Earthing**, both shall be at the closest available points on the infeeds to the **HV Apparatus** on which **Safety From The System** is to be achieved as indicated on the **Operation Diagram**.

OC8A.5.2 Implementation of **Isolation**

OC8A.5.2.1 Following the agreement of the **Safety Precautions** in accordance with OC8A.5.1 the **Implementing Safety Co-ordinator** shall then establish the agreed **Isolation**.

OC8A.5.2.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Isolation** has been established, and identify the **Requesting Safety Co-ordinator's HV Apparatus** up to the **Connection Point**, for which the **Isolation** has been provided. The confirmation shall specify:

(a) for each **Location**, the identity (by means of **HV Apparatus** name, nomenclature and numbering or position, as applicable) of each point of **Isolation**;

(b) whether **Isolation** has been achieved by an **Isolating Device** in the isolating position or by an adequate physical separation;

(c) where an **Isolating Device** has been used whether the isolating position is either :

(i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** has been **Locked** with a **Safety Key** that the **Safety Key** has been secured in a **Key Safe** and the **Key Safe Key** will be retained in safe custody; or

(ii) maintained and/or secured by such other method which must be in accordance with the **Local Safety Instructions** of **NGC** or that **User**, as the case may be; and

(d) where an adequate physical separation has been used that it will be in accordance with, and maintained by, the method set out in the **Local Safety Instructions** of **NGC** or that **User**, as the case may be, and, if it is a part of that method, that a **Caution Notice** has been placed at the point of separation.

The confirmation of **Isolation** shall be recorded in the respective **Safety Logs**.

OC8A.5.2.3 Following the confirmation of **Isolation** being established by the **Implementing Safety Co-ordinator** and the necessary establishment of relevant **Isolation** on the **Requesting Safety Co-ordinators System**, the **Requesting Safety Co-ordinator**

may then request the implementation of **Earthing** by the **Implementing Safety Co-ordinator**, if agreed in section OC8A.5.1.

OC8A.5.3 Implementation of **Earthing**

OC8A.5.3.1 The **Implementing Safety Co-ordinator** shall then establish the agreed **Earthing**.

OC8A.5.3.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Earthing** has been established, and identify the **Requesting Safety Co-ordinator's HV Apparatus** up to the **Connection Point**, for which the **Earthing** has been provided. The confirmation shall specify:

(a) for each **Location**, the identity (by means of **HV Apparatus** name, nomenclature and numbering or position, as is applicable) of each point of **Earthing**; and

(b) in respect of the **Earthing Device** used, whether it is:

(i) immobilised and **Locked** in the **Earthing** position. Where the **Earthing Device** has been **Locked** with a **Safety Key**, that the **Safety Key** has been secured in a **Key Safe** and the **Key Safe Key** will be retained in safe custody; or

(ii) maintained and/or secured in position by such other method which is in accordance with the **Local Safety Instructions** of **NGC** or the **Relevant Transmission Licensee** or that **User**, as the case may be.

The confirmation of **Earthing** shall be recorded in the respective **Safety Logs**.

OC8A.5.3.3. The **Implementing Safety Co-ordinator** shall ensure that the established **Safety Precautions** are maintained until requested to be removed by the relevant **Requesting Safety Co-ordinator**.

OC8A.5.4 **RISSP** Issue Procedure

OC8A.5.4.1 Where **Safety Precautions** on another **System(s)** are being provided to enable work on the **Requesting Safety Co-ordinator's System**, before any work commences they must be recorded by a **RISSP** being issued. The **RISSP** is applicable to **HV Apparatus** up to the **Connection Point** identified in section 1.1 of the RISSP-R and RISSP-I forms.

OC8A.5.4.2 Where **Safety Precautions** are being provided to enable work to be carried out on both sides of the **Connection Point** a **RISSP** will need to be issued for each side of the **Connection Point** with **NGC** and the respective **User** each enacting the role of **Requesting Safety Co-ordinator**. This will result in a RISSP-R and a RISSP-I form being completed by each of the **NGC** and the **User**, with each **Safety Co-ordinator** issuing one **RISSP** number.

OC8A.5.4.3 Once the **Safety Precautions** have been established (in accordance with OC8A.5.2 and OC8A.5.3), the **Implementing Safety Co-ordinator** shall complete parts 1.1 and 1.2 of a RISSP-I form recording the details specified in OC8A.5.1.3, OC8A.5.2.2 and OC8A.5.3.2. Where **Earthing** has not been requested, Part 1.2(b) will be

completed with the words “not applicable” or “N/A”. He shall then contact the **Requesting Safety Co-ordinator** to pass on these details.

OC8A.5.4.4 The **Requesting Safety Co-ordinator** shall complete Parts 1.1 and 1.2 of the RISSP-R, making a precise copy of the details received. On completion, the **Requesting Safety Co-ordinator** shall read the entries made back to the sender and check that an accurate copy has been made.

OC8A.5.4.5 The **Requesting Safety Co-ordinator** shall then issue the number of the **RISSP**, taken from the RISSP-R, to the **Implementing Safety Co-ordinator** who will ensure that the number, including the prefix and suffix, is accurately recorded in the designated space on the RISSP-I form.

OC8A.5.4.6 The **Requesting Safety Co-ordinator** and the **Implementing Safety Co-ordinator** shall complete and sign Part 1.3 of the RISSP-R and RISSP-I respectively and then enter the time and date. When signed no alteration to the **RISSP** is permitted; the **RISSP** may only be cancelled.

OC8A.5.4.7 The **Requesting Safety Co-ordinator** is then free to authorise work (including a test that does not affect the **Implementing Safety Co-ordinator's System**) in accordance with the requirements of the relevant internal safety procedures which apply to the **Requesting Safety Co-ordinator’s System**. This is likely to involve the issue of safety documents or other relevant internal authorisations. Where testing is to be carried out which affects the **Implementing Safety Co-ordinator's System**, the procedure set out below in OC8A.6 shall be implemented.

OC8A.5.5 **RISSP** Cancellation Procedure

OC8A.5.5.1 When the **Requesting Safety Co-ordinator** decides that **Safety Precautions** are no longer required, he will contact the relevant **Implementing Safety Co-ordinator** to effect cancellation of the associated **RISSP**.

OC8A.5.5.2 The **Requesting Safety Co-ordinator** will inform the relevant **Implementing Safety Co-ordinator** of the **RISSP** identifying number (including the prefix and suffix), and agree it is the **RISSP** to be cancelled.

OC8A.5.5.3 The **Requesting Safety Co-ordinator** and the relevant **Implementing Safety Co-ordinator** shall then respectively complete Part 2.1 of their respective RISSP-R and RISSP-I forms and shall then exchange details. The details being exchanged shall include their respective names and time and date. On completion of the exchange of details the respective **RISSP** is cancelled. The removal of **Safety Precautions** is as set out in OC8A.5.5.4 and OC8A.5.5.5.

OC8A.5.5.4 Neither **Safety Co-ordinator** shall instruct the removal of any **Isolation** forming part of the **Safety Precautions** as part of the returning of the **HV Apparatus** to service until it is confirmed to each by each other that every earth on each side of the **Connection Point**, within the points of isolation identified on the **RISSP**, has been removed or disconnected by the provision of additional **Points of Isolation**.

OC8A.5.5.5 Subject to the provisions in OC8A.5.5.4, the **Implementing Safety Co-ordinator** is then free to arrange the removal of the **Safety Precautions**, the procedure to achieve that being entirely an internal matter for the party the **Implementing Safety**

Co-ordinator is representing. The only situation in which any **Safety Precautions** may be removed without first cancelling the **RISSP** in accordance with OC8A.5.5 or OC8A.5.6 is when **Earthing** is removed in the situation envisaged in OC8A.6.2(b).

OC8A.5.6 **RISSP** Change Control

Nothing in this **OC8A** prevents **NGC** and **Users** agreeing to a simultaneous cancellation and issue of a new **RISSP**, if both agree. It should be noted, however, that the effect of that under the relevant **Safety Rules** is not a matter with which the **Grid Code** deals.

OC8A.6 TESTING AFFECTING ANOTHER **SAFETY CO-ORDINATOR'S SYSTEM**

OC8A.6.1 The carrying out of the test may affect **Safety Precautions** on **RISSPs** or work being carried out which does not require a **RISSP**. Testing can, for example, include the application of an independent test voltage. Accordingly, where the **Requesting Safety Co-ordinator** wishes to authorise the carrying out of such a test to which the procedures in OC8A.6 apply he may not do so and the test will not take place unless and until the steps in (a)-(c) below have been followed and confirmation of completion has been recorded in the respective **Safety Logs**:

(a) confirmation must be obtained from the **Implementing Safety Co-ordinator** that:

(i) no person is working on, or testing, or has been authorised to work on, or test, any part of its **System** or another **System(s)** (other than the **System** of the **Requesting Safety Co-ordinator**) within the points of **Isolation** identified on the **RISSP** form relating to the test which is proposed to be undertaken, and

(ii) no person will be so authorised until the proposed test has been completed (or cancelled) and the **Requesting Safety Co-ordinator** has notified the **Implementing Safety Co-ordinator** of its completion (or cancellation);

(b) any other current **RISSPs** which relate to the parts of the **System** in which the testing is to take place must have been cancelled in accordance with procedures set out in OC8A.5.5;

(c) the **Implementing Safety Co-ordinator** must agree with the **Requesting Safety Co-ordinator** to permit the testing on that part of the **System** between the points of **Isolation** identified in the **RISSP** associated with the test and the points of **Isolation** on the **Requesting Safety Co-ordinator's System**.

OC8A.6.2 (a) The **Requesting Safety Co-ordinator** will inform the **Implementing Safety Co-ordinator** as soon as the test has been completed or cancelled and the confirmation shall be recorded in the respective **Safety Logs**.

(b) When the test gives rise to the removal of **Earthing** which it is not intended to re-apply, the relevant **RISSP** associated with the test shall be cancelled at the completion or cancellation of the test in accordance with the procedure set out

in either OC8A.5.5 or OC8A.5.6. Where the **Earthing** is re-applied following the completion or cancellation of the test, there is no requirement to cancel the relevant **RISSP** associated with the test pursuant to this OC8A.6.2.

OC8A.7 EMERGENCY SITUATIONS

OC8A.7.1 There may be circumstances where **Safety Precautions** need to be established in relation to an unintended electrical connection or situations where there is an unintended risk of electrical connection between the **GB Transmission System** and a **User's System**, for example resulting from an incident where one line becomes attached or unacceptably close to another.

OC8A.7.2 In those circumstances, if both **NGC** and the respective **User** agree, the relevant provisions of OC8A.5 will apply as if the electrical connections or potential connections were, solely for the purposes of this **OC8A**, a **Connection Point**.

OC8A.7.3 (a) The relevant **Safety Co-ordinator** shall be that for the electrically closest existing **Connection Point** to that **User's System** or such other local **Connection Point** as may be agreed between **NGC** and the **User**, with discussions taking place between the relevant local **Safety Co-ordinators**. The **Connection Point** to be used shall be known in this OC8A.7.3 as the "relevant **Connection Point**".

(b) The **Local Safety Instructions** shall be those which apply to the relevant **Connection Point**.

(c) The prefix for the **RISSP** will be that which applies for the relevant **Connection Point.**

OC8A.8 **SAFETY PRECAUTIONS RELATING TO WORKING ON EQUIPMENT NEAR TO THE HV SYSTEM**

OC8A.8 applies to the situation where work is to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment of the **User** or **NGC** as the case may be, where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**. It does not apply to other situations to which **OC8A** applies. In this part of **OC8A**, a **Permit for Work for proximity work** is to be used, rather then the usual **RISSP** procedure, given the nature and effect of the work, all as further provided in the OC8A.8.

OC8A.8.1 Agreement of **Safety Precautions**

OC8A.8.1.1 The **Requesting Safety Co-ordinator** who requires **Safety Precautions** on another **System(s)** when work is to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment of the **User** or **NGC**, as the case may be, where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System** will contact the relevant **Implementing Safety Co-ordinator(s)** to agree the Location of the **Safety Precautions** to be established, having as part of this process informed the **Implementing Safety Co-ordinator** of the equipment and the work to be undertaken. The respective **Safety Co-ordinators** will ensure that they discuss the request with their authorised site representative and that the

respective authorised site representatives discuss the request at the **Connection Site**. This agreement will be recorded in the respective **Safety Logs**.

OC8A.8.1.2 It is the responsibility of the **Implementing Safety Co-ordinator**, working with his authorised site representative as appropriate, to ensure that adequate **Safety Precautions** are established and maintained, on his and/or another **System** connected to his **System**, to enable **Safety From The System** to be achieved for work to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment and in relation to work which is to be identified in the relevant part of the **Permit for Work for proximity work** where the work or equipment is near to **HV Apparatus** of the **Implementing Safety Co-ordinator's System** specified by the **Requesting Safety Co-ordinator**. Reference to another **System** in this OC8A.8.1.2 shall not include the **Requesting Safety Co-ordinator's System**.

OC8A.8.1.3 In the event of disagreement

In any case where the **Requesting Safety Co-ordinator** and the **Implementing Safety Co-ordinator** are unable to agree the **Location** of the **Isolation** and (if requested) **Earthing**, both shall be at the closest available points on the infeeds to the **HV Apparatus** near to which the work is to be carried out as indicated on the **Operation Diagram**.

OC8A.8.2 Implementation of **Isolation and Earthing**

OC8A.8.2.1 Following the agreement of the **Safety Precautions** in accordance with OC8A.8.1 the **Implementing Safety Co-ordinator** shall then establish the agreed **Isolation** and (if required) **Earthing**.

OC8A.8.2.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Isolation** and (if required) **Earthing** has been established.

OC8A.8.2.3 The **Implementing Safety Co-ordinator** shall ensure that the established **Safety Precautions** are maintained until requested to be removed by the relevant **Requesting Safety Co-ordinator**.

OC8A.8.3 **Permit for Work for proximity work Issue Procedure**

OC8A.8.3.1 Where **Safety Precautions** on another **System(s)** are being provided to enable work to be carried out at a **User's Site** or **Transmission Site** (as the case may be) on equipment where the work or equipment is in proximity to **HV Apparatus** of the **Implementing Safety Co-ordinator**, before any work commences they must be recorded by a **Permit for Work for proximity work** being issued. The **Permit for Work for proximity work** shall identify the **Implementing Safety Co-ordinator's HV Apparatus** in proximity to the required work

OC8A.8.3.2 Once the **Safety Precautions** have been established (in accordance with OC8A.8.2), the **Implementing Safety Co-ordinator** shall agree to the issue of the **Permit for Work for proximity work** with the appropriately authorised site representative of the **Requesting Safety Co-ordinator's Site**. The **Implementing Safety Co-ordinator** will inform the **Requesting Safety Co-ordinator** of the **Permit for Work for proximity work** identifying number.

OC8A.8.3.3 The appropriately authorised site representative of the **Implementing Safety Co-ordinator** shall then issue the **Permit for Work for proximity work** to the appropriately authorised site representative of the **Requesting Safety Co-ordinator**. The **Permit for Work for proximity work** will in the section dealing with the work to be carried out, be completed to identify that the work is near the **Implementing Safety Co-ordinator's HV Apparatus.** No further details of the **Requesting Safety Co-ordinator's** work will be recorded, as that is a matter for the **Requesting Safety Co-ordinator** in relation to his work.

OC8A.8.3.4 The **Requesting Safety Co-ordinator** is then free to authorise work in accordance with the requirements of the relevant internal safety procedures which apply to the **Requesting Safety Co-ordinator's Site**. This is likely to involve the issue of safety documents or other relevant internal authorisations.

OC8A.8.4 **Permit for Work for proximity work Cancellation Procedure**

OC8A.8.4.1 When the **Requesting Safety Co-ordinator** decides that **Safety Precautions** are no longer required, he will contact the relevant **Implementing Safety Co-ordinator** to effect cancellation of the associated **Permit for Work for proximity work**.

OC8A.8.4.2 The **Requesting Safety Co-ordinator** will inform the relevant **Implementing Safety Co-ordinator** of the **Permit for Work for proximity work** identifying number, and agree that the **Permit for Work for proximity work** can be cancelled. The cancellation is then effected by the appropriately authorised site representative of the **Requesting Safety Co-ordinator** returning the **Permit for Work for proximity work** to the appropriately authorised site representative of the **Implementing Safety Co-ordinator**.

OC8A.8.4.3 The **Implementing Safety Co-ordinator** is then free to arrange the removal of the **Safety Precautions**, the procedure to achieve that being entirely an internal matter for the party the **Implementing Safety Co-ordinator** is representing.

OC8A.9 LOSS OF INTEGRITY OF **SAFETY PRECAUTIONS**

OC8A.9.1 In any instance when any **Safety Precautions** may be ineffective for any reason the relevant **Safety Co-ordinator** shall inform the other **Safety Co-ordinator(s)** without delay of that being the case and, if requested, of the reasons why.

OC8A.10 SAFETY LOG

OC8A.10.1 **NGC** and **Users** shall maintain **Safety Logs** which shall be a chronological record of all messages relating to safety co-ordination under **OC8A** sent and received by the **Safety Co-ordinator(s)**. The **Safety Logs** must be retained for a period of not less than one year.

OPERATING CODE NO.8 Appendix 2 (OC8B)

SAFETY CO-ORDINATION IN SCOTLAND

OC8B.1 INTRODUCTION

OC8B.1.1 **OC8B** specifies the standard procedures to be used by **NGC**, the **Relevant Transmission Licensees** and **Users** for the co-ordination, establishment and maintenance of necessary **Safety Precautions** when work is to be carried out on or near the **GB Transmission System** in Scotland or the **System** of a **User** in Scotland and when there is a need for **Safety Precautions** on **HV Apparatus** on the other's **System** for this work to be carried out safely. **OC8B** applies to **Relevant Transmission Licensees** and **Users** only in Scotland. Where work is to be carried out on or near equipment in England and Wales, but such work requires **Safety Precautions** to be established in Scotland, **OC8B** should be followed by the **Relevant Transmission Licensee** and **Users** to establish the required **Safety Precautions** in Scotland.

OC8A specifies the procedures to be used by **NGC** and **Users** in England and Wales.

NGC shall procure that **Relevant Transmission Licensees** shall comply with **OC8B** where and to the extent that such section applies to them.

In this **OC8B** the term "work" includes testing, other than **System Tests** which are covered by **OC12**.

OC8B.1.2 **OC8B** also covers the co-ordination, establishment and maintenance of necessary safety precautions on the **Implementing Safety Co-ordinator's System** when work is to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment of the **User** or the **Relevant Transmission Licensee** as the case may be where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**.

OC8B.1.3 **OC8B** does not apply to the situation where **Safety Precautions** need to be agreed solely between **Users**. **OC8B** does not apply to the situation where **Safety Precautions** need to be agreed solely between **Transmission Licensees**.

OC8B.1.4 **OC8B** does not seek to impose a particular set of **Safety Rules** on **Relevant Transmission Licensees** and **Users**. The **Safety Rules** to be adopted and used by the **Relevant Transmission Licensee** and each **User** shall be those chosen by each.

OC8B.1.5 **Site Responsibility Schedules** document the control responsibility for each item of **Plant** and **Apparatus** for each site.

OC8B.1.6 The **Relevant Transmission Licensee** may agree detailed site-specific operational procedures with **Users** for the co-ordination, establishment and maintenance of **Safety Precautions** instead of the **Record of Inter-System Safety Precautions ("RISSP")** procedure detailed in this **OC8B.** Such operational procedures shall

satisfy the requirements of paragraphs OC8B.1.7, OC8B.2.1, OC8B.4.1, OC8B.4.2, OC8B.9, OC8B.10

OC8B.1.7 Defined terms

OC8B.1.7.1 **Users** should bear in mind that in **OC8** only, in order that **OC8** reads more easily with the terminology used in certain **Safety Rules**, the term "**HV Apparatus**" is defined more restrictively and is used accordingly in **OC8B. Users** should, therefore, exercise caution in relation to this term when reading and using **OC8B.**

OC8B.1.7.2 In **OC8** only the following terms shall have the following meanings:

(1) "**HV Apparatus**" means **High Voltage** electrical circuits forming part of a **System**, on which **Safety From The System** may be required or on which **Safety Precautions** may be applied to allow work to be carried out on a **System**.

(2) "**Isolation**" means the disconnection of **Apparatus** from the remainder of the **System** in which that **Apparatus** is situated by either of the following:

(a) an **Isolating Device** maintained in an isolating position. The isolating position must either be:

(i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be retained in safe custody; or

(ii) maintained and/or secured by such other method which must be in accordance with the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be; or

(b) an adequate physical separation which must be in accordance with, and maintained by, the method set out in the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be, and, if it is a part of that method, a **Caution Notice** must be placed at the point of separation.

(3) "**Earthing**" means a way of providing a connection between conductors and earth by an **Earthing Device** which is either:

(i) immobilised and **Locked** in the **Earthing** position. Where the **Earthing Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be retained in safe custody; or

(iii) maintained and/or secured in position by such other method which must be in accordance with the **Safety Rules** of the **Relevant Transmission Licensee** or that **User** as the case may be.

OC8B.1.7.3 For the purpose of the co-ordination of safety relating to **HV Apparatus** the term **"Safety Precautions"** means **Isolation** and/or **Earthing.**

OC8B.2 OBJECTIVE

OC8B.2.1 The objective of **OC8B** is to achieve:-

(i) **Safety From The System** when work on or near a **System** necessitates the provision of **Safety Precautions** on another **System** on **HV Apparatus** up to a **Connection Point**; and

(ii) **Safety From The System** when work is to be carried out at a **User's Site** or a **Transmission Site** (as the case may be) on equipment of the **User** or the **Relevant Transmission Licensee** (as the case may be) where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**.

OC8B.2.2 A flow chart, set out in **OC8B** Appendix C, illustrates the process utilised in **OC8B** to achieve the objective set out in OC8B.2.1. In the case of a conflict between the flow chart and the provisions of the written text of **OC8B**, the written text will prevail.

OC8B.3 SCOPE

OC8B.3.1 **OC8B** applies to **NGC**, **Relevant Transmission Licensees** and to **Users**, which in OC8 means:-

(a) **Generators**;

(b) **Network Operators**; and

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

The procedures for the establishment of safety co-ordination by **NGC** in relation to **External Interconnections** are set out in **Interconnection Agreements** with relevant persons for the **External Interconnections**.

OC8B.4 PROCEDURE

OC8B.4.1 Approval of **Safety Rules**

OC8B.4.1.1 (a) In accordance with the timing requirements of its **Bilateral Agreement**, each **User** will supply to the **Relevant Transmission Licensee** a copy of its **Safety Rules** relating to its side of the **Connection Point** at each **Connection Site**.

(b) In accordance with the timing requirements of each **Bilateral Agreement** the **Relevant Transmission Licensee** will supply to each **User** a copy of its **Safety Rules** relating to the **Transmission** side of the **Connection Point** at each **Connection Site**.

(c) Prior to connection the **Relevant Transmission Licensee** and the **User** must have approved each other's relevant **Safety Rules** in relation to **Isolation** and **Earthing**.

OC8B.4.1.2 Either party may require that the **Isolation** and/or **Earthing** provisions in the other party's **Safety Rules** affecting the **Connection Site** should be made more stringent in order that approval of the other party's **Safety Rules** can be given. Provided these requirements are not unreasonable, the other party will make such changes as soon as reasonably practicable. These changes may need to cover the application of **Isolation** and/or **Earthing** at a place remote from the **Connection Site**, depending upon the **System** layout. Approval may not be withheld because the party required to approve reasonably believes the provisions relating to **Isolation** and/or **Earthing** are too stringent.

OC8B.4.1.3 If, following approval, a party wishes to change the provisions in its **Safety Rules** relating to **Isolation** and/or **Earthing**, it must inform the other party. If the change is to make the provisions more stringent, then the other party merely has to note the changes. If the change is to make the provisions less stringent, then the other party needs to approve the new provisions and the procedures referred to in OC8B.4.1.2 apply.

OC8B.4.2 **Safety Co-ordinators**

OC8B.4.2.1 For each **Connection Point,** the **Relevant Transmission Licensee** and each **User** will have nominated to be available, to a timescale agreed in the **Bilateral Agreement**, a person or persons ("**Safety Co-ordinator(s)**") to be responsible for the co-ordination of **Safety Precautions** when work is to be carried out on a **System** which necessitates the provision of **Safety Precautions** on **HV Apparatus** pursuant to **OC8B.** A **Safety Co-ordinator** may be responsible for the co-ordination of safety on **HV Apparatus** at more than one **Connection Point**.

OC8B.4.2.2 Each **Safety Co-ordinator** shall be authorised by the **Relevant Transmission Licensee** or a **User,** as the case may be, as competent to carry out the functions set out in **OC8B** to achieve **Safety From The System**. Confirmation from the **Relevant Transmission Licensee** or a **User**, as the case may be, that its **Safety Co-ordinator(s)** as a group are so authorised is dealt with, for **Users**, in CC.5.2 and for **Relevant Transmission Licensees** in the **STC**. Only persons with such authorisation will carry out the provisions of **OC8B.** Each **User** shall, prior to being connected to the **GB Transmission System**, give notice in writing to the **Relevant Transmission Licensee** of its **Safety Co-ordinator(s)** and will update the written notice yearly and whenever there is a change to the identity of its **Safety Co-ordinators** or to the **Connection Points.** The **Relevant Transmission Licensee** will, at the time of a **User** being connected to the **GB Transmission System** give notice in writing to that **User** of the identity of its **Safety Co-ordinator(s)** and will update the written notice whenever there is a change to the **Connection Points** or **Safety Co-ordinators.**

OC8B.4.2.3 Contact between **Safety Co-ordinators** will be made via normal operational channels, and accordingly separate telephone numbers for **Safety Co-ordinators** need not be provided.

OC8B.4.2.4 If work is to be carried out on a **System**, or on equipment of the **Relevant Transmission Licensee** or a **User** near to a **System**, as provided in this **OC8B,** which necessitates the provision of **Safety Precautions** on **HV Apparatus** in accordance with the provisions of **OC8B**, the **Requesting Safety Co-ordinator** who requires the **Safety Precautions** to be provided shall contact the relevant **Implementing Safety Co-ordinator** to co-ordinate the establishment of the **Safety Precautions**.

OC8B.4.3 **RISSP**

OC8B.4.3.1 **OC8B** sets out the procedures for utilising the **RISSP**, which will be used except where dealing with equipment in proximity to the other's **System** as provided in **OC8B.8**. Sections **OC8B.4** to **OC8B.7** inclusive should be read accordingly.

OC8B.4.3.2 The **Revant Transmission Licensee** will use the format of the **RISSP** forms set out in Appendix A and Appendix B to **OC8B**, or any other format which may be agreed between the **Relevant Transmission Licensee** and each **User**. That set out in **OC8B** Appendix A and designated as "RISSP-R", shall be used when the **Relevant Transmission Licensee** is the **Requesting Safety Co-ordinator**, and that in **OC8B** Appendix B and designated as "RISSP-I", shall be used when the **Relevant Tranmission Licensee** is the **Implementing Safety Co-ordinator**. Proformas of RISSP-R and RISSP-I will be provided for use by **Relevant Transmission Licensees** staff.

OC8B.4.3.3 **Users** may either adopt the format referred to in OC8B.4.3.2 or any other format which may be agreed between the **Relevant Transmission Licensee** and the **User** from time to time.

OC8B.4.3.4 All references to RISSP-R and RISSP-I shall be taken as referring to the corresponding parts of the alternative forms or other tangible written or electronic records used by each **User** or **Relevant Transmission Licensee**.

OC8B.4.3.5 RISSP-R will have an identifying number written or printed on it, comprising a prefix which identifies the location at which it is issued, and a unique (for each **User** or **Relevant Transmission Licensee**, as the case may be) serial number consisting of four digits and the suffix "R".

OC8B.4.3.6 (a) In accordance with the timing requirements set out in the **Bilateral Agreement** each **User** shall apply in writing to **Relevant Transmission Licensee** for **Relevant Transmission Licensee's** approval of its proposed prefix.

(b) **Relevant Transmission Licensee** shall consider the proposed prefix to see if it is the same as (or confusingly similar to) a prefix used by **Relevant Transmission Licensee** or another **User** and shall, as soon as possible (and in any event within ten days), respond in writing to the **User** with its approval or disapproval.

(c) If **Relevant Transmission Licensee** disapproves, it shall explain in its response why it has disapproved and will suggest an alternative prefix.

(d) If **Relevant Transmission Licensee** has disapproved, then the **User** shall either notify **Relevant Transmission Licensee** in writing of its acceptance of the suggested alternative prefix or it shall apply in writing to **Relevant**

Transmission Licensee with revised proposals and the above procedure shall apply to that application.

OC8B.5 **SAFETY PRECAUTIONS** ON **HV APPARATUS**

OC8B.5.1 Agreement of **Safety Precautions**

OC8B.5.1.1 The **Requesting Safety Co-ordinator** who requires **Safety Precautions** on another **System(s)** will contact the relevant **Implementing Safety Co-ordinator(s)** to agree the **Location** of the **Safety Precautions** to be established. This agreement will be recorded in the respective **Safety Logs**.

OC8B.5.1.2 It is the responsibility of the **Implementing Safety Co-ordinator** to ensure that adequate **Safety Precautions** are established and maintained, on his and/or another **System** connected to his **System**, to enable **Safety From The System** to be achieved on the **HV Apparatus**, specified by the **Requesting Safety Co-ordinator** which is to be identified in Part 1.1 of the **RISSP**. Reference to another **System** in this OC8B.5.1.2 shall not include the **Requesting Safety Co-ordinator's System** which is dealt with in OC8B.5.1.3.

OC8B.5.1.3 When the **Implementing Safety Co-ordinator** is of the reasonable opinion that it is necessary for **Safety Precautions** on the **System** of the **Requesting Safety Co-ordinator**, other than on the **HV Apparatus** specified by the **Requesting Safety Co-ordinator,** which is to be identified in Part 1.1 of the **RISSP**, he shall contact the **Requesting Safety Co-ordinator** and the details shall be recorded in part 1.1 of the **RISSP** forms. In these circumstances it is the responsibility of the **Requesting Safety Co-ordinator** to establish and maintain such **Safety Precautions**.

OC8B.5.1.4 The location of the **Safety Precautions** should be indicated on each **User's** operational diagram and labelled as per the local instructions of each **User**.

OC8B.5.1.5 In the event of disagreement

In any case where the **Requesting Safety Co-ordinator** and the **Implementing Safety Co-ordinator** are unable to agree the **Location** of the **Isolation** and (if requested) **Earthing**, both shall be at the closest available points on the infeeds to the **HV Apparatus** on which **Safety From The System** is to be achieved as indicated on the **Operation Diagram**.

OC8B.5.2 Implementation of **Isolation**

OC8B.5.2.1 Following the agreement of the **Safety Precautions** in accordance with OC8B.5.1 the **Implementing Safety Co-ordinator** shall then establish the agreed **Isolation**.

OC8B.5.2.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Isolation** has been established, and identify the **Requesting Safety Co-ordinator's HV Apparatus** up to the **Connection Point**, for which the **Isolation** has been provided. The confirmation shall specify:

(a) for each **Location**, the identity (by means of **HV Apparatus** name, nomenclature and numbering or position, as applicable) of each point of **Isolation**;

(b) whether **Isolation** has been achieved by an **Isolating Device** in the isolating position or by an adequate physical separation;

(c) where an **Isolating Device** has been used whether the isolating position is either :

(i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** has been **Locked** with a **Safety Key** that the **Safety Key** has been secured in a **Key Safe** and the **Key Safe Key** will be retained in safe custody; or

(ii) maintained and/or secured by such other method which must be in accordance with the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be; and

(d) where an adequate physical separation has been used that it will be in accordance with, and maintained by, the method set out in the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be, and, if it is a part of that method, that a **Caution Notice** has been placed at the point of separation.

The confirmation of **Isolation** shall be recorded in the respective **Safety Logs**.

OC8B.5.2.3 Following the confirmation of **Isolation** being established by the **Implementing Safety Co-ordinator** and the necessary establishment of relevant **Isolation** on the **Requesting Safety Co-ordinators System**, the **Requesting Safety Co-ordinator** may then request the implementation of **Earthing** by the **Implementing Safety Co-ordinator**, if agreed in section OC8B.5.1.

OC8B.5.3 Implementation of **Earthing**

OC8B.5.3.1 The **Implementing Safety Co-ordinator** shall then establish the agreed **Earthing**.

OC8B.5.3.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Earthing** has been established, and identify the **Requesting Safety Co-ordinator's HV Apparatus** up to the **Connection Point**, for which the **Earthing** has been provided. The confirmation shall specify:

(a) for each **Location**, the identity (by means of **HV Apparatus** name, nomenclature and numbering or position, as is applicable) of each point of **Earthing**; and

(b) in respect of the **Earthing Device** used, whether it is:

(i) immobilised and **Locked** in the **Earthing** position. Where the **Earthing Device** has been **Locked** with a **Safety Key**, that the **Safety Key** has been secured in a **Key Safe** and the **Key Safe Key** will be retained in safe custody; or

(ii) maintained and/or secured in position by such other method which is in accordance with the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be.

The confirmation of **Earthing** shall be recorded in the respective **Safety Logs**.

OC8B.5.3.3. The **Implementing Safety Co-ordinator** shall ensure that the established **Safety Precautions** are maintained until requested to be removed by the relevant **Requesting Safety Co-ordinator**.

OC8B.5.4 **RISSP** Issue Procedure

OC8B.5.4.1 Where **Safety Precautions** on another **System(s)** are being provided to enable work on the **Requesting Safety Co-ordinator's System**, before any work commences they must be recorded by a **RISSP** being issued. The **RISSP** is applicable to **HV Apparatus** up to the **Connection Point** identified in section 1.1 of the RISSP-R and RISSP-I forms.

OC8B.5.4.2 Where **Safety Precautions** are being provided to enable work to be carried out on both sides of the **Connection Point** a **RISSP** will need to be issued for each side of the **Connection Point** with **Relevant Transmission Licensee** and the respective **User** each enacting the role of **Requesting Safety Co-ordinator**. This will result in a RISSP-R and a RISSP-I form being completed by each of the **Relevant Transmission Licensee** and the **User**, with each **Safety Co-ordinator** issuing one **RISSP** number.

OC8B.5.4.3 Once the **Safety Precautions** have been established (in accordance with OC8B.5.2 and OC8B.5.3), the **Implementing Safety Co-ordinator** shall complete parts 1.1 and 1.2 of a RISSP-I form recording the details specified in OC8B.5.1.3, OC8B.5.2.2 and OC8B.5.3.2. Where **Earthing** has not been requested, Part 1.2(b) will be completed with the words "not applicable" or "N/A". He shall then contact the **Requesting Safety Co-ordinator** to pass on these details.

OC8B.5.4.4 The **Requesting Safety Co-ordinator** shall complete Parts 1.1 and 1.2 of the RISSP-R, making a precise copy of the details received. On completion, the **Requesting Safety Co-ordinator** shall read the entries made back to the sender and check that an accurate copy has been made.

OC8B.5.4.5 The **Requesting Safety Co-ordinator** shall then issue the number of the **RISSP**, taken from the RISSP-R, to the **Implementing Safety Co-ordinator** who will ensure that the number, including the prefix and suffix (where applicable), is accurately recorded in the designated space on the RISSP-I form.

OC8B.5.4.6 The **Requesting Safety Co-ordinator** and the **Implementing Safety Co-ordinator** shall complete and sign Part 1.3 of the RISSP-R and RISSP-I respectively and then enter the time and date. When signed no alteration to the **RISSP** is permitted; the **RISSP** may only be cancelled.

OC8B.5.4.7 The **Requesting Safety Co-ordinator** is then free to authorise work, but not testing, in accordance with the requirements of the relevant internal safety procedures which apply to the **Requesting Safety Co-ordinator's System**. This is likely to involve the issue of safety documents or other relevant internal authorisations. Where testing is to be carried out, the procedure set out below in OC8B.6 shall be implemented.

OPERATING CODE NO.9

CONTINGENCY PLANNING

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(This contents page does not form part of the Grid Code)

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OPERATING CODE NO.9

CONTINGENCY PLANNING

OC9.1 INTRODUCTION

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

OC9.1.1 **Black Starts**

The implementation of recovery procedures following a **Total Shutdown** or **Partial Shutdown**.

OC9.1.2 **Re-Synchronisation** of Islands

The **Re-Synchronisation** of parts of the **Total System** which have become **Out of Synchronism** with each other but where there is no **Total Shutdown** or **Partial Shutdown**.

OC9.1.3 **Joint System Incident** Procedure

The establishment of a communication route and arrangements between senior management representatives of **NGC** 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.

OC9.1.4 It should be noted that under section 96 of the **Act** the **Secretary of State** may give directions to **NGC** 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 **NGC** 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 of the **Total System** and associated **Demand** in the shortest possible time, taking into account **Power Station** capabilities, including **Embedded Generating Units**, **External Interconnections** and the operational constraints of the **Total System**.

OC9.2.2 To achieve the **Re-Synchronisation** of parts of the **Total System** which have become **Out of Synchronism** with each other.

OC9.2.3 To ensure that communication routes and arrangements are available to enable senior management representatives of **NGC** and **Users**, who are authorised to make binding decisions on behalf of **NGC** 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 To describe the role that in Scotland a **Relevant Transmission Licensee** may have in the restoration processes as detailed in the relevant **OC9 De-Synchronised Island Procedures** and **Local Joint Restoration Plans**.

OC9.3 SCOPE

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

(a) **Generators;**

(b) **Network Operators**; and

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

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

OC9.3.3 In Scotland, OC9.4 and OC9.5 also apply to **Relevant Transmission Licensees**.

OC9.4 **BLACK START**

OC9.4.1 **Total Shutdown**

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 **NGC's** directions relating to a **Black Start**.

OC9.4.2 **Partial Shutdown**

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 **NGC's** directions relating to a **Black Start**.

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**, it may be necessary for **NGC** to 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**.

OC9.4.5 **Black Start Stations**

OC9.4.5.1 Certain **Power Stations** ("**Black Start Stations**") are registered, pursuant to the **Bilateral Agreement** with a **User**, as having an ability for at least one of its **Gensets** to **Start-Up** from **Shutdown** and to energise a part of the **Total System,** or be **Synchronised** to the **System**, upon instruction from **NGC** within two hours, without an external electrical power supply ("**Black Start Capability**").

OC9.4.5.2 For each **Black Start Station**, a **Local Joint Restoration Plan** will be produced jointly by **NGC,** the relevant **Generator** and **Network Operator** in accordance with the provisions of OC9.4.7.11. 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**) will energise part of the **Total System** and meet complementary local **Demand** so as to form a **Power Island**.

OC9.4.5.3 In Scotland, a **Local Joint Restoration Plan** may cover more than one **Black Start Station** and may be produced with and include obligations on **Relevant Transmission Licensees**, **Generators** responsible for **Gensets** not at a **Black Start Station** and other **Users**.

OC9.4.6 **Black Start** Situation

In the event of a **Total Shutdown** or **Partial Shutdown**, **NGC** will, as soon as reasonably practical, inform **Users** (or, in the case of a **Partial Shutdown**, **Users** which in **NGC's** opinion need to be informed) that a **Total Shutdown**, or, as the case may be, a **Partial Shutdown**, exists and that **NGC** intends to implement a **Black Start**.

In Scotland, in exceptional circumstances, as specified in the **Local Joint Restoration Plan**, the **Relevant Transmission Licensee,** may invoke such **Local Joint Restoration Plan** for its own **Transmission System** and operate within its provisions.

OC9.4.7 **Black Start**

OC9.4.7.1 The procedure necessary for a recovery from a **Total Shutdown** or **Partial Shutdown** is known as a "**Black Start**". 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 **Genset** 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 of **Genset(s)** at an isolated **Power Station**, together with complementary local **Demand**, termed "**Power Islands**", step by

step integration of these **Power Islands** into larger sub-systems and eventually re-establishment of the complete **Total System**.

NGC Instructions

OC9.4.7.3 The procedures for a **Black Start** will, therefore, be those specified by **NGC** at the time. These will normally recognise any applicable **Local Joint Restoration Plan**. **Users** shall abide by **NGC's** instructions during a **Black Start** situation, even if these conflict with the general overall strategy outlined in OC9.4.7.2 or any applicable **Local Joint Restoration Plan**. **NGC's** instructions may (although this list should not be regarded as exhaustive) be to a **Black Start Station** relating to the commencement of generation, to a **Network Operator** or **Non-Embedded Customer** relating to the restoration of **Demand**, and to a **Power Station** relating to preparation for commencement of generation when an external power supply is made available to it, and in each case may include the requirement to undertake switching.

In Scotland the **Relevant Transmission Licensee** will act on **NGC's** behalf in accordance with its duties under the relevant **Local Joint Restoration Plan**. **Users** shall abide by the **Relevant Transmission Licensee's** instructions given in accordance with the **Local Joint Restoration Plan** during a **Black Start** situation.

OC9.4.7.4 (a) During a **Black Start** situation, instructions in relation to **Black Start Stations** will be in the format required for **Emergency Instructions** in **BC2**, and 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 **BCs**). For the purposes of these instructions the **Black Start** will be an emergency circumstance under BC2.9.

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

For **Power Stations** which are not part of a **Local Joint Restoration Plan, Bid-Offer Acceptances** will recognise each **BM Unit's Export and Import Limits** and **Dynamic Parameters** as submitted pursuant to **BC1** or **BC2** (or as amended from time to time in accordance with the **BCs**).

(b) If during the **Demand** restoration process any **Genset** cannot, because of the **Demand** being experienced, keep within its safe operating parameters, the **Generator** shall, unless a **Local Joint Restoration Plan** is in operation, inform **NGC. NGC** will, where possible, either instruct **Demand** to be altered or will re-configure the **GB Transmission System** or will instruct a **User** to re-configure its **System** in order to alleviate the problem being experienced by the **Generator**. If a **Local Joint Restoration Plan** is in operation, then the arrangements set out therein shall apply. However, **NGC** accepts that any decision to keep a **Genset** operating, if outside its safe operating parameters, is one for the **Generator** concerned alone and accepts that the **Generator** may change generation on that **Genset** 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 **Generator** shall inform **NGC** as soon as reasonably practical

(unless a **Local Joint Restoration Plan** is in operation in which case the arrangements set out therein shall apply).

Embedded Power Stations

OC9.4.7.5 Without prejudice to the provisions of OC9.4.7.8, **Network Operators** with **Embedded Power Stations** will comply with any directions of **NGC** to restore **Demand** to be met by the **Embedded Power Stations**.

Local Joint Restoration Plan operation

OC9.4.7.6 (a) The following provisions apply in relation to a **Local Joint Restoration Plan**. As set out in OC9.4.7.3, **NGC** may issue 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**. When issuing such instructions, **NGC** shall state whether or not it wishes the remainder of the **Local Joint Restoration Plan** to apply. If, not withstanding that **NGC** has stated that it wishes the remainder of the **Local Joint Restoration Plan** to apply, the **Generator** or the relevant **Network Operator** consider that **NGC'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 **NGC** and the other parties to the **Local Joint Restoration Plan** to this effect and **NGC** 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 **NGC**, as part of a **Black Start**, has given an instruction to a **Black Start Station** to initiate **Start-Up**, the relevant **Genset(s)** at the **Black Start Station** will **Start-Up** in accordance with the **Local Joint Restoration Plan**.

(c) **NGC** 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) **NGC** will ensure that switching carried out on the **GB Transmission System** and other actions are as set out in the **Local Joint Restoration Plan**.

(e) Following notification from the **Generator** that the **Black Start Station** is ready to accept load, **NGC** will instruct the **Black Start Station** to energise part of the **Total System**. The **Black Start Station** 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 the connection of **Demand** so as to establish a **Power Island**. During this period, the **Generator** will be required to regulate the output of the relevant **Genset(s)** at its **Black Start Station** 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** 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) Operation in accordance with the **Local Joint Restoration Plan** will be terminated by **NGC** (by notifying the relevant **Users**) prior to connecting the **Power Island** to other **Power Islands** (other than, in Scotland, as allowed for in the **Local Joint Restoration Plan**), or to the **User System** of another **Network Operator**, or to the synchronising of **Gensets** at other **Power Stations** (other than, in Scotland, those forming part of the **Local Joint Restoration Plan**). Operation in accordance with the **Local Joint Restoration Plan** will also terminate in the circumstances provided for in OC9.4.7.6(a) if an agreement is not reached or if **NGC** 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 **NGC**.

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

Interconnection of **Power Islands**

OC9.4.7.7 **NGC** will instruct the relevant **Users** so as to interconnect **Power Islands** to achieve larger sub-systems, and subsequently the interconnection of these sub-systems to form an integrated system. 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.

OC9.4.7.8 As part of the **Black Start** strategy each **Network Operator** with either an **Embedded Black Start Station** which has established a **Power Island** within its **User System** or with any **Embedded Power Stations** within its **User System** which have become islanded, may in liaison with **NGC** 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 **NGC** of their actions and will not **Re-Synchronise** to the **GB Transmission System** or any **User's System** which is already **Synchronised** to the **GB Transmission System** without **NGC's** agreement.

Conclusion of **Black Start**

OC9.4.7.9 The conclusion of the **Black Start**, and the time of the return to normal operation of the **Total System,** will be determined by **NGC** who shall inform **Users** (or where there has been a **Partial Shutdown**, **Users** which in **NGC's** opinion need to be informed) that the **Black Start** situation no longer exists and that normal operation of the **Total System** has begun.

Externally Interconnected System Operators

OC9.4.7.10 During a **Black Start**, **NGC** 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.

OC9.4.7.11 **Local Joint Restoration Plan** establishment

(a) In England and Wales, in relation to each **Black Start Station**, **NGC**, the **Network Operator** and the relevant **Generator** will discuss and agree a **Local Joint Restoration Plan**. Where at the date of the first inclusion of this OC9.4.7.11 into the **Grid Code** a local plan covering the procedures to be covered in a **Local Joint Restoration Plan** is in existence and agreed, **NGC** will discuss this with the **Network Operator** and the relevant **Generator** 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 OC9.4.7.11(b) shall apply. If it is not agreed to be so consistent, then the provisions of OC9.4.7.11(b) shall apply as if there is no **Local Joint Restoration Plan** in place.

In Scotland where a requirement for a **Local Joint Restoration Plan** is identified, **NGC,** the **Relevant Transmission Licensee**, the **Network Operator** and **Black Start Station(s)** will discuss and agree a **Local Joint Restoration Plan**. In addition other **Users**, including other **Generators**, may be reasonably required by **NGC** 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) **NGC,** the **Network Operator** and the relevant **Generator** 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 **NGC**. **NGC** 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**.

(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 **NGC** and each **User** should a **Black Start** situation arise.

(iv) Each **Local Joint Restoration Plan** shall be prepared by **NGC** 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 **NGC** to 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 **NGC** and on behalf of each relevant **User** by way of written confirmation of its accuracy.

(viii) Once agreed under this OC9.4.7.11, 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 **NGC** 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 **NGC** to each **User** which is a party to it accompanied by a note indicating the date of implementation.

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

(xi) If **NGC**, 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 **NGC**) initiate a discussion between **NGC** and the relevant **Users** to seek to agree the relevant change. If a **User** becomes so aware, it shall contact **NGC** who will then initiate such discussions. The principles applying to establishing a new **Local Joint Restoration Plan** under this OC9.4.7.11 shall apply to such discussions and to any consequent changes.

(c) In Scotland, where the need for a **Local Joint Restoration Plan** arises, the following provisions shall apply:-

(i) **NGC**, the **Relevant Transmission Licensee**, the **Network Operator** and the relevant **Generator** 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 **NGC**. In addition other **Users**, including other **Generators**, may be reasonably required by **NGC** 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 **NGC**. **NGC** will notify the **Relevant Transmission Licensee** and all affected **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**.

(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 **NGC**, the **Relevant Transmission Licensee** and each **User** should a **Black Start** situation arise.

(iv) Each **Local Joint Restoration Plan** shall be prepared by **NGC** 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 **NGC** to the **Relevant Transmission Licensee** and **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 **NGC** and on behalf of each relevant **User** and **Relevant Transmission Licensee** by way of written confirmation of its accuracy.

(viii) Once agreed under this OC9.4.7.11, 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 **NGC, Relevant Transmission Licensee** 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 **NGC** to the **Relevant Transmission Licensee** and each **User** which is a party to it accompanied by a note indicating the date of implementation.

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

(xi) If **NGC**, the **Relevant Transmission Licensee** 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 **NGC**) initiate a discussion between **NGC,** the **Relevant Transmission Licensee** and the relevant **Users** to seek to agree the relevant change. If a **User** or the **Relevant Transmission Licensee** becomes so aware, it shall contact **NGC** who will then initiate such discussions. The principles applying to establishing a new **Local Joint Restoration Plan** under this OC9.4.7.11 shall apply to such discussions and to any consequent changes.

OC9.5 **RE-SYNCHRONISATION** OF **DE-SYNCHRONISED 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 **GB Transmission System**.

OC9.5.1 (a) Where parts of the **Total System** are **Out of Synchronism** with each other (each such part being termed a "**De-Synchronised Island**"), but there is no **Total Shutdown** or **Partial Shutdown**, **NGC** will instruct **Users** to regulate generation or **Demand,** as the case may be, to enable the **De-Synchronised Islands** to be **Re-Synchronised** and **NGC** 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 in those **De-Synchronised Islands**. This OC9.5 provides for how such **Embedded** generation should be dealt with. In Scotland, this OC9.5 also provides for how **Transmission** connected generation in **De-Synchronised Islands** should be dealt with.

(c) In accordance with the provisions of the **BCs**, **NGC** 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 to the **Re-Synchronising** of parts of the **System** following a **Total** or **Partial Shutdown**, as indicated in OC9.4.

OC9.5.2 Options

Generation in those **De-Synchronised Islands** may be dealt with in three different ways, more than one of which may be utilised in relation to any particular incident:-

OC9.5.2.1 Indirect Data

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

(b) The information to **NGC** from the **Generator** will cover its relevant operational parameters as outlined in the **BCs** and from **NGC** to the **Generator** will cover data on **Demand** and changes in **Demand** in the **De-Synchronised Island**.

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

(d) **NGC** 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-Synchronised Island.**

OC9.5.2.2 Direct Data

(a) **NGC** will issue an **Emergency Instruction** and/or a **Bid-Offer Acceptance,** to the **Generator** to "float" local **Demand** and maintain **Frequency** at **Target Frequency**. Under this the **Generator** 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 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) The **Network Operator** is required to be in contact with the **Generator** at the **Power Station** to supply data on **Demand** changes within the **De-Synchronised Island**.

(c) If more than one **Genset** is **Synchronised** on the **De-Synchronised Island**, or is connected to the **De-Synchronised Island** and available to generate although not **Synchronised,** the **Network Operator** will need to liaise with **NGC** to agree which **Genset(s)** will be utilised to accommodate

changes in **Demand** in the **De-Synchronised Island**. The **Network Operator** will then maintain contact with the relevant **Generator** (or **Generators**) in relation to that **Genset(s)**.

(d) The **Generator** at the **Power Station** 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(s)**, in order that the **Network Operator** can alter the level of **Demand** which that **Generator** needs to meet. Any decision to operate outside any relevant parameters is one entirely for the **Generator.**

OC9.5.2.3 Control Features

(a) A system may be established in relation to a part of the **GB Transmission System** and a **Network Operator's User System**, if agreed between **NGC** and the **Network Operator** and any relevant **Generator(s)**, whereby upon a defined fault(s) occurring, manual or automatic control features will operate to protect the **GB Transmission System** and relevant **Network Operator's User System** and **Genset(s)** and simplify the restoration of **Demand** in the **De-Synchronised Island**.

(b) In agreeing the establishment of such a system of control features **NGC** will need to consider its impact on the operation of the **GB Transmission System.**

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, **NGC** may choose to utilise the procedures set out in OC9.5.2.1 or OC9.5.2.2, or may instruct the **Genset(s)** (or some of them) in the **De-Synchronised Island** to **De-Synchronise.**

OC9.5.3 Choice of Option

In relation to each of the methods set out in OC9.5.2, where a **De-Synchronised Island** has come into existence and where an **OC9 De-Synchronised Island Procedure** under OC9.5.4 has been agreed, **NGC**, the **Network Operator** and relevant **Generator(s)** will operate in accordance with that **OC9 De-Synchronised Islands Procedure** unless **NGC** 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 **NGC** will instruct the relevant **Users** and the **Users** will comply with **NGC's** instructions (which in the case of **Generators** will relate to generation 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**, **NGC**, the **Network Operator** and the relevant **Generator** 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 the need for an **OC9 De-Synchronised Island Procedure** arises for the first time, the following provisions shall apply:-

(a) **NGC,** the **Network Operator(s)** and the relevant **Generator(s)** 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 **NGC** or a **User**, and the party which identifies such a need will notify all affected **Users** (and **NGC**, if that party is a **User**), and **NGC** 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 **NGC** and the **Network Operator** 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 **GB Transmission System** connected to the **User's System(s)** and **Power Stations** directly connected to the **GB 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 **NGC** and each **User** should a **De-Synchronised 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 Scotland, the **OC9 De-Synchronised Island Procedure** may be produced with and include obligations on the **Relevant Transmission Licensee** ; and

(vi) in Scotland, where the **OC9 De-Synchronised Island Procedure** includes the establishment of a **De-synchronised Island**, describe the route for establishment of the **De-Synchronised Island**.

(d) Each **OC9 De-Synchronised Island Procedure** shall be prepared by **NGC** 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 **NGC** to the **Users** involved for confirmation of its accuracy.

(g) The **OC9 De-Synchronised Island Procedure** shall then be signed on behalf of **NGC** 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 **NGC**, **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 **NGC** to each **User** which is a party accompanied by a note indicating the issue number and the date of implementation.

(j) **NGC** 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**, **NGC** 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 **NGC**, 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 **NGC**) initiate a discussion between **NGC** 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 **NGC** who will then initiate such discussions.

(m) If in relation to any discussions, agreement cannot be reached between **NGC** and the relevant **Users**, **NGC** 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 Island** means that **NGC** 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. **NGC** will instruct the relevant **Users** and the **Users** will comply with **NGC'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) **NGC** 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 **NGC** and the relevant **Users** after a reasonable period of time, the existing procedure will cease to apply and **NGC** 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 Island** means that **NGC** 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. **NGC** will instruct the relevant **Users** and the **Users** will comply with **NGC's** instructions as provided in OC9.5.3.

OC9.5.5 Where the **GB Transmission System** is **Out of Synchronism** with the transmission system of an **Externally Interconnected System Operator**, **NGC** 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 **GB Transmission System**.

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 **NGC** 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 **GB Transmission System**, and in the case of an **Event** on the **GB 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 **GB 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 **NGC**, and

(ii) **NGC** 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 **NGC** 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 **GB 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**, **NGC** or a **User**, as the case may be, will, if it considers necessary, telephone the **User** or **NGC**, 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, **NGC** or a **User**, as the case may be, will determine whether or not the **Event** is a **Joint System Incident**, and, if so, **NGC** and/or the **User** may set up an **Incident Centre** in order to avoid overloading the existing **NGC** or that **User's,** as the case may be, operational/control arrangements.

OC9.6.5 Where **NGC** has determined that an **Event** is a **Joint System Incident**, **NGC** 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 **NGC** 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 **NGC's Incident Centre** and/or the **User's Incident Centre** will not assume any responsibility for the operation of the **GB Transmission System** or **User's System**, as the case may be, but will be the focal point in **NGC** or the **User**, as the case may be, for:-

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

(b) between the **User** and the senior management representatives of **NGC**, 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 **NGC** and **Users** will continue to be used.

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

OC9.6.9 All communications between the senior management representatives of **NGC** 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 **NGC** 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 **NGC** of this decision.

<End of OC9>

GENERAL CONDITIONS

GC.1 INTRODUCTION

GC.1.1 The **General Conditions** contain provisions which are of general application to all provisions of the **Grid Code**. Their objective is to ensure, to the extent possible, that the various sections of the **Grid Code** work together and work in practice for the benefit of all **Users**.

GC.2 SCOPE

GC.2.1 The **General Conditions** apply to all **Users** (including, for the avoidance of doubt, **NGC**).

GC.3 UNFORESEEN CIRCUMSTANCES

GC.3.1 If circumstances arise which the provisions of the **Grid Code** have not foreseen, **NGC** shall, to the extent reasonably practicable in the circumstances, consult promptly and in good faith all affected **Users** in an effort to reach agreement as to what should be done. If agreement between **NGC** and those **Users** as to what should be done cannot be reached in the time available, **NGC** shall determine what is to be done. Wherever **NGC** makes a determination, it shall do so having regard, wherever possible, to the views expressed by **Users** and, in any event, to what is reasonable in all the circumstances. Each **User** shall comply with all instructions given to it by **NGC** following such a determination provided that the instructions are consistent with the then current technical parameters of the particular **User's System** registered under the **Grid Code**. **NGC** shall promptly refer all such unforeseen circumstances and any such determination to the Panel for consideration in accordance with GC.4.2(e).

GC.4 THE **GRID CODE** REVIEW PANEL

GC.4.1 **NGC** shall establish and maintain the **Panel**, which shall be a standing body to carry out the functions referred to in paragraph GC.4.2.

GC.4.2 The **Panel** shall:

(a) keep the **Grid Code** and its working under review;

(b) review all suggestions for amendments to the **Grid Code** which the **Authority** or any **User** or any **Relevant Transmission Licensee** (in respect of PC.6.2, PC Appendix C, CC.6.1, CC.6.2, CC.6.3, OC8 and GC.11, OC7.6, OC9.4 and OC9.5) may wish to submit to **NGC** for consideration by the **Panel** from time to time;

(c) publish recommendations as to amendments to the **Grid Code** that **NGC** or the **Panel** feels are necessary or desirable and the reasons for the recommendations;

(d) issue guidance in relation to the **Grid Code** and its implementation, performance and interpretation when asked to do so by any **User**;

(e) consider what changes are necessary to the **Grid Code** arising out of any unforeseen circumstances referred to it by **NGC** under GC.3; and

(f) consider and identify changes to the **Grid Code** to remove any unnecessary differences in the treatment of issues in Scotland from their treatment in England and Wales.

GC.4.3 The **Panel** shall consist of:

(a) a Chairman and up to 4 members appointed by **NGC**;

(b) a person appointed by the **Authority**; and

(c) the following members:

(i) 3 persons representing those **Generators** each having **Large Power Stations** with a total **Registered Capacity** in excess of 3 GW;

(ii) a person representing those **Generators** each having **Large Power Stations** with a total **Registered Capacity** of 3 GW or less;

(iii) 2 persons representing the **Network Operators** in England and Wales;

(iv) a person representing the **Network Operators** in Scotland;

(v) a person representing the **Suppliers**;

(vi) a person representing the **Non Embedded Customers**;

(vii) a person representing the **Generators** with **Small Power Stations** and/or **Medium Power Stations** (other than **Generators** who also have **Large Power Stations**);

(viii) a person representing the **BSC Panel**;

(ix) a person representing the **Externally Interconnected System Operators**;

(x) a person representing **Generators** with **Novel Units**; and

(xi) a person representing each **Relevant Transmission Licensee** (in respect of PC.6.2, PC Appendix C, CC.6.1, CC.6.2, CC.6.3, OC8 and GC.11, OC7.6, OC9.4 and OC9.5).

each of whom shall be appointed pursuant to the rules issued pursuant to GC.4.4.

GC.4.4 The **Panel** shall establish and comply at all times with its own rules and procedures relating to the conduct of its business, which shall be approved by the **Authority.**

GC.4.5 **NGC** shall consult in writing all **Authorised Electricity Operators** which are liable to be materially affected in relation to all proposed amendments to the **Grid Code**

and shall submit all proposed amendments to the **Grid Code** to the **Panel** for discussion prior to such consultation.

GC.4.6 **NGC** shall establish (and, where appropriate, revise from time to time) joint working arrangements with the **STC Committee** to facilitate the identification, co-ordination, making and implementation of change to the **STC** consequent on an amendment to the **Grid Code** in a full and timely manner. These working arrangements shall be such as enable the consideration development and evaluation of proposed amendments to the **Grid Code** to proceed in a full and timely manner and enable changes to the **STC** consequent on an amendment to the **Grid Code** to be made and given effect wherever possible (subject to any necessary consent of the **Authority**) at the same time as such approved amendment is made and given effect.

GC.5 COMMUNICATION BETWEEN **NGC** AND **USERS**

GC.5.1 Unless otherwise specified in the **Grid Code**, all instructions given by **NGC** and communications (other than relating to the submission of data and notices) between **NGC** and **Users** (other than **Generators** or **Suppliers**) shall take place between the **NGC Control Engineer** based at the **Transmission Control Centre** notified by **NGC** to each **User** prior to connection, and the relevant **User Responsible Engineer/Operator**, who, in the case of a **Network Operator**, will be based at the **Control Centre** notified by the **Network Operator** to **NGC** prior to connection.

GC.5.2 Unless otherwise specified in the **Grid Code** all instructions given by **NGC** and communications (other than relating to the submission of data and notices) between **NGC** and **Generators** and/or **Suppliers** shall take place between the **NGC Control Engineer** based at the **Transmission Control Centre** notified by **NGC** to each **Generator** prior to connection, or to each **Supplier** prior to submission of **BM Unit Data**, and either the relevant **Generator's** or **Supplier's Trading Point** (if it has established one) notified to **NGC** or the **Control Point** of the **Supplier** or the **Generator's Power Station**, as specified in each relevant section of the **Grid Code**. In the absence of notification to the contrary, the **Control Point** of a **Generator's Power Station** will be deemed to be the **Power Station** at which the **Generating Units** are situated.

GC.5.3 Unless otherwise specified in the **Grid Code**, all instructions given by **NGC** and communications (other than relating to the submission of data and notices) between **NGC** and **Users** will be given by means of the **Control Telephony** referred to in CC.6.5.2.

GC.5.4 If the **Transmission Control Centre** notified by **NGC** to each **User** prior to connection, or the **User Control Centre**, notified in the case of a **Network Operator** to **NGC** prior to connection, is moved to another location, whether due to an emergency or for any other reason, **NGC** shall notify the relevant **User** or the **User** shall notify **NGC**, as the case may be, of the new location and any changes to the **Control Telephony** necessitated by such move, as soon as practicable following the move.

GC.5.5 If any **Trading Point** notified to **NGC** by a **Generator** prior to connection, or by a **Supplier** prior to submission of **BM Unit Data**, is moved to another location or is shut down, the **Generator** or **Supplier** shall immediately notify **NGC**.

GC.5.6 The recording (by whatever means) of instructions or communications given by means of **Control Telephony** will be accepted by **NGC** and **Users** as evidence of those instructions or communications.

GC.6 MISCELLANEOUS

GC.6.1 Data and Notices

GC.6.1.1 Data and notices to be submitted either to **NGC** or to **Users** under the **Grid Code** (other than data which is the subject of a specific requirement of the **Grid Code** as to the manner of its delivery) shall be delivered in writing either by hand or sent by first-class pre-paid post, or by facsimile transfer or by electronic mail to a specified address or addresses previously supplied by **NGC** or the **User** (as the case may be) for the purposes of submitting that data or those notices.

GC.6.1.2 References in the **Grid Code** to "in writing" or "written" include typewriting, printing, lithography, and other modes of reproducing words in a legible and non-transitory form and in relation to submission of data and notices includes electronic communications.

GC.6.1.3 Data delivered pursuant to paragraph GC.6.1.1, in the case of data being submitted to **NGC**, shall be addressed to the **Transmission Control Centre** at the address notified by **NGC** to each **User** prior to connection, or to such other Department within **NGC** or address, as **NGC** may notify each **User** from time to time, and in the case of notices to be submitted to **Users**, shall be addressed to the chief executive of the addressee (or such other person as may be notified by the **User** in writing to **NGC** from time to time) at its address(es) notified by each **User** to **NGC** in writing from time to time for the submission of data and service of notices under the **Grid Code** (or failing which to the registered or principal office of the addressee).

GC.6.1.4 All data items, where applicable, will be referenced to nominal voltage and **Frequency** unless otherwise stated.

GC.7 OWNERSHIP OF **PLANT** AND/OR **APPARATUS**

References in the **Grid Code** to **Plant** and/or **Apparatus** of a **User** include **Plant** and/or **Apparatus** used by a **User** under any agreement with a third party.

GC.8 SYSTEM CONTROL

Where a **User's System** (or part thereof) is, by agreement, under the control of **NGC**, then for the purposes of communication and co-ordination in operational timescales **NGC** can (for those purposes only) treat that **User's System** (or part thereof) as part of the **GB Transmission System**, but, as between **NGC** and **Users,** it shall remain to be treated as the **User's System** (or part thereof).

GC.9 EMERGENCY SITUATIONS

Users should note that the provisions of the **Grid Code** may be suspended, in whole or in part, during a Security Period, as more particularly provided in the **Fuel Security Code**, or pursuant to any directions given and/or orders made by the **Secretary of State** under section 96 of the **Act** or under the Energy Act 1976.

GC.10 MATTERS TO BE AGREED

Save where expressly stated in the **Grid Code** to the contrary where any matter is left to **NGC** and **Users** to agree and there is a failure so to agree the matter shall not without the consent of both **NGC** and **Users** be referred to arbitration pursuant to the rules of the **Electricity Supply Industry Arbitration Association.**

GC.11 GOVERNANCE OF **ELECTRICAL STANDARDS**

GC.11.1 In relation to the **Electrical Standards** the following provisions shall apply.

GC.11.2 (a) If a **User**, or in respect of (a) or (b) to the annex, **NGC**, or in respect of (c) or (d) to the annex, the **Relevant Transmission Licensee**, wishes to:-

(i) raise a change to an **Electrical Standard**;

(ii) add a new standard to the list of **Electrical Standards**;

(iii) delete a standard from being an **Electrical Standard**,

it shall activate the **Electrical Standards** procedure.

(b) The **Electrical Standards** procedure is the notification to the secretary to the **Panel** of the wish to so change, add or delete an **Electrical Standard**. That notification must contain details of the proposal, including an explanation of why the proposal is being made.

GC.11.3 Ordinary **Electrical Standards** Procedure

(a) Unless it is identified as an urgent **Electrical Standards** proposal (in which case GC.11.4 applies) or unless the notifier requests that it be tabled at the next **Panel** meeting, as soon as reasonably practicable following receipt of the notification, the **Panel** secretary shall forward the proposal, with a covering paper, to **Panel** members.

(b) If no objections are raised within 20 Business Days of the date of the proposal, then it shall be deemed approved pursuant to the **Electrical Standards** procedure, and **NGC** shall make the change to the relevant **Electrical Standard** or the list of **Electrical Standards** contained in the Annex to this GC.11.

(c) If there is an objection (or if the notifier had requested that it be tabled at the next **Panel** meeting rather than being dealt with in writing), then the proposal will be included in the agenda for the next following **Panel** meeting.

(d) If there is broad consensus at the **Panel** meeting in favour of the proposal, **NGC** will make the change to the **Electrical Standard** or the list of **Electrical Standards** contained in the Annex to this GC.11.

(e) If there is no such broad consensus, including where the Panel believes that further consultation is needed, **NGC** will establish a **Panel** working

group if this was thought appropriate and in any event **NGC** shall undertake a consultation of **Authorised Electricity Operators** liable to be materially affected by the proposal.

(f) Following such consultation, **NGC** will report back to **Panel** members, either in writing or at a **Panel** meeting. If there was broad consensus in the consultation, then **NGC** will make the change to the **Electrical Standard** or the list of **Electrical Standards** contained in the Annex to this GC.11.

(g) Where following such consultation there is no broad consensus, the matter will be referred to the **Authority** who will decide whether the proposal should be implemented and will notify **NGC** of its decision. If the decision is to so implement the change, **NGC** will make the change to the **Electrical Standard** or the list of **Electrical Standards** contained in the Annex to this GC.11.

(h) In all cases where a change is made to the list of **Electrical Standards**, **NGC** will publish and circulate a replacement page for the Annex to this GC covering that list and reflecting the change.

GC.11.4 Urgent **Electrical Standards** Procedure

(a) If the notification is marked as an urgent **Electrical Standards** proposal, the **Panel** secretary will contact **Panel** members in writing to see whether a majority who are contactable agree that it is urgent and in that notification the secretary shall propose a timetable and procedure which shall be followed.

(b) If such members do so agree, then the secretary will initiate the procedure accordingly, having first obtained the approval of the **Authority**.

(c) If such members do not so agree, or if the **Authority** declines to approve the proposal being treated as an urgent one, the proposal will follow the ordinary **Electrical Standards** procedure as set out in GC.11.3 above.

(d) If a proposal is implemented using the urgent **Electrical Standards** procedure, **NGC** will contact all **Panel** members after it is so implemented to check whether they wish to discuss further the implemented proposal to see whether an additional proposal should be considered to alter the implementation, such proposal following the ordinary **Electrical Standards** procedure.

GC.12 CONFIDENTIALITY

GC.12.1 **Users** should note that although the **Grid Code** contains in certain sections specific provisions which relate to confidentiality, the confidentiality provisions set out in the **CUSC** apply generally to information and other data supplied as a requirement of or otherwise under the **Grid Code**.

GC.13 RELEVANT TRANSMISSION LICENSEES

GC.13.1 It is recognised that the **Relevant Transmission Licensees** are not parties to the **Grid Code**. Accordingly, notwithstanding that Operating Code No. 8 Appendix 2 ("OC8B"), OC7.6, OC9.4 and OC9.5 refer to obligations which will in practice be

performed by the **Relevant Transmission Licensees** in accordance with relevant obligations under the **STC**, for the avoidance of doubt all contractual rights and obligations arising under OC8B, OC7.6, OC9.4 and OC9.5 shall exist between **NGC** and the relevant **User** and in relation to any enforcement of those rights and obligations OC8B, OC7.6, OC9.4 and OC9.5 shall be so read and construed. The **Relevant Transmission Licensees** shall enjoy no enforceable rights under OC8B, OC7.6, OC9.4 and OC9.5 nor shall they be liable (other than pursuant to the **STC**) for failing to discharge any obligations under OC8B, OC7.6, OC9.4 and OC9.5.

GC.13.2 For the avoidance of doubt nothing in this **Grid Code** confers on any **Relevant Transmission Licensee** any rights, powers or benefits for the purpose of the Contracts (Rights of Third Parties) Act 1999.

GC.14 BETTA TRANSITION ISSUES

GC.14.1 The provisions of the Appendix to the **General Conditions** apply in relation to issues arising out of the transition associated with the designation of amendments to the **Grid Code** by the **Secretary of State** in accordance with the provisions of the Energy Act 2004 for the purposes of Condition C14 of **NGC's Transmission Licence**.

Annex to the **General Conditions**

The **Electrical Standards** are as follows:-

(a)	NGTS 1	Ratings and General Requirements for Plant, Equipment, Apparatus and Services for the National Grid System and Direct Connections to it	Issue 5 Dec-03
	NGTS 2.1	Substations	Issue 4 Dec-03
	NGTS 3.1.1	Substation Interlocking Schemes	Issue 3 Dec-03
	NGTS 2.2	Switchgear for the National Grid System	Issue 4 Dec-03
	NGTS 3.2.1	Circuit-breakers and Switches	Issue 3 Dec-03
	NGTS 3.2.2	Disconnectors and Earthing Switches	Issue 4 Dec-03
	NGTS 3.2.3	Metal-Oxide Surge Arresters for use on 132, 275 & 400 kV Systems	Issue 4 Dec-03
	NGTS 3.2.4	Current Transformers for Protection and General Use on the 132 kV, 275 kV and 400 kV Systems	Issue 5 Dec-03
	NGTS 3.2.5	Voltage Transformers for use on the 132 kV, 275 kV and 400 kV Systems	Issue 4 Dec-03
	NGTS 3.2.6	Current and Voltage Measurement Transformers for Settlement Metering of the 33 * 66 kV, 132 kV, 275 kV and 400 kV Systems	Issue 2 Dec-03
	NGTS 3.2.7	Bushings for the National Grid System	Issue 3 Dec-03
	NGTS 3.2.9	Post Insulators for Substations	Issue 3 Dec-03
	NGTS 3.3.2	Dry-Type Reactors	Issue 3 Dec-03
	NGTS 3.3.3	Co-ordinating Gaps	Issue 1 Sep-92
	NGTS 2.6	Protection	Issue 3 Nov-98
	NGTS 3.6.3	Busbar Protection for 400 kV and 275 kV Double Busbar Switching Stations	Issue 3 Dec-96
	NGTS 3.6.8	Circuit-Breaker Fail Protection	Issue 3 Mar-99
	NGTS 3.11.1	Capacitors and Capacitor Banks	Issue 3 Dec-03

(b) The following specifications for electronic data communications facilities with reference to EDT and EDL facilities.

EDT Interface Specification	Issue 4
EDT Submitter Guidance Note	Dec-01
EDL Message Interface Specifications	Issue 4
EDL Interface Specification Guidance Note	Oct-01
EDL Instruction Interface Valid Reason Codes	Issue 2

(c) Scottish **Electrical Standards** for **SPT's Transmission System**.

SPTTS 1	Requirements for the SP Transmission System and Connection Points to it.	Issue 1
SPTTS 2.1	Substations	Issue 1
SPTTS 2.2	Switchgear	Issue 1
SPTTS 2.3	Transformers and Reactors	Issue 1
SPTTS 2.5	Cables	Issue 1
SPTTS 2.6	Protection	Issue 1
SPTTS 2.7	Substation Control Systems	Issue 1
SPTTS 2.12	Substation Auxiliary Supplies	Issue 1

(d) Scottish **Electrical Standards** for **SHETL's Transmission System**.

1. NGTS 1: Rating and General Requirements for Plant, Equipment , Apparatus and Services for the National Grid System and Direct Connection to it.
   Issue 3 March 1999.
2. NGTS 2.1: Substations
   Issue 2 May 1995.
3. NGTS 3.1.1: Substation Interlocking Schemes.
   Issue 1 October 1993.
4. NGTS 3.2.1: Circuit Breakers and Switches.
   Issue 1 September 1992.
5. NGTS 3.2.2: Disconnectors and Earthing Switches.

Issue 1 March 1994.

6. NGTS 3.2.3: Metal-Oxide surge arresters for use on 132, 275 and 400kV systems.
   Issue 2 May 1994.

7. NGTS 3.2.4: Current Transformers for protection and General use on the 132, 275 and 400kV systems.
   Issue 1 September 1992.

8. NGTS 3.2.5: Voltage Transformers for use on the 132, 275 and 400 kV systems.
   Issue 2 March 1994.

9. NGTS 3.2.6: Current and Voltage Measurement Transformers for Settlement Metering of 33, 66, 132, 275 and 400kV systems.
   Issue 1 September 1992.

10. NGTS 3.2.7: Bushings for the Grid Systems.
    Issue 1 September 1992.

11. NGTS 3.2.9: Post Insulators for Substations.
    Issue 1 May 1996.

12. NGTS 2.6: Protection
    Issue 2 June 1994.

13. NGTS 3.11.1: Capacitors and Capacitor Banks.
    Issued 1 March 1993.

Appendix to the **General Conditions**

GC.A1 Introduction

GC.A1.1 This Appendix to the **General Conditions** deals with issues arising out of the transition associated with the designation of amendments to the **Grid Code** by the **Secretary of State** in accordance with the provisions of the Energy Act 2004 for the purposes of Condition C14 of **NGC's Transmission Licence**. For the purposes of this Appendix to the **General Conditions**, the version of the **Grid Code** as amended by the changes designated by the **Secretary of State** and as further amended from time to time shall be referred to as the "**GB Grid Code**".

GC.A1.2 The provisions of this Appendix to the **General Conditions** shall only apply to **Users** (as defined in GC.A1.4) and **NGC** after **Go-Live** for so long as is necessary for the transition requirements referred to in GC.A1.1 and cut-over requirements (as further detailed in GC.A3.1) to be undertaken.

GC.A1.3 In this Appendix to the **General Conditions**:

(a) **Existing E&W Users** and **E&W Applicants** are referred to as "**E&W Users**";

(b) **Users** who as at 1 January 2005 have entered into an agreement or have accepted an offer for connection to and/or use of the **Transmission System** of **NGC** are referred to as "**Existing E&W Users**";

(c) **Users** (or prospective **Users**) other than **Existing E&W Users** who apply during the **Transition Period** for connection to and/or use of the **Transmission System** of **NGC** are referred to as "**E&W Applicants**";

(d) **Existing Scottish Users** and **Scottish Applicants** are referred to as "**Scottish Users**";

(e) **Users** who as at 1 January 2005 have entered into an agreement or have accepted an offer for connection to and/or use of the **Transmission System** of either **Relevant Transmission Licensee** are referred to as "**Existing Scottish Users**";

(f) **Users** (or prospective **Users**) other than **Existing Scottish Users** who apply during the **Transition Period** for connection to and/or use of the **Transmission System** of either **Relevant Transmission Licensee** are referred to as "**Scottish Applicants**";

(g) the term "**Transition Period**" means the period from **Go-Active** to **Go-Live** (unless it is provided to be different in relation to a particular provision), and is the period with which this Appendix to the **General Conditions** deals;

(h) the term "**Interim GB SYS**" means the document of that name referred to in Condition C11 of **NGC's Transmission Licence**;

(i) the term "**Go-Active**" means the date on which the amendments designated by the **Secretary of State** to the **Grid Code** in accordance with the Energy Act 2004 come into effect; and

(j) the term "**Go-Live**" means the date which the **Secretary of State** indicates in a direction shall be the BETTA go-live date.

GC.A1.4 The provisions of GC.2.1 shall not apply in respect of this Appendix to the **General Conditions**, and in this Appendix to the **General Conditions** the term "**Users**" means:

(a) **Generators**;

(b) **Network Operators**;

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

(d) **Suppliers**;

(e) **BM Participants**; and

(f) **Externally Interconnected System Operators**,

to the extent that the provisions of this Appendix to the **General Conditions** affect the rights and obligations of such **Users** under the other provisions of the **GB Grid Code**.

GC.A1.5 The **GB Grid Code** has been introduced with effect from **Go-Active** pursuant to the relevant licence changes introduced into **NGC's Transmission Licence**. **NGC** is required to implement and comply, and **Users** to comply, with the **GB Grid Code** subject as provided in this Appendix to the **General Conditions**, which provides for the extent to which the **GB Grid Code** is to apply to **NGC** and **Users** during the **Transition Period**.

GC.A1.6 This Appendix to the **General Conditions** comprises:

(a) this Introduction;

(b) **GB Grid Code** transition issues; and

(c) Cut-over issues.

GC.A1.7 Without prejudice to GC.A1.8, the failure of any **User** or **NGC** to comply with this Appendix to the **General Conditions** shall not invalidate or render ineffective any part of this Appendix to the **General Conditions** or actions undertaken pursuant to this Appendix to the **General Conditions**.

GC.A1.8 A **User** or **NGC** shall not be in breach of any part of this Appendix to the **General Conditions** to the extent that compliance with that part is beyond its power by reason of the fact that any other **User** or **NGC** is in default of its obligations under this Appendix to the **General Conditions**.

GC.A1.9 Without prejudice to any specific provision under this Appendix to the **General Conditions** as to the time within which or the manner in which a **User** or **NGC** should perform its obligations under this Appendix to the **General Conditions**, where a **User** or **NGC** is required to take any step or measure under this Appendix to the **General Conditions**, such requirement shall be construed as including any obligation to:

(a) take such step or measure as quickly as reasonably practicable; and

(b) do such associated or ancillary things as may be necessary to complete such step or measure as quickly as reasonably practicable.

GC.A1.10 **NGC** shall use reasonable endeavours to identify any amendments it believes are needed to the **GB Grid Code** in respect of the matters referred to for the purposes of Condition C14 of **NGC's Transmission Licence** and in respect of the matters identified in GC.A1.11, and, having notified the **Authority** of its consultation plans in relation to such amendments, **NGC** shall consult in accordance with the instructions of the **Authority** concerning such proposed amendments.

GC.A1.11 The following matters potentially require amendments to the **GB Grid Code**:

(a) The specific detail of the obligations needed to manage implementation in the period up to and following (for a temporary period) **Go-Live** to achieve the change to operation under the **GB Grid Code** (to be included in GC.A3).

(b) Information (including data) and other requirements under the **GB Grid Code** applicable to **Scottish Users** during the **Transition Period** (to be included in GC.A2).

(c) The conclusions of Ofgem/DTI in relation to small and/or embedded generator issues under BETTA and allocation of access rights on a GB basis.

(d) Any arrangements required to make provision for operational liaison, including **Black Start** and islanding arrangements in Scotland.

(e) Any arrangements required to make provision for cascade hydro **BM Units**.

(f) Any consequential changes to the safety co-ordination arrangements resulting from **STC** and **STC** procedure development.

(g) Any arrangements required to reflect the **Electrical Standards** for the **Transmission Systems** of **SPT** and **SHETL**.

(h) The conclusions of Ofgem/DTI in relation to planning and operating standards.

GC.A1.12 **NGC** shall notify the **Authority** of any amendments that **NGC** identifies as needed pursuant to GC.A1.10 and shall make such amendments as the **Authority** approves.

GC.A2 GB Grid Code Transition

General Provisions

GC.A2.1 The provisions of the **GB Grid Code** shall be varied or suspended (and the requirements of the **GB Grid Code** shall be deemed to be satisfied) by or in accordance with, and for the period and to the extent set out in this GC.A2, and

in accordance with the other applicable provisions in this Appendix to the **General Conditions**.

GC.A2.2 ***E&W Users:***

In furtherance of the licence provisions referred to in GC.A1.5, **E&W Users** shall comply with the **GB Grid Code** during the **Transition Period**, but shall comply with and be subject to it subject to this Appendix to the **General Conditions**, including on the basis that:

(a) during the **Transition Period** the **Scottish Users** are only complying with the **GB Grid Code** in accordance with this Appendix to the **General Conditions**; and

(b) during the **Transition Period** the **GB Transmission System** shall be limited to the **Transmission System** of **NGC**, and all rights and obligations of **E&W Users** in respect of the **GB Transmission System** under the **GB Grid Code** shall only apply in respect of the **Transmission System** of **NGC**, and all the provisions of the **GB Grid Code** shall be construed accordingly.

GC.A2.3 ***Scottish Users:***

In furtherance of the licence provisions referred to in GC.A1.5, **Scottish Users** shall comply with the **GB Grid Code** and the **GB Grid Code** shall apply to or in relation to them during the **Transition Period** only as provided in this Appendix to the **General Conditions**.

GC.A2.4 ***NGC:***

In furtherance of the licence provisions referred to in GC.A1.5, **NGC** shall implement and comply with the **GB Grid Code** during the **Transition Period**, but shall implement and comply with and be subject to it subject to, and taking into account, all the provisions of this Appendix to the **General Conditions**, including on the basis that:

(a) during the **Transition Period NGC's** rights and obligations in relation to **E&W Users** in respect of the **GB Transmission System** under the **GB Grid Code** shall only apply in respect of the **Transmission System** of **NGC**, and all the provisions of the **GB Grid Code** shall be construed accordingly; and

(b) during the **Transition Period NGC's** rights and obligations in relation to **Scottish Users** in respect of the **GB Transmission System** under the **GB Grid Code** shall only be as provided in this Appendix to the **General Conditions**.

Specific Provisions

GC.A2.5 ***Definitions:***

The provisions of the **GB Grid Code Glossary and Definitions** shall apply to and for the purposes of this Appendix to the **General Conditions** except where provided to the contrary in this Appendix to the **General Conditions**.

GC.A2.6 ***Identification of Documents:***

In the period beginning at **Go-Active**, **Scottish Users** will work with **NGC** to identify and agree with **NGC** any documents needed to be in place in accordance with the **GB Grid Code**, to apply from **Go-Live** or as earlier provided for under this Appendix to the **General Conditions**, including (without limitation) **Site Responsibility Schedules**, **Gas Zone Diagrams** and **OC9 Desynchronised Island Procedures**.

GC.A2.7 ***Data:***

Each **Scottish User** must provide, or enable a **Relevant Transmission Licensee** to provide, **NGC**, as soon as reasonably practicable upon request, with all data which **NGC** needs in order to implement, with effect from **Go-Live**, the **GB Grid Code** in relation to Scotland. This data will include, without limitation, the data that a new **User** is required to submit to **NGC** under CC.5.2. **NGC** is also entitled to receive data on **Scottish Users** over the **Relevant Transmission Licensees**' SCADA links to the extent that **NGC** needs it for use in testing and in order to implement, with effect from **Go-Live**, the **GB Grid Code** in relation to Scotland. After **Go-Live** such data shall, notwithstanding GC.A1.2, be treated as though it had been provided to **NGC** under the enduring provisions of the **GB Grid Code**.

GC.A2.8 ***Verification of Data etc:***

NGC shall be entitled to request from a **Scottish User** (which shall comply as soon as reasonably practicable with such a request) confirmation and verification of any information (including data) that has been received by a **Relevant Transmission Licensee** under an existing grid code and passed on to **NGC** in respect of that **Scottish User**. After **Go-Live** such information (including data) shall, notwithstanding GC.A1.2, be treated as though provided to **NGC** under the enduring provisions of the **GB Grid Code**.

GC.A2.9 ***Grid Code Review Panel:***

(a) The individuals whose names are notified to **NGC** by the **Authority** prior to **Go-Active** as **Panel** members (and alternate members, if applicable) are agreed by **Users** (including **Scottish Users**) and **NGC** to constitute the **Panel** members and alternate members of the **Grid Code Review Panel** as at the first meeting of the **Grid Code Review Panel** after **Go-Active** as if they had been appointed as **Panel** members (and alternate members) pursuant to the relevant provisions of the Constitution and Rules of the **Grid Code Review Panel** incorporating amendments equivalent to the amendments to GC.4.2 and GC.4.3 designated by the **Secretary of State** in accordance with the provisions of the Energy Act 2004 for the purposes of Condition C14 of **NGC's Transmission Licence**.

(b) The provisions of GC.4 of the **GB Grid Code** shall apply to, and in respect of, **Scottish Users** from **Go-Active**.

GC.A2.10 ***Interim GB SYS:***

Where requirements are stated in, or in relation to, the **GB Grid Code** with reference to the **Seven Year Statement**, they shall be read and construed as necessary as being with reference to the **Interim GB SYS**.

GC.A2.11 ***General Conditions:***

The provisions of GC.4, GC.12 and GC.13.2 of the **GB Grid Code** shall apply to and be complied with by **Scottish Users** in respect of this Appendix to the **General Conditions**.

GC.A2.12 ***OC2 Data***

(a) The following provisions of the **GB Grid Code** shall apply to and be complied with by **Scottish Users** with effect from the relevant date indicated below:

(i) OC2.4.1.2.3 (a) from 19 January 2005 in respect of 2 to 52 week submissions,

(ii) OC2.4.1.2.4 (c) from 25 February 2005 in respect of 2 to 49 day submissions,

(iii) OC2.4.1.2.4 (b) from 22 March 2005 in respect of 2 to 14 day submissions,

The data to be submitted in respect of OC2.4.1.2.3 (a) and OC2.4.1.2.4 (b) and (c) need only be in respect of dates on or after 1 April 2005.

GC.A3 Cut-over

GC.A3.1 It is anticipated that it will be appropriate for arrangements to be put in place for final transition to BETTA in the period up to and following (for a temporary period) **Go-Live**, for the purposes of:

(a) managing the transition from operations under the **Grid Code** as in force immediately prior to **Go-Active** to operations under the **GB Grid Code** and the **BSC** as in force on and after **Go-Active**;

(b) managing the transition from operations under the existing grid code applicable to **Scottish Users** as in force immediately prior to **Go-Active** to operations under the **GB Grid Code** as in force on and after **Go-Active**;

(c) managing the transition of certain data from operations under the existing grid code applicable to **Scottish Users** before and after **Go-Active**; and

(d) managing **GB Grid Code** systems, processes and procedures so that they operate effectively at and from **Go-Live**.

< End of GC >

REVISIONS

(This section does not form part of the Grid Code)

NGC's Transmission Licence sets out the way in which changes to the Grid Code are to be made and reference is also made to NGC's obligations under the General Conditions.

In order to ensure that Users have access to a current version of the Grid Code, Users who have purchased a serviced copy of the Grid Code receive a set of replacement pages containing the revisions made to the Grid Code pursuant to the Transmission Licence. Unserviced copies are not so updated but each unserviced copy issued is accompanied by all revisions since the date the unserviced version of the Grid Code was last reprinted.

All pages re-issued have the revision number and date of the revision on the lower right hand corner of the page. The changes to the text since the previous page issue are indicated by a vertical line to the right hand side of the text. Where repagination or repositioning of the text on other pages has been found necessary but the text itself has remained unchanged the re-issued pages have only the revision number and date of the revision included.

The Grid Code was introduced in March 1990 and this first issue was revised 31 times. In March 2001 the New Electricity Trading Arrangements were introduced and Issue 2 of the Grid Code was introduced which was revised 16 times. At British Electricity Trading and Transmission Arrangements (BETTA) Go-Active Issue 3 of the Grid Code was introduced.

The following 'index to revisions' provides a checklist to the pages and sections of the Grid Code changed by each revision to Issue 3 of the Grid Code.

All inquiries in relation to revisions to the Grid Code, including revisions to Issues 1 and 2, should be addressed to the Grid Code development team at the address given at the front of the Grid Code.

Revision 1 Effective Date: 4th October 2004

CODE	PAGE	CLAUSE
GD	20	Maximum Generation Service definition revised
OC7	12	OC7.4.8.5 (iii) amended to include MGS notification
BC2	12	BC2.9.2.4 amended to include reference to CUSC
BC2	13	BC2.9.3.2 (e) amended to include reference to CUSC and remove reference to MGS

Revision 2 Effective Date: 11th October 2004

CODE	PAGE	CLAUSE
GD	8	Version number and date of Data Validation, Consistency and Defaulting Rules updated to Issue 7, 11th October 2004.
GD	23	Output Usable definition revised
OC1	5	Item (k) added to OC1.6.1
OC2	1	OC2.1.4 amended
OC2	4	OC2.4.1.2.1 (a) (ii) amended
OC2	5	OC2.4.1.2.1 (e) and (f) amended
OC2	7	OC2.4.1.2.2 (a) amended
OC2	8	OC2.4.1.2.2 (e) amended
OC2	9	OC2.4.1.2.3 (a) amended
OC2	20	Oc2.4.3.1 first paragraph amended
OC2 - Page 10 page break revised		

CODE	PAGE	CLAUSE
GD	5	Definitions of Cascade Hydro Scheme and Cascade Hydro Scheme Matrix added.
GD	7	Control Point definition updated for Cascade Hydro Schemes.
GD – Pages 4, 6 and 8 to 41 page breaks revised		
PC	3	PC3.2 (a) revised
PC	21	PC.A.3.1.3(a) revised
PC	23	PC.A.3.2.1(d) added. PC.A.3.2.2 revised
PC	24	PC.A.3.2.3(i) added.
PC – Pages 25 to 53 page breaks revised.		
CC	17	CC.6.5.6 (c) added
CC – Pages 18 to 25 page breaks revised		
OC2	1	OC2.1.3 Revised
OC2	3	OC2.4.1.2.1 Revised
OC2	4	OC2.4.1.2.1(b)(i) Revised
OC2	5	OC2.4.1.2.1(c)(ii) Revised
OC2	6	OC2.4.1.2.1(g)(ii) and (i) (2) Revised
OC2	7	OC2.4.1.2.2 and (i)(ii) Revised
OC2	8	OC2.4.1.2.2 (e), (g)(i) and (ii) Revised
OC2	9	OC2.4.1.2.3 and (a), (b), (c)(i) and (ii) Revised
OC2	10	OC2.4.1.2.3 (c)(ii) Revised, OC2.4.1.2.4 (b), (c),(d) (e)(i) revised
OC2	11	OC2.4.1.2.4 (e)(ii) Revised. OC2.4.1.3.1, OC2.4.1.3.2 (a), (b) Revised
OC2	12	OC2.4.1.3.2 (c), (e), OC2.4.1.3.3 (a), (b) Revised
OC2	13	OC2.4.1.3.3(c), (d), (e), (f) (g), (h)(i) Revised
OC2	14	OC2.4.1.3.3(h)(iii), (i) Revised
OC2	15	OC2.4.1.3.3(i)(z)(1) and (4) Revised and OC2.4.1.3.4 (a), (b) Revised

OC2	16	OC2.4.1.3.4(b) Revised
OC2	17	OC2.4.1.3.5(a) Revised
OC2	18	OC2.4.1.3.5(d) Revised. OC2.4.2.1(a) revised
OC2	20	OC2.4.2.1 (k) added
OC2 – Page 2 and Pages 21 to 24 Page breaks revised		
OC5	1	OC5.1 (y) and (z) added
OC5	3	OC5.5.1.1 Subsection (a) text revised and subsequent subsections renumbered
OC5 – Pages 2, 4 and 5 Page breaks revised		
BC1	3	BC1.4.2(a) (c) revised
BC1	4	BC1.4.2 (d), (e), (f) revised
BC1	5	BC1.4.2 (f)(vi) added. BC1.4.3 and BC1.4.5 revised
BC1	6	BC1.4.5 (b) and BC1.4.5 last paragraph revised.
BC1	12	Appendix 1, first paragraph revised
BC1	17	BC1.A.1.7 added
BC1 – Pages 7 to 11, 13 to 16 and 18 to 19 page breaks revised.		
BC2	2	BC2.5.1 and (b) revised
BC2	3	BC2.5.1(c), BC2.5.2.2 and (b), BC2.5.2.3 revised
BC2	4	BC2.5.2.4 revised
BC2	5	BC2.5.3.2, BC2.5.3.3 Revised
BC2	10	BC2.8 revised
BC2	13	BC2.9.3.2(f) added
BC2	19	BC2.A.1.3 revised
BC2 – Pages 6 to 9, 11 and 12, 14 to 18 and 20 page breaks revised.		
DRC	19	Schedule 3 – page 2 revised
DRC	31	Schedule 6 revised

Revision 4 Effective Date: 19th January 2005

CODE	PAGE	CLAUSE
GC	15	New paragraph added – GC.A2.12

Revision 5 Effective Date: 4th February 2005

CODE	PAGE	CLAUSE
GD	7	New Definition – Control Engineer
GD	16	New Definition – GB Transmission System Warning
GD	21	Definition of Local Joint Restoration Plan amended
GD	21	New Definition – Local Switching Procedure
GD	24	Definition of Operation Switching amended
GD	26	Definition of Power Island amended
GD – Pages 17 to 20, 22, 23, 25, 27 and 28 page breaks revised.		
PC	51	Appendix C – C1.1, C1.2 and C1.3 added. Part 1 amended
PC	53	Appendix C – Part 2 amended
CC	26	CC.A.1.1.1 and CC.A.1.1.4(b) amended
CC	27	Footnote 1 amended
CC	32	SPT SRS added
CC	33	Scottish Hydro-Electric SRS added
CC- Pages 28, 34 to 46 page breaks amended		
OC7	1	OC7.1.5 and OC7.1.6 added
OC7	2	OC7.2.4 and OC7.3.1 amended
OC7	16 to 19	OC7.6 and associated sections added
OC7 – Pages 3 15 , 20 page breaks amended		
OC8	2	OC8.4.1.1 and OC8.4.2.1 amended

OC8A	OC8A-1	OC8A.1.1, OC8A.1.3 amended
OC8A – Pages OC8A – 2 to OC8A – 12 page breaks amended		
OC8B	OC8B - 1	OC8B.1.1, OC8B.1.3 amended
OC8B – Pages OC8B – 2 to OC8B – 8 amended		
OC9	1	OC9.1.5 added
OC9	2	OC9.2.4 and OC9.3.3 added
OC9	3	OC9.4.5.3 added. OC9.4.6 amended
OC9	4	OC9.4.7.3, OC9.4.7.4(a) amended
OC9	5	OC9.4.7.6 (d) and (e) amended
OC9	6	OC9.4.7.6 (f) and (g) amended
OC9	7	OC9.4.7.11 (a) and (b) amended
OC9	8/9	OC9.4.7.11 (c) added
OC9	9	OC9.5 paragraph added. OC9.5.1 (b) amended
OC9	10	OC9.5.2, OC9.5.2.1(a) and (d), OC9.5.2.2(b) amended
OC9	11	OC9.5.2.3(a) amended
OC9	12	OC9.5.4.1 (b) and (c)(iii), (iv), amended. OC9.5.4.1(c)(v) and (vi) added
OC9	13	OC9.5.4.1 (h) amended
OC9 – Pages 14 to 16 page breaks amended		
GC	1	GC.4.2(b) amended
GC	2	GC.4.3(c)(xi) amended
GC	6/7	GC.13.1 amended
GC	9/10	Annex (c) and (d) added
GC	16	GC.A2.12 Amended
GC – Pages 11 to 15 page breaks amended		