GB Grid Code Operating Codes 1, 2, 6, 7, 9, 10, 12

An Ofgem/DTI mini-drafting consultation document

31 October 2003

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1. Introduction

- The rationale for the introduction of a GB Grid Code (GBGC)¹ was published in 1.1. December 2002 (the December 2002 GBGC consultation). In September 2003, Ofgem/DTI published 'The Grid Code under BETTA, Ofgem/DTI conclusions and consultation on the text of a GB Grid Code (GBGC) and consultation on change co-ordination between the STC² and user-facing industry codes' (the 'September 2003 GBGC consultation')³. This document included draft one of the GBGC ('GBGC D1') as Volume 2. GBGC D1 was based on the England and Wales Grid Code (EWGC) adapted to apply across GB and included some significant regional differences that had been identified from a comparison of the Scottish Grid Code (SGC) and the EWGC that were identified in the September 2003 GBGC consultation as needing to continue under the GBGC. However, it was also recognised in the consultation that there were more detailed regional differences that needed to be considered for inclusion in the GBGC and that Ofgem/DTI were progressing work to identify the differences between the two existing Grid Codes.
- 1.2. The September 2003 GBGC consultation proposed that, in progressing the drafting of the GBGC, and in preparation for the next consultation on a full draft of the GBGC planned for February 2004, it would be helpful to conduct a number of "mini-drafting consultations" on the various sub-codes of the GBGC. In particular to draw out in more detail the technical differences between the SGC and the EWGC and to consult on further regional differences that should be incorporated in the GBGC, to be designated under BETTA. The mini-drafting consultations are intended to supplement the September 2003 GBGC consultation and build on the proposals that have been presented. It is not intended for the mini-drafting consultations to consider further the issues raised in the September 2003 GBGC consultation where views have already been invited. It is hoped that the mini-drafting consultations may provide further detailed responses to those received to the September 2003 GBGC consultation

¹ 'The Grid Code under BETTA, Ofgem/DTI consultation on a Grid Code to apply throughout GB' Ofgem/DTI, December 2002. Ofgem #78/02.

² The System Operator (SO) - Transmission Owner (TO) Code.

³ Ofgem #111/03.

on more of the detail of the GBGC drafting. All responses will be taken into account by Ofgem/DTI in their development of the second draft of the GBGC.

- 1.3. The Grid Code Expert Group (GCEG) was established prior to the December 2002 GBGC consultation to provide technical expertise to Ofgem/DTI in writing their consultations. The group is supported by the transmission licensees and several users. The sub-codes of the GBGC that are considered in each minidrafting consultation will have been discussed at the GCEG prior to Ofgem/DTI publishing the mini-drafting consultations. The mini-drafting consultations will comprise:
 - a detailed comparison of each sub-code of the SGC and the EWGC to provide a cross reference to the SGC and to identify regional differences between the existing codes
 - identification of differences between the EWGC and the GBGC
 - identification of differences between the SGC and the GBGC
 - identification of regional differences that it is proposed should apply to that sub-code that will not be harmonised for BETTA go-live, and
 - GBGC drafting or changes to GBGC D1 (depending on the volume of identified changes) for the sub-code.
- 1.4. Any draft text included in this series of GB Grid Code mini-drafting consultations will be based on GBGC D1 and will be identified as draft 1.5 of the GBGC. Where changes are proposed from the text published in GBGC D1 these will be identified. It is noted that responses are due on the September 2003 GBGC consultation and GBGC D1 on November 25 2003. Consequently, it will not be possible to consider those responses in the preparation of the mini-drafting consultations except for possibly the last mini-drafting consultation (on the Planning Code, Data Registration Code and the Glossary and Definitions see section 2 for timetable). It is hoped, however, that the publication of mini-drafting consultations will facilitate wider promulgation of the work being progressed at GCEG and enable feedback from a wider industry audience on the more detailed issues to be considered before the second draft of the GBGC is published in February 2004.

- 1.5. This mini-drafting consultation is on Operating Codes 1, 2, 6, 7, 9, 10 and 12 of GBGC D1. To assist Users in Scotland who might be unfamiliar with the EWGC, each SGC Operating Code (OC) has been compared with the EWGC OC and differences between the two codes have been identified. This analysis is presented in the Appendices. A table is also provided for SGC OC3 which has no direct equivalent sub-code in the proposed GBGC to identify where equivalent provisions can be found in the GBGC. The changes in moving to a GBGC⁴ for parties in Scotland and parties in England and Wales have been identified and are presented in sections 4 to 10, together with any further matters on which views are requested which have been identified since the September 2003 GBGC consultation. As so few changes have been identified to draft 1 of the GBGC Operating Codes considered in this mini-drafting consultation, the text of the changes has been included in the main body of the mini-drafting consultation, rather than appending the full text. They are change marked against the current version of the EWGC in the same manner as was used in GBGC D1.
- 1.6. Other mini-drafting consultations on the GB Grid Code are planned as follows:
 - OC5 (Testing and Monitoring), Connection Conditions and General Conditions, publication 21 November 2003
 - Balancing Codes, OC8 (Safety Co-ordination) and OC11 (Numbering and Nomenclature of HV Apparatus at Certain Sites), publication 12 December 2003, and
 - Planning Code, Data Registration Code and Glossary and Definitions, publication 9 January 2004.

⁴ At this stage, the numbering of the draft GBGC is the same as the EWGC.

2. Timetable and Responses

- 2.1. The proposed timetable and process for further development of the GBGC is as follows:
 - responses to this mini-drafting consultation document should be sent by Thursday 4 December 2003 to Bridget Morgan (details below)
 - an interim conclusions document may be issued in December 2003 on the issues raised in the September 2003 GBGC consultation concerning change management between user facing codes and is not expected to consider the detail of the GBGC text
 - Ofgem/DTI are not currently minded to issue a separate conclusions document specifically dealing with respondents views on each minidrafting consultation. Instead, Ofgem/DTI plan to publish a conclusions document in February 2004 that will summarise responses to the September 2003 GBGC consultation in full and responses to mini-drafting consultations.

3. Views invited

- 3.1. Parties are free to raise comments on any of the matters covered in this paper and in particular on those matters where views have been requested. Although transitional issues will be dealt with at a later date separately from the consideration here of the enduring arrangements, respondents should feel free to raise any such matters that arise in consideration of these issues. All responses, except those marked confidential will be published on the Ofgem website and held electronically in the Ofgem Research and Information Centre. Respondents should try to confine any confidential material in their responses to appendices. Ofgem prefers to receive responses in an electronic form so they can easily be placed on the Ofgem website.
- 3.2. Responses marked 'Response to GBGC OC mini-consultation' should be sent by Thursday 4 December 2003 to:

Bridget Morgan Technical Directorate Office of Gas and Electricity Markets (Ofgem) 9 Millbank London SW1P 3GE Tel: 020 7901 7080 Fax: 020 7901 7075 Email: Bridget.Morgan@ofgem.gov.uk

- 3.3. Please e-mail responses to <u>BETTA.Consultationresponse@ofgem.gov.uk</u> marked 'Response to GBGC OC mini-consultation'. All responses will be forwarded to the DTI.
- 3.4. If you wish to discuss any aspect of this document, please contact Bridget Morgan at Ofgem or Renata Williams at the DTI (e-mail: <u>renata.williams@dti.gsi.gov.uk</u>, telephone: 020 7215 0442).

4. OC1 - Demand Forecasts

Overview of GBGC OC1

4.1. OC1 provides for data to be provided by Network Operators and Generators for use by the System Operator (SO) in forecasting demand and describes factors to be taken into account by the SO in forecasting demand.

Summary of analysis of changes from EWGC OC1 to GBGC OC1

- 4.2. The following definitions are renamed:
 - NGC Financial Year to Financial Year
 - NGC Transmission Losses to Transmission Losses
 - NGC Transmission System to Transmission System
 - NGC to System Operator
 - NGC Demand to GB Demand.
- 4.3. Figures for National Demand and GB Demand will include all GB demand.
- 4.4. The GBGC will introduce two variables, the 'Demand Control Notification Level' and the 'Customer Demand Management Notification Level' which are both set to 12MW in England and Wales. This does not change the requirement from the EWGC.

Summary of analysis of changes from SGC OC1 to GBGC OC1

4.5. National Demand and GB Demand will be different from the SGC Total Demand. Figures for National Demand and GB Demand will include all GB demand.

- 4.6. In Scotland forecasts are currently made of Demand, where this means 'Total Demand' less demand to be met by Independent Generating Plant (ie power stations or generating units not subject to central despatch).
- 4.7. In the GBGC forecasts will be made of National Demand and GB Demand. Where:
 - National Demand will be defined as the electricity supplied from grid supply points plus that supplied by embedded large power stations and transmission losses minus the demand taken by station transformers and pumped storage units (and does not include any exports on interconnectors), and
 - GB Demand will be the electricity supplied from grid supply points plus that supplied by embedded large power stations and transmission losses and exports across interconnectors (and includes demand taken by station transformers and pumped storage units).
- 4.8. In the Operational Planning Phase⁵:
 - Suppliers will no longer need to provide forecasts of demand and Independent Generating Plant (IGP - defined as 'not centrally despatched plant') will not need to provide forecasts of demand to be met by IGP
 - Suppliers will no longer be provided with the day of the annual peak and minimum demand, and the time of peak demand for each month under SGC OC1 3.3. The SO will provide the date and time of the annual minimum and peak demands to Network Operators and Non-Embedded Customers (under PC.A.4.2.2)
 - Network Operators (including non-embedded customers) will need to provide data on forecast Demand Control, and
 - Generators will need to provide data on the output of Medium Power Stations (whether Embedded or not).

- 4.9. In the Programming Phase⁶:
 - Generators will need to provide data (if reasonably required by the SO) on the output of Medium Power Stations
- 4.10. In the Programming Phase , Control Phase and Post Control Phase:
 - the Demand Control Notification Level is proposed as 5MW in Scotland. The current notification level is not specified (see SGC OC1 4.1) and 0MW was proposed in GBGC D1 to reflect this. In this draft 5MW is proposed as a sensible figure, being equivalent to the level of information requested for generators (see SGC OC1 4.4) and as equivalent to the level of Customer Demand Management to be notified (see SGC OC4 4.1.6), and
 - Network Operators (including Non-Embedded Customers) will provide data on proposed use of Demand Control
- 4.11. In the Control Phase and Post Control Phase:
 - Suppliers will provide data on proposed and actual Customer Demand Management. The Customer Demand Management Notification Level is proposed at 5MW in Scotland.

Proposed regional differences and drafting changes to D1

4.12. A regional difference has been proposed in relation to Demand Control Notification Level see 4.4 (England and Wales) and 4.10 (Scotland). In Scotland, note that this has been changed from 0MW in GBGC D1 to 5MW in this draft. A regional difference has been proposed in relation to Customer Demand Management Notification Level see 4.4 (England and Wales) and 4.11 (Scotland).

⁵ In the SGC defined as 'the period from 5 years ahead down to 9 weeks ahead of real-time operation' and in the EWGC as 'the period from 8 weeks to the end of the 5th year ahead of real time operation'.
⁶ In the EWGC, the Programming Phase is split into two parts (2 to 8 weeks ahead and 2 to 12 days ahead) whereas in the SGC the first of these is separately identified as the 'Planning Phase'.

- 4.13. In the GBGC, Generators will need to provide data on the output of Medium Power Stations. In Scotland the obligation to provide information on Generators applies to data on Independent Generating Plant (which is all plant not subject to central despatch). Ofgem/DTI invite views on whether the SO's right to request information on medium power stations will be sufficient in Scotland or whether this right should be extended to include small power stations in Scotland.
- 4.14. A drafting error has been identified in GBGC D1 OC1.5.4, where the Demand Control Notification Level was used in place of the Customer Demand Management Notification Level and 'NGC' was not replaced with 'the System Operator'. The corrected text is provided here:

GBGC OC1.5.4:

'Other Codes

Under OC6 each Network Operator will notify NGC-the System Operator of their proposed use of Demand Control (which may result in a Demand change equal to or greater than the Demand Control Notification Level-of 12MW or more), and under BC1, each Supplier will notify NGC the System Operator of their proposed use of Customer Demand Management (which may result in a Demand change equal to or greater than the Customer Demand Management Notification Level of 12MW or more) in this timescale.'

Specific views sought on OC1

4.15. Views are sought on all of the drafting in OC1 (set out in GBGC D1) and in particular on the requirements for regional differences discussed in paragraphs 4.12 to 4.14.

5. OC2 - Operational Planning and Data Provision

Overview of GBGC OC2

5.1. OC2 provides for the coordination of the release of Gensets, the Transmission System and Network Operator's Systems for construction, repair and maintenance and the provision of generator data for planning purposes.

Summary of analysis of changes from EWGC OC2 to GBGC OC2

- 5.2. Surpluses for the Transmission System and System Zones may be expected to change to take into consideration the GB scope of the Transmission System.
- 5.3. The definition of 'Genset' has been amended from Generating Units at Large Power Stations to also include all directly connected generating units. There are currently no directly connected generating units in England and Wales that are not at Large Power Stations

Summary of analysis of changes from SGC OC2 to GBGC OC2

- 5.4. The two existing codes have similar scope but the requirements reflect the differences between the existing outage planning processes and between the despatch process in Scotland and the balancing mechanism in England and Wales. Consequently there will be a change in role for the transmission sector in Scotland to the co-ordination of generator outages rather than the outage approval process currently defined in the SGC.
- 5.5. There will be significant changes in the outage planning process for Generators and for Network Operators and Non-Embedded Customers in Scotland under BETTA in terms of the timing for information exchange and the classes of user who are obliged to provide information.

- 5.6. Surpluses will be provided for the (GB) Transmission System and System Zones.Scotland will be included in the System Zones.
- 5.7. The information provision process for Generators, Network Operators and Non-Embedded Customers will change.
- 5.8. Generally the provisions which will apply to Generators in the GBGC apply to Gensets whereas in the SGC they apply to Centrally Despatched Units. Gensets are the equivalent of Centrally Despatched Units plus directly connected generating units. Under GBGC OC2.1.7, Embedded Gensets in Scotland will need to provide output usable scaled to the Grid Supply Point.
- 5.9. The EWGC does not contain provisions which require Suppliers to provide information relating to radio teleswitched demand. In the SGC Suppliers notify schedules for Load Management Blocks.
- 5.10. Currently Interconnector Users provide data to the Company⁷ in the SGC OC2. Equivalent data is not requested in the EWGC.

Proposed regional differences and changes to D1

5.11. SGC OC2 4.2 provides in some instances for the reduction of the administrative burden in producing planning information where output or demand is small. Views are invited on whether it would be appropriate to include a regional difference because of the smaller size of some plant that will be captured by the obligations in Scotland. If appropriate, then the drafting proposed would be a new clause in the GBGC OC2 as follows:

GBGC OC2.1.8:

'In Scotland, it may be possible to reduce the administrative burden for Users in producing planning information where either the output or demand is small, or the information provided at any stage confirms previously supplied data.'

⁷ The Company as defined in the SGC.

5.12. One change has been identified to Draft 1 in OC2.4.1.3.5(c)(v) where 'System Operator' had not been inserted where 'NGC' had been deleted (after 'If there is such an alternative way, then'). Revised drafting is proposed as follows:

OC 2.4.1.3.5(c)(v):

'Where a **Generator** with nuclear **Large Power Stations** which may be operationally affected by the preliminary NGC Transmission System outage programme referred to in (i) above (acting as a reasonable operator) is concerned on grounds relating to safety about the effect which an outage within such outage programme might have on one or more of its nuclear **Large Power Stations**, it may contact NGC the System Operator to explain its concerns and discuss whether there is an alternative way of taking that outage (having regard to technical feasibility). If there is such an alternative way, but NGC the System Operator refuses to adopt that alternative way in taking that outage, that **Generator** may involve the **Disputes Resolution Procedure** to decide on the way the outage should be taken. If there is no such alternative way, then NGC the System Operator may take the outage despite that **Generator's** concerns.'

- 5.13. There are various provisions relating to Interconnector Users in the SGC OC2 (3, 5.18 and 5.19) which are not reflected in the EWGC. Views are invited on whether it would be appropriate to retain these as a regional difference.
- 5.14. Because of the radio teleswitching usage in Scotland, views are invited on the need to retain the information requirements pertaining to Suppliers in respect of Load Management Blocks in SGC OC2 5.19. Views are invited on whether it would be appropriate to retain these as a regional difference. Such provisions, if required as a regional difference, would seem to naturally fall into the Programming Phase provisions in the GBGC OC2.4.1.2.4.
- 5.15. The obligations on Network Operators (OC2.4.1.3.4(c)) to provide details of automatic and manual load transfer capability of 12MW in England and Wales and 10MW in Scotland have been preserved from the existing Grid Codes and the drafting for this regional difference was proposed in GBGC D1.

Specific views sought on OC2

5.16. Views are sought on all of the drafting in OC2 and in particular on the requirements for regional differences discussed in paragraphs 5.11 to 5.15.

6. OC6 - Demand Control

Overview of GBGC OC6

6.1. GBGC OC6 covers Demand Control by voltage reduction, demand control, automatic low frequency demand disconnection and emergency manual disconnection.

Summary of analysis of changes from EWGC OC6 to GBGC OC6

6.2. A parameter, Demand Control Notification Level has been added, and set at a level of 12MW. This does not change the EWGC requirements.

Summary of analysis of changes from SGC OC4 to GBGC OC6

- 6.3. SGC OC4 1.6 provides for Demand Control not to be exercised in respect of Protected Customers, the GBGC does not provide for such protection.
- 6.4. The GBGC will have a time limit of two minutes within which Network Operators should start restoration. The SGC has 'without delay'.
- 6.5. Voltage reduction (2 tranches of 3%) is not specified in the GBGC.
- 6.6. SGC OC4 4.3.1 states that the demand of certain customers can be protected against disconnection, this is not provided for in the GBGC. The GBGC (OC6.1.5) has wording consistent with the Distribution Code (DOC6.1.3) which is also a GB document.
- 6.7. A parameter Demand Control Notification Level has been added and set at a level of 5MW (see OC1). This does not change the SGC requirements.
- 6.8. SGC separates voltage reduction and demand disconnection, the GBGC allows the Network Operator to choose how the Demand Control is effected.

- 6.9. SGC OC4 4.3.3 has that 20% demand reduction shall be available, but in 4.3.5 only 10% has to be acted on. The EWGC has 20% shall be available and can be acted on.
- 6.10. SGC OC4 4.4.1 has 40% demand reduction to be available on automatic disconnection, the EWGC has 60%.
- 6.11. GBGC OC6 6.7.1 will specify that manual emergency demand disconnection must be within 30 minutes. No time limit is specified in the SGC.
- 6.12. The GBGC will use the EWGC system of warnings.

Proposed regional differences and changes to D1

- 6.13. A parameter, Demand Control Notification Level has been added see 6.2 and 6.7. This was proposed in GBGC D1.
- 6.14. The SGC and the EWGC provide for different percentages of demand reduction to be available under different circumstances. Where no warning has been given, the SGC provides for 6% voltage reduction (4.2.4) and 10% demand disconnection (4.3.5) and the EWGC for 20% demand reduction (OC6.5.3(a)). There is not a significant difference between these two figures (16% and 20%) and the SGC also states that there should be up to four, 5% groups available at all times without prior notice (4.3.3) therefore Ofgem/DTI do not propose a regional difference for these provisions.
- 6.15. When a warning is given by 16:00 day ahead, the SGC provides for 6% voltage reduction (4.2.4) and a further demand reduction (4.3.3) up to the maximum of the number of 5% blocks identified in the Red Warning (4.3.6 and 4.3.7). SGC OC4 4.3.1 states that the Network Operator must arrange its Total Demand (less certain customers) in groups of 5%, so it is presumed that the maximum number of blocks specified could be such as to represent up to 100% of total demand. The EWGC provides for up to 40% demand reduction (and more)(OC6.5.4 (b) & (c)). The EWGC further provides, that when a warning has been issued after 16:00 day ahead, that the Network Operator should provide as much reduction as he is able (OC6.5.4(d)). The SGC provision would appear to extend beyond that in the EWGC, however both codes have further provisions for Emergency Manual Disconnection (OC6.7 and SGC OC4 4.5). As the SGC provisions are

within the EWGC provisions Ofgem/DTI do not propose a regional difference for these provisions.

6.16. The SGC provides for at least 40% of Total Demand to be on automatic low frequency relay protection (4.4.1). The EWGC provides for at least 60% of its total peak demand to be on automatic low frequency disconnection (OC6.6.1). It is not proposed to align the low frequency demand disconnection schemes for BETTA go-live. Ofgem/DTI note the detailed study work that was carried out by NGC as part of its review in accordance with OC6.6.2 which resulted in changes being made to the England and Wales scheme. Therefore drafting changes to reflect a regional difference are proposed as follows:

OC6.6.1:

'Each Network Operator will make arrangements that will enable automatic low Frequency Disconnection of at least, in England and Wales, 60 per cent, and in Scotland, 40 per cent, of its total peak Demand (based on Annual ACS Conditions), in order to seek to limit the consequences of a major loss of generation or an Event on the Total System which leaves part of the Total System with a generation deficit.'

- 6.17. In the British Grid System Agreement (BGSA) there is a table of numbers relating to the Application of Low Frequency Disconnection as arranged by the National Grid Company (NGC), SP Transmission Limited (SPT) and Scottish Hydro Electric Transmission Limited (SHETL). As the BGSA is not expected to endure, GCEG have raised whether this information could be included in the GBGC, STC or the Seven Year Statement.
- 6.18. The GBGC (in OC6.7.2) will require Network Operators to provide information on the demand disconnection available on a GSP basis. It has been identified that an obligation for a 20% demand reduction on a GSP basis might be difficult to achieve in Scotland and it may be more appropriate to define the obligation on a wider basis. Ofgem/DTI would welcome views on whether a regional difference should be proposed here.

Specific views sought on OC6

6.19. Views are sought on all of the drafting in OC6 and in particular on the matters raised in paragraphs 6.13 to 6.18.

7. OC7 - Operational Liaison

Overview of GBGC OC7

7.1. GBGC OC7 covers the exchange of information in relation to Operations or Events on the Total System. It also sets out the various Transmission System Warnings and deals with Integral Equipment Tests.

Summary of analysis of changes from EWGC OC7 to GBGC OC7

7.2. NGC System Warning will be renamed Transmission System Warning.

Summary of analysis of changes from SGC OC5 to GBGC OC7

- 7.3. Handling of Operations and Events is very similar, there are minor differences in the form of notifications.
- 7.4. Transmission System Warnings will be based on the EWGC warnings.
- 7.5. Integral Equipment Tests will be included as part of an Operating Code (as opposed to SGC SDC2 4.8.5).

Proposed regional differences and changes to D1

7.6. None.

Specific views sought on OC7

7.7. Views are sought on all of the drafting in OC7.

8. OC9 - Contingency Planning

Overview of GBGC OC9

8.1. GBGC OC9 covers contingency planning including black start and resynchronisation of islands. More detailed black start procedures are currently being considered by the SO-TO Expert Group (STEG). The draft of the GBGC will be reviewed in light of the procedures that result from the STEG considerations.

Summary of analysis of changes from EWGC OC9 to GBGC OC9

8.2. None.

Summary of analysis of changes from SGC OC7 to GBGC OC9

- 8.3. Local Joint Restoration Plans will need to be established.
- 8.4. 'OC9 De-Synchronised Island Procedures' will need to be established.
- 8.5. Users will be able to determine when an Event is a Joint System Incident.

Proposed regional differences and changes to D1

8.6. None (subject to further review).

Specific views sought on OC9

8.7. Views are sought on all of the drafting in OC9.

9. OC10 - Event Information Supply

Overview of GBGC OC10

9.1. GBGC OC10 covers the exchange of information about Significant Incidents first identified in EWGC OC7 (SGC OC5) and sets out the process for a Joint Investigation.

Summary of analysis of changes from EWGC OC10 to GBGC OC10

9.2. In OC10.4.1.1 User provided information may be used in a report to be written by the SO which may be required under the STC.

Summary of analysis of changes from SGC OC8 to GBGC OC10

- 9.3. Similar differences to those between EWGC OC7 and SGC OC5, in that the GBGC allows either Users or the Company to identify the Event as a Significant Incident.
- 9.4. There will no longer be a requirement to provide the Company with information to support system analysis (other than as part of a Joint Investigation).
- 9.5. A Joint Investigation process will be enabled.
- 9.6. Suppliers will no longer be within the scope of the sub-code in Scotland.

Proposed regional differences and changes to D1

9.7. None.

Specific views sought on OC10

9.8. Views are sought on all of the drafting in OC10 and on whether Suppliers in Scotland should be included in the scope of GBGC10 with respect to providing information on actions relating to Load Management Blocks.

10. OC12 - System Tests

Overview of GBGC OC12

10.1. GBGC OC12 provides for System Tests which are tests of unusual or extreme conditions on the Total System.

Summary of analysis of changes from EWGC OC12 to GBGC OC12

10.2. None.

Summary of analysis of changes from SGC OC10 to GBGC OC12

10.3. In the SGC 4.4.3 failure to respond to a Test Proposal is taken as approval for a System Test to proceed. In the EWGC, OC12.4.4.4 failure to respond to a Test Proposal prevents the System Test from taking place.

Proposed regional differences and changes to D1

10.4. None.

Specific views sought on OC12

10.5. Views are sought on all of the drafting in OC12.

11. SGC OC3 - Operating Margin

11.1. A comparison table for SGC OC3 has been provided in Appendix 8.

Summary of analysis of changes from SGC OC3 to GBGC

- 11.2. OC3 describes Operating Margin and the different types of reserve which the Company requires.
- 11.3. Generators (and Suppliers where demand reduction is offered for use as Operating Margin) are required to submit response capability data and enable monitoring of the provision of such services. Such data will be dealt with in the Planning Code (PC) of the GBGC.

Appendix 1 - OC1 Demand Forecasts Comparison Table

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.1	OC1.1.1	Provides explanation as to why demand forecasting is undertaken.		
1.2	OC1.1.2	Introductory text. In the Operational Planning Phase: In the SGC, Suppliers provide demand forecasts to the Company. In the EWGC, NGC forecast using forecasts provided by Network Operators, and	See 3.1/OC1.4 below.	
		sometimes, by Generators. Data supplied under the PC is also taken into account.		
1.3	OC1.1.3	Introductory text. In the SGC, Company forecasts in Planning, Programming and Control Phases using information provided by Suppliers and other factors.	See 3.1/OC1.4 below.	
		In the EWGC, NGC forecasts in Programming Phase and Control Phase using information provided by Suppliers, Network Operators and sometimes, by Generators and other factors referred to in OC1.6.1.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.4	OC1.2	SGC provides explanatory text as to purpose of OC1.		
1.5	n/a	In the SGC, Week 52 references shall be taken to include week 53 where relevant.	Suggest EWGC housekeeping change.	
1.6 (and others in SGC)	GC.6.1.1	In both GCs, 'in writing' includes electronic mail.		
n/a	OC1.1.4	In the EWGC, point of connection of the External Interconnection to the Transmission System shall be a Grid Supply Point. Reactive Power Demand includes series reactive losses etc. NGC will obtain lumped network susceptance data etc from Planning Code.		
n/a	OC1.1.5	In the EWGC, data relating to Demand Control should include details relating to MW.		
n/a	OC1.1.6	In the EWGC, data on Demand Control following the Programming Phase and in the Control Phase is dealt with in OC6, other		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		timescales are dealt with in OC1.		
n/a	OC1.1.7	In the EWGC, in OC1 Year 0 means the current Financial Year, Year 1 the next Financial Year etc.		
n/a	OC1.1.8	In the EWGC, provides explanation of 'half hourly basis'.		
n/a	OC1.3	In the EWGC, scope is NGC and Generators, Network Operators and Suppliers.	See 3.1/OC1.4 below.	
2.1	G&D	In the SGC, Demand means Total Demand less demand to be met by Independent Generating Plant. Equivalent in EWGC is in definitions for NGC Demand and National Demand.	In the SGC, forecasts are currently made of Demand where this means 'Total Demand' (not defined) less demand to be met by Independent Generating Plant (which is power stations or generating units not subject to central despatch).	
			In the EWGC, forecasts are made of National Demand and NGC Demand. National Demand is defined as the electricity supplied from grid supply points plus that supplied by embedded large power stations and NGC transmission losses minus the demand taken by station transformers and	

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
			pumped storage units (and does not include any exports on interconnectors). NGC Demand is the electricity supplied from grid supply points plus that supplied by embedded large power stations and NGC transmission losses and exports across interconnectors (and includes demand taken by station transformers and pumped storage units). In the GBGC, forecasts of National Demand and GB Demand (definition as for EWGC's NGC Demand) will include Scotland.	
3.1	OC1.4.1 & OC1.4.2	In the SGC, by week 41, Suppliers will provide a defined set of data to the Company. In the EWGC, by week 28, Network Operators will provide Demand Control and Generators will provide the output of Medium Power Stations.	Change of obligation in Scotland, to Network Operators (including Non-Embedded Customers) and Medium Generators to provide data. Timescales in Scotland will change from week 41 to week 28. Data for hydro plant in Scotland may not be very 'good' at week 28. Note no Medium plant in SHETL area anyway. SGC specifies all IGP, is this data needed for small generators in Scotland. [Note requirement in SGC 4.4 is limited to generators > 5MW which Medium would capture in SPT area.]	Consider generator data
3.2	n/a	In the SGC, the data referred to in 3.1 will be		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		updated at the specified intervals.		
3.3	n/a	In the SGC, the Company will provide Suppliers with forecast data to a specified timetable.	Suppliers will no longer be provided with the day of the annual peak and minimum demand, and the time of peak demand for each month under SGC OC1 3.3. The SO will provide the date and time of the annual minimum and peak demands to Network Operators and Non-Embedded Customers (under PC.A.4.2.2)	
4.1	OC1.5.1	In the SGC, Suppliers and Generators will supply the Company with expected Demand Control and Embedded Independent Generating Plant on a half hourly basis in the period 2 to 8 weeks ahead. In the EWGC, Network Operators and Generators (for Medium Power Stations - where reasonably required by NGC).	EWGC has the 'Planning Phase' as part of the 'Programming Phase'. In Scotland, DCNL set at 5MW being equivalent to the level of information requested for generators (see SGC OC1 4.4) and as equivalent to the level of Customer Demand Management to be notified (see SGC OC4 4.1.6).	Demand Control Notification Level (DCNL)
4.2	OC1.5.2	Same as 4.1/OC1.5.1 but by 12:00 for 2 to 12 days ahead.	As 4.1.	DCNL
4.3	OC1.5.3 &	By 10:00:	As 4.1 for generators.	DCNL
	OC1.5.4	In the SGC, Generators and Suppliers provide data for the next 2 days (3 days on Friday and longer for holidays). In the EWGC Generators provide data for the	Demand Control (and Customer Demand Management) provided for elsewhere in EWGC.	Customer Demand Management Notification Level

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		next day (3 days on Friday, 2 on Saturday and longer for holidays). Network Operators provide Demand Control data under OC6. Suppliers provide Customer Demand Management data under BC1.		(CDMNL)
4.4	OC1.5.5.1	In the SGC, one hour before programmed scheduling time Generators provide schedules for the operation of Embedded IGP (> 5MW and not centrally despatched) and Suppliers provide schedules for the use of demand control. In the EWGC, under OC6 Network Operators provide proposed Demand Control planned after 1000 and any changes to earlier	No generator info in OC1 in EWGC. Covered by Physical Notification data in BC1.4.2.	DCNL
		notifications. Suppliers shall notify any Customer Demand Management planned to occur in the Control Phase.		
n/a	OC1.5.5.2	In the EWGC, Suppliers provide Customer Demand Management data.		CDMNL
4.5	OC1.5.6	In the SGC, Suppliers provide by 0600 active and reactive output for Embedded Independent Generating Plant and Demand Control for the previous day. In the EWGC, Network Operators provide		DCNL CDMNL

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		Demand Control data for previous day. Suppliers provide Customer Demand Management, by 0600 for active power, 1000 reactive.		
5.1	OC1.6.1	In both codes, specifies factors to be taken into account by the Company/NGC in demand forecasting.		DCNL CDMNL
		The SGC has Independent Generating Plant Schedules and other info provided by Suppliers.		
		The EWGC has other info supplied by Users, pumped storage demand, sensitivity of demand to market prices and BM Unit data submitted under BC1 and BC2.		
5.2	OC1.6.2	Explains that the Company/NGC, will forecast demand using factors in 5.1/OC1.6.1.		
5.3	n/a	In the SGC, the Company's responsibility will be limited to taking into account info supplied to it and the factors in 5.1.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
n/a	OC1.6.3	In the EWGC, the methodology to produce the National Demand and the NGC Demand will be based on specific factors in OC1.6.1.		

Appendix 2 - OC2 Operational Planning and Data Provision Comparison Table

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.1	OC2.1.1	In both GCs, describes the content of OC2.		
1.2	OC2.1.2(a)	In both GCs, describes Operational Planning.		
1.3	OC2.1.2(b)	In both GCs, describes the 'envelope of opportunity' for taking outages.		
1.4	CUSC 6.15	SGC states that the code sets out data requirements and that the information provided to the Company shall not be revealed to others (except for other transmission licensees under the British Grid Systems Agreement) without the prior written consent of the provider.		
1.5	OC2.1.3	In both GCs, Year 0 means the current calendar year etc.		
1.6	GC.6.1.1	In both GCs, 'in writing' includes electronic mail.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
n/a	OC2.1.4	In the EWGC, with respect to 'Generator's' explains the meaning of 'best estimate'.		
n/a	OC2.1.5	In the EWGC, explains that the Final Generation Outage Programme evolves over time.		
n/a	OC2.1.6	In the EWGC, explains data submission for holiday periods.		
n/a	OC2.1.7	In the EWGC, output usable data for Embedded Large Power Stations and Embedded Gensets must be adjusted by the User to represent the MW at the Grid Supply Point.	This is not done in Scotland where data is presented 'at the station gate'. It is not prescribed in the Grid Code what data the User uses to do this.	
2.1	OC2.2.1(a) & (b)	In both GCs, describes the objective of OC2 to co- ordinate outages to minimise the effect of constraints. In the EWGC, OC2.2.1(b) says there will also need to be harmonisation of outages of Embedded Gensets for outages of Network Operator Systems.	The SGC co-ordinates Centrally Despatched Units. The EWGC coordinates outages of Gensets. The definition of Gensets is equivalent to Centrally Despatched Units with the addition of directly connected units.	
n/a	OC2.2.2	In the EWGC, the objective is also to enable the provision of Surpluses for the Transmission System		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		and System Zones.		
n/a	OC2.2.3	In the EWGC, the objective is also to agree outages of gas cooled reactor plant.	Note appropriate Scottish plant has been added to the definitions which make up Existing Gas Cooled Reactor Plant.	
n/a	OC2.2.4	In the EWGC, sets down that the boundaries of the System Zones will be reviewed by NGC.	The boundaries of the System Zones will need to be considered in the context of GB.	
3.1	OC2.3.1	In the SGC, the scope is the Company, Generators, Suppliers, Directly Connected Customers, SPT/NGC Interconnector Users, Moyle Interconnector Users and Network Operators.	In the EWGC, interconnector information is not requested; NGC make assumptions about interconnector transfers in their planning process.	
		In the EWGC, the scope is NGC and Generators (other than those who only have Embedded Small or Medium Power Stations, Network Operators and Non-Embedded Customers.		
4.1(a)	OC2.4.1.1(a) & (b)	In both codes, describes the interaction between the Company/NGC and Generators.		
4.1(b)	n/a	In the SGC, describes the interaction between the Company and Suppliers with respect to		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		Interconnection transfers and the operation of Load Management Blocks.		
n/a	OC2.4.1.1(c)	In the EWGC, describes the interaction between NGC and Network Operators in respect of Large Embedded Power Stations.		
4.1(c)	OC2.4.1.1(d) & (e)	In both codes, describes the interaction between the Company/NGC and Network Operators and Non-Embedded Customers with respect to Transmission System and User System outages.		
4.1(d) & (e)	n/a	In the SGC, describes the interaction between the Company and Interconnector Users in respect of interconnection transfers.		
4.2	n/a	In the SGC, it may be possible to reduce the administrative burden where output or demand is small.	There are currently defaulting rules in the EWGC for day-ahead data. Changes to the EWGC OC2 currently under consideration, but not yet submitted to the Authority, propose website submission for this data.	Consider
4.3	n/a	In the SGC, planning timescales are annual, quarterly and weekly. Centrally Despatched Generator outages are also dealt with in the		
SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
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		Scheduling and Despatch Codes.		
		In the EWGC, obligations are related to specific week numbers.		
4.4	GC.6.1.1	In the SGC, where a Generator or Supplier has notified that they wish to be represented by a Trading Point, communications will be with the Trading Point.		
		In the EWGC, data and notices are generally referred to from the User.		
5.	OC2.4.1.2	The SGC covers the planning of centrally despatched unit outages. Generators may only undertake outages in accordance with outage programmes produced under OC2 or the SDCs. Outages cannot be withdrawn without the approval of the Company. The Company will meet outage requests where Licence Standards can be met and there is sufficient generation to meet Demand and the Operating Margin. The SGC covers annual planning (para 5.9 for years 2 to 5), quarterly planning (paras 5.10 - 5.15 for up to 6 quarters ahead) and weekly planning (paras 5.16 - 5.24 for up to 8 weeks ahead). In 5.15 (quarterly) and 5.24 (weekly) NRAPM warnings are addressed. In the SGC for annual and quarterly planning purposes Generators provide details about their	The SGC involves Generators and Interconnector Users in the preparation of the outage programme. The EWGC involves Generators and Network Operators but not Interconnector Users. A change was proposed to the definition of Genset in the GBGC, however, Genset is further qualified in OC2 with the use of Embedded Large and non-Embedded Large (eg OC2.4.1.2.1(a)) which would mean the change in definition has no effect in these requirements. In the SGC, OC2 5.19 (b), Load Management Block information is provided by Suppliers. This relates to 'Demand controlled by a Supplier or other party through the means of Radio Teleswitching or by some other means'.	Consider Load Management Block and Interconnector data

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		outage requirements. For weekly planning the Company first provides a forecast of Demand to Generators and Suppliers, and Interconnector capability to Interconnector Users. Then each Generator provides its generation programme, each Supplier its proposed switching of Load Management Blocks and each Interconnector User its indicative power transfers.	There is no equivalent data provision in England and Wales. In the SGC OC2 5.18, the Company provides Interconnection capabilities to Interconnector Users and Interconnector Users provide the Company with proposed transfers of power (5.19).	
		The EWGC covers the planning of Genset outages. This is structured in terms of the Operational Planning Phase OC2.4.1.2.1 (for years 3 to 5), OC2.4.1.2.2 (for years 1 and 2) and OC2.4.1.2.3 (for year 0), the Programming Phase (OC2.4.1.2.4 for 2-7 weeks ahead and 2 - 14 days ahead).		
		In the EWGC, for years 3 to 5, Generators provide provisional Genset outage programmes. NGC provides each Generator with suggested amendments to its outage programme and informs Network Operators of outages which may affect the Network Operator's System.		
		NGC notifies Generators and Network Operators of Surpluses and potential export limitations for the Transmission System and System Zones and Network Operators of Output Useable data on Gensets which affect the Network Operator's System.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
6.	OC2.4.1.3	The SGC covers the planning of Transmission System outages for quarterly and weekly plans. Generators, Directly Connected Customers and Network Operators provide the Company with proposed outages affecting Plant and Apparatus. The data requirements for this are specified in Appendix C. The Company may request of Network Operators (6.10) details of automatic and manual load transfer capability of 10MW or more between Grid Supply Points. The process for discussing and requesting changes to outages is set down. The Company shall indicate where intertripping and emergency measures will be required to support an outage. The EWGC covers the planning of Transmission System outages for years 3 to 5, years 1 and 2, year 0 down to the Programming Phase and the Programming Phase. NGC may request Network Operators to provide details of automatic and manual load transfer capability (OC2.4.1.3.4(c)). NGC will indicate where they may need to use Operational Intertripping or emergency measures to meet Licence Standards (e.g. OC2.4.1.3.5(ii)). There are special provisions in the EWGC about the effect of outages on nuclear Large Power Stations (OC2.4.1.3.5(c)(v)).	The GBGC preserves the existing MW levels for automatic and manual load transfer capability (of 12MW in the EWGC and 10MW in the SGC). In OC2.4.1.3.5(c) (v) of Draft 1 of the GBGC omitted the words 'the System Operator' in the second sentence after 'alternative way, but'.	OC2.4.1.3.4(c)

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
7.	OC2.4.2	Data Requirements:		
		In the SGC, in week 24, Generators (in respect of Centrally Despatched Units) submit generation data in the form set out in Appendices A and B.		
		In the EWGC, in week 24, Generators (in respect of each Genset) submit generator data in the form set out in Appendices 1 and 2.		
		In the EWGC, Network Operators are required to notify NGC of any changes to circuit details called for in PC.A.2.2.1 which will apply on an Operational Day.		
5.15 & 5.24	OC2.4.3	In the EWGC, discusses arrangements for issuing NRAPM warnings to Generators and Network Operators. SGC provisions are in 5.15 and 5.24.		
SDC3 6.1	OC2.4.4 & 2.4.5	In the EWGC, covers Frequency Sensitive Operation of Generators.		
OC3	OC2.4.6	In the EWGC, covers Operating Margins and modifications to relay settings for Low Frequency Relays for Gensets.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
Арр А	Арр 1	Generator performance charts are identical.		
Арр В	Арр 2	In both codes, covers Generation Planning Parameters.	Some differences in terminology, content broadly similar.	
Арр С	n/a	In the SGC, data requirements for the planning of Transmission System outages.		
n/a	Арр 3	In the EWGC, CCGT Module planning matrix.		

Appendix 3 - OC6 Demand Control Comparison Table

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.1	OC6.1.1	In both codes, this OC specifies the provisions to be made to permit the reduction of demand in the event of insufficient generation or overloads on the transmission system.		
1.2	OC6.3.2.3	In both codes, Demand Control can only be carried out by Network Operators or the Company/NGC (in relation to Non- Embedded Customers).		
1.3	OC6.1.2	In both codes, summarises the content of this OC.		
1.4	OC6.1.3	In both codes, states that this OC sets out a system of warnings to give advance notice that Demand Control may be required.		
1.5	GC.6.1.1	In both GCs, 'in writing' includes electronic mail.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
n/a	OC6.1.4	In the EWGC, data relating to Demand Control should include MW details.		
1.6	OC6.1.5 & 6.1.6	In the SGC, states that, so far as possible, Demand Control should not be exercised in respect of Protected Customers (defined as someone who is protected by virtue of statutory provision or guidance issued by Secretary of State).	A similar term was included in the EWGC but was removed in 1993 and replaced by OC6.1.5 and 6.1.6. This was considered by nuclear generators as equivalent protection. It is not known to have affected anyone else.	
2	OC6.2.1	In both codes, sets out the objective of requiring the provision of facilities to enable the Company/NGC to achieve reduction in demand which does not unduly prefer or discriminate against any particular consumer. In the EWGC, also provides for the NGC to be informed of Demand Control employed by Users which does not follow an instruction from NGC.		
3.1	OC6.3.1	In the SGC, applies to Network Operators, Suppliers and to Directly Connected Customers. In the EWGC, applies to Generators and Network Operators and NGC in relation to Non-Embedded Customers.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
3.2	OC6.3.2	In both codes, notes that customers of Suppliers may be affected by Demand Control.		
		In the EWGC, explains why Demand Control is not effected through Suppliers and further notes that commercial arrangements for reduction of demand does not relieve the Network Operator from the Demand Control provisions.		
4.1.1	G&D	In the SGC, defines Customer Demand Management as reducing the supply of electricity to a customer or disconnecting a customer as a commercial arrangement between a Supplier and a Customer.		
4.1.2 to 4.1.5	n/a	In the SGC, provides arrangements for Suppliers to offer their Customer Demand Management to the Company for Demand Control purposes.		
4.1.6 to 4.1.8	BC1.4.2(f)(iv)	In the SGC, provides for Suppliers to notify the Company of all Customer Demand Management ≥ 5MW planned or instructed by the Supplier other		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		than as instructed by the Company.		
4.2.1	OC6.5	In the SGC, provides for Network Operators to enable a 6% reduction of voltage to be imposed following an instruction from the Company.		
4.2.2	n/a	In the SGC, two 3% stages of voltage reduction must be provided which can be applied to all customers, or on an individual GSP basis or on any Group of GSPs specified by the Company.		
4.2.3	OC6.5.1	In the SGC, the Company will issue a Yellow Warning. In the EWGC, in OC6.5.1 NGC will issue a System Warning - High Risk of Demand Reduction.	In the EWGC OC6.5 deals with both demand reduction by voltage reduction and by demand disconnection. The SGC separates these.	
4.2.4	OC6.5.3	In the SGC, Network Operators must comply as soon as possible with these instructions but no longer than 5 minutes after the instruction is given. The instruction will be for up to two voltage		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		reductions of 3%.		
		In the EWGC, voltage reduction parameters are not specified.		
4.2.5	OC6.5.6	In the SGC, the Network Operator must ensure that the voltage remains at the reduced value until instructed to reduce further or restore.		
		In the EWGC, the Network Operator may interchange the customers to whom the Demand reduction has been applied but must maintain the reduction at the specified level.		
4.2.6	OC6.5.7	In the SGC, Network Operators must restore voltage according to instruction without delay.	In the EWGC, restoration procedures must start within 2 minutes. In the SGC this is 'without undue delay'.	
		In the EWGC, Network Operators will restore according to the instructions of NGC and process must begin within 2 minutes of instruction.		
4.2.7	OC6.5.10	NGC/the Company may implement voltage reductions to Non-Embedded Customers.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
4.2.8 to 4.2.10	OC6.4.1/6	In the SGC, each Network Operator will notify the Company of all voltage reductions and restorations not instructed by the Company. In the EWGC, covers the procedure for notification of Demand Control initiated by Network Operators, other than following instruction by NGC.	OC6.4.4 & 5 housekeeping change references to OC 6.4.1.2 - 4 should be 6.4.2-4. See 4.3.14 to 4.3.16 below for Demand Control Notification Level.	Demand Control Notification Level
4.3.1	OC6.3.2.2(a), OC6.5.3(a)	In the SGC, Total Demand (except see right) is arranged in groups of 5% for disconnection. In the EWGC, groups are between 4 and 6% as specified by the Network Operator up to 20% of demand.	The SGC implies that the demand of certain customers can be protected against disconnection.	
4.3.2	OC6.5.3(b)	The groups shall be arranged such that disconnection takes place uniformly across Grid Supply Points.		
4.3.3	OC6.5.3(a)	Four groups of 5% will be available for disconnection without prior notice.		
4.3.4	OC6.5.2	In the SGC, the Company will issue a Red Warning. In the EWGC, NGC will issue a System Warning - Demand Control Imminent.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
4.3.5	OC6.5.3(a)	In the SGC, provided the instruction is for ≤ 10% of demand, Network Operators shall abide by the instructions without delay.	In 4.3.3 SGC has that 20% shall be available, but in 4.3.5 only 10% has to be acted on. EWGC has 20%. However, SGC demand disconnection is preceded by 6% voltage reduction.	
		In the EWGC, up to 20% can be instructed.		
4.3.6	OC6.5.4(a)	In the SGC, more than 10% is available only if the Company has issued a Red Warning by 1600 hours previous day that >10% would be needed.		
		In the EWGC, warning must specify the amount up to 40%. If notice is issued after 1600, Network Operators must provide as much as possible.		
4.3.7	OC6.5.5(b)	In the SGC, the Company can only issue instructions up to the amount requested in the Red Warning.		
		In the EWGC, NGC accepts that it can only expect to receive what was asked for in the notice.		
4.3.8	OC6.5.6	In the SGC, the Network Operator will only reconnect a group when instructed to do so by the Company.		
		In the EWGC, the Network Operator may interchange the customers to whom the		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		Demand reduction has been applied but must maintain the reduction at the specified level until instructed by NGC.		
4.3.11	OC6.5.7	Network Operators shall abide without delay to reconnection instructions.	In the EWGC, restoration procedures must start within 2 minutes. In the SGC 'without delay'.	
4.3.12	OC6.5.8 & OC6.5.6	Where the disconnection will be prolonged NGC/the Company will inform Network Operators.		
4.3.13	OC6.5.10	In the SGC, the Company may disconnect Non-Embedded Customers.		
		In the EWGC, NGC may implement Demand Reduction on Non-Embedded Customers.		
4.3.14 to 4.3.16	OC6.4.1/6	In the SGC, each Network Operator will notify the Company of all demand disconnections not instructed by the Company.	In GBGC D1, Demand Control Notification Level was introduced. The SGC does not give any trigger MW level for notification of disconnection but 5 MW has been proposed (see OC1).	Demand Control Notification Level
		In the EWGC, covers the procedure for notification of Demand Control initiated by Network Operators, other than following instruction by NGC.		
4.4.1	OC6.6.1	In the SGC, each Network Operator with	SGC has 40% to be available on automatic	Consider regional

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		a Customer demand > 10MW will arrange for low frequency demand disconnection in stages by tripping relays of ≥ 40% of Total Demand.	disconnection, EWGC has 60%.	difference in automatic low frequency demand disconnection
		In the EWGC, each Network Operator will arrange for automatic low frequency disconnection of \geq 60% of demand.		
4.4.2	OC6.6.2	In the SGC, the demand will be split into discrete blocks to be agreed with the Company as part of the Connection Conditions. In the EWGC, NGC reviews the requirements annually with the Network Operator and the Network Operator provides details of what is available by week 24.	In the British Grid System Agreement (BGSA) there is a table of numbers relating to the Application of Low Frequency Disconnection as arranged by NGC, SP and SSE. As the BGSA is not expected to endure, GCEG have raised whether this information could be included in the GBGC or the Seven Year Statement?	
4.4.3	OC6.6.3	The Company/NGC may instruct manual load disconnection so that automatically disconnected load can be restored to provide future protection against further frequency falls.		
4.4.4	OC6.6.4	The Network Operator will not reconnect until instructed by the Company/NGC.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
4.4.5	OC6.6.5	Network Operators must reconnect without delay on instruction by the Company/NGC.	In the EWGC, Network Operators must comply within 2 minutes. In the SGC 'without delay'.	
4.4.6	OC6.6.6	In the SGC, Non-Embedded Customers of <10MW may be required to provide automatic low frequency disconnection.	EWGC implies all Non-Embedded Customers must have automatic low frequency disconnection.	
		In the EWGC, Non-Embedded Customers must provide automatic low frequency disconnection (part of the Bilateral Agreement).		
4.4.7	OC6.6.7	In both codes, Generators who wish to install low frequency protection must agree this with the Company/NGC. Embedded plant must agree this with the Network Operator who will need to agree with the Company/notify NGC.		
n/a	OC6.6.8/9	In the EWGC, NGC will be notified of the volume of low frequency demand disconnection.		
n/a	OC6.6.10	In the EWGC, a User does not need to provide low frequency demand disconnection if it is providing a higher level of service under an ancillary service		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		agreement.		
4.5.1	OC6.7.1	In both codes, each Network Operator will make arrangements to enable it to disconnect Customers under emergency conditions.	The EWGC specifies within 30 minutes.	
		The EWGC specifies within 30 minutes.		
4.5.2	OC6.7.2	In both codes, Network Operators will provide information on the demand disconnection available.	The requirement for 20% on each GSP may be difficult in Scotland where the GSP may in effect comprise only one 'bulk supply point'.	Consider 20% on each GSP requirement
		In the EWGC, the information should include, the 20% of demand to be reduced on instruction under OC6.5.		
4.5.3	OC6.7.3	In both codes, each Network Operator will comply with instructions without delay.		
n/a	OC6.7.4	In the EWGC, NGC shall notify Network Operators of the event requiring the demand disconnection.		
4.5.4	OC6.7.5	In both codes, Network Operators will only reconnect on instruction by the Company/NGC.		
4.5.5	OC6.7.6	In both codes, Network Operators will	The EWGC specifies within 2 minutes.	

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		abide by the instructions without delay. In the EWGC within 2 minutes.		
4.5.6	OC6.7.7	In both codes, the Company/NGC may disconnect Non-Embedded Customers.		
4.5.7	OC6.7.8	In both codes, if the emergency manual disconnection is inadequate the Company/NGC can manually disconnect Network Operators and Non-Embedded Customers.		
n/a	OC6.7.9	In the EWGC, under OC1.5.6 Network Operators will provide details on the amount of demand reduction.		
4.6	OC7.4.8.4/10	In both codes, describes the warning system.	EWGC System Warnings are different to those in the SGC.	
n/a	OC6.8	In the EWGC, describes operation of the Balancing Mechanism during Demand Control.		

Appendix 4 - OC7 Operational Liaison Comparison Table

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.1/2	OC7.1.1	In both codes, sets out the requirements for the exchange of information in relation to Operations and Events on the system. The SGC describes Amber Warnings. The EWGC describes NGC System Warnings.		
n/a	OC7.1.2	In the EWGC, allows NGC to pass on information provided to it by a User on an Event.		
n/a	OC7.1.3	In the EWGC, information provided by a User can be passed onto an Externally Interconnected System Operator.		
n/a	OC7.1.4	In the EWGC, states that this OC also deals with Integral Equipment Tests.		
2	OC7.2.1/3	In both codes, states that this OC is to provide for an exchange of information so that the implications of Operations and Events can be considered to maintain the integrity of the System. The EWGC contains further objectives to provide for System Warnings and Integral Equipment Tests.		
3	OC7.3.1	In the SGC, scope applies to the Company Generators, Network		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		Operators, Directly Connected Customers and Customers with Customer Generation Plant.		
		In the EWGC, scope applies to NGC and Generators (other than those which only have Embedded Small or Medium Power stations), Network Operators, Non-Embedded Customers, Suppliers and Externally Interconnected System Operators.		
4.1.1	OC7.4.1	In both codes, defines Operation.		
4.1.2	OC7.4.2	In both codes, defines Event.		
4.1.3	OC7.4.3	In both codes, defines Operational Effect.		
n/a	OC7.4.4	In the EWGC, references to a User's System shall not include Embedded Small or Medium Power Stations unless otherwise stated.		
4.2.1	OC7.4.5.1	In both codes, the Company/NGC will notify Users of an Operation which may have an Operational Effect on a User.		
4.2.2	OC7.4.5.2	In both codes, a User is required to notify the Company/NGC of an Operation on a User System that may affect the Transmission System and		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		the Company/NGC will notify other Users which may be affected.		
4.2.3	OC7.4.5.3	In both codes, examples of situations which may have an Operational Effect.		
n/a	OC7.4.5.4	In the EWGC, an Operation caused by another Operation or Event has different notifications (see 7.4.5.6)		
4.2.4	OC7.4.5.5	In both codes, discusses the form of the notification.		
n/a	OC7.4.5.6/10	In the EWGC, process and rights to pass information for an Operation.		
4.2.5	OC7.4.5.12 & OC7.4.5.11	In both codes, notification of an Operation will be given as far in advance as practicable. The notification of the Operation will be written down and dictated back if requested.		
4.3.1	OC7.4.6.1	In both codes, in the case of an Event on the Transmission System, the Company/NGC will notify Users.		
4.3.2	OC7.4.6.2	In both codes, in the case of an Event on a User System, the User will notify the Company/NGC.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
n/a	OC7.4.6.3	In the EWGC, where the Event is caused by another Event or Operation, notification is different (see 7.4.6.7).		
n/a	OC7.4.6.4	In the EWGC, NGC or a User can enquire if events have occurred.		
4.3.3	OC7.4.6.5	In both codes, examples of situations where Events need to be notified.		
4.3.4	OC7.4.6.6	In both codes, discusses the form of the notification of the Event.		
n/a	OC7.4.6.7/12	In the EWGC, process and rights to pass information for an Event.		
4.3.5	OC7.4.6.13	In both codes, the notification of the Event will be written down and dictated back if requested.		
4.3.6	OC7.4.6.14	In both codes, notification of an Event will be given as far in advance as practicable.		
4.4	n/a	In the SGC, where a Connected System is under the control of the Company then the requirements of this OC shall apply as if the Connected System was the Transmission System.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
4.5.1	OC7.4.7.1 & 7.4.7.3	In both codes, where a User, notifies an Event which is considered significant, Users must report the event in accordance with SGC OC8 (EWGC OC10). The event will be known as a Significant Incident.		
n/a	OC7.4.7.2	In the EWGC, the User can require NGC to report an Event as a Significant Incident.		
4.5.2	OC7.4.7.4	In both codes, examples of Significant Incidents.		
4.6	OC7.4.8	In the SGC, describes Amber Warnings. In the EWGC, describes all System Warnings and associated matters.	Proposed that GBGC System Warnings will be based on the EWGC.	
SDC2 4.8.5	OC7.5	In both codes, covers procedures in relation to Integral Equipment Tests.	The EWGC provisions are significantly longer.	

Appendix 5 - OC9 Contingency Planning Comparison Table

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.1	OC9.1.1 & OC9.2.1	In both codes, describes that this OC deals with Black Starts.		
1.2	OC9.1.2 & OC9.2.2	In both codes, describes that this OC deals with the re-synchronisation of parts of the system which have become out of synchronism.		
1.3	OC9.1.3 & OC9.2.3	In both codes, describes that this code provides for a Joint System Incident Procedure to be established between Users and the Company/NGC at senior management level.		
n/a	OC9.1.4	In the EWGC, describes civil emergency provisions.		
2	OC9.3.1/2	In the SGC, scope is the Company and Generators, Network Operators, Suppliers, Directly Connected Customers and Customers with Customer Generation Plant. In the EWGC, scope is NGC, Generators,	There is no equivalent definition to Customers with Customer Generation Plant in the EWGC. This entity would be a Supplier BM Unit. Suppliers are not included in the EWGC scope, but they are not referred to explicitly in the SGC, only through provisions which	

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		Network Operators and Non-Embedded Customers.	apply to Users.	•
3.1	OC9.4.1	In both codes, describes a Total Shutdown.		
3.2	OC9.4.2	In both codes, describes a partial shutdown.		
3.3	OC9.4.3 & OC9.4.4	In both codes, states that Licence Standards may not apply. In the SGC, normal schedule and despatch procedures may not apply. In the EWGC, it may be necessary for NGC to issue emergency instructions and depart from normal BM operation.		
3.4	OC9.4.5.1	In both codes, describes a Black Start Generator/Capability.		
n/a	OC9.4.5.2	In the EWGC, provides for a Local Joint Restoration Plan to be produced by NGC, the Generator, and Network Operator.	Local Joint Restoration Plans will need to be created for Scotland (see OC9.4.7.11 for establishment of a Local Joint Restoration Plan).	

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
3.5	OC9.4.6	The Company/NGC will notify Users of partial or total shutdown and the intention to implement a black start procedure.		
3.6.1	OC9.4.7.1	In both codes, similar description of Black Start procedure.		
3.6.2	OC9.4.7.2	In both codes, describes the need for flexible procedures, establishment of power islands leading to the reestablishment of the total system.		
3.6.3	OC9.4.7.3	The procedure for a black start shall be that specified by the Company/NGC.		
3.6.4	OC9.4.7.3	Describes what the Company's/NGC's instructions may be.		
n/a	OC9.4.7.4	In the EWGC, instructions will be in the format for emergency instructions. If a genset cannot keep within its safe operating parameters NGC will try to alleviate the problem.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
3.6.5	OC9.4.7.5	Network Operators with embedded power stations will comply with the Company/NGC's instruction to restore local demand.		
3.6.6	OC9.4.7.6	In the SGC, process for start-up of a Black Start Generator and the creation of a Power Island. In the EWGC, describes the black start process and the role of the Local Joint Restoration Plan.		
3.6.7	OC9.4.7.7	The Company/NGC will instruct the connection of Power Islands to achieve the reestablishment of the Total System.		
n/a	OC9.4.7.8	In the EWGC, a Network Operator that has established a Power Island within its User System will only resynchronise to the Transmission System with the agreement of NGC.		
3.7	OC9.4.7.9	The Company/NGC will determine when the Black Start situation no longer exists.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
n/a	OC9.4.7.10 (& OC9.5.5)	In the EWGC, if an Externally Interconnected System is disconnected, NGC will determine when it can be reconnected.		
n/a	OC9.4.7.11	In the EWGC, sets out the establishment of a Local Joint Restoration Plan.		
4	OC9.5.1(a)	The Company/NGC will instruct generation and demand to regulate to enable de-synchronised islands to be re-synchronised.		
n/a	OC9.5.1(b)/(d) & OC9.5.2/4	In the EWGC, deals with Embedded Generation in De-Synchronised Islands. Describes the establishment of a De-Synchronised Island Procedure.		
5	OC9.6	In both codes, describes the Joint System Incident Procedure.		
5.1	OC9.6.1	In both codes, describes a Joint System Incident. In the EWGC, excludes events occurring on an		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		Embedded Small or Medium Power Station.		
5.2	OC9.6.2	In both codes, Users and the Company/NGC will provide telephone numbers of management representatives. In the EWGC, in accordance with timing in the Bilateral Agreement.		
5.3	n/a	In the SGC, on the occurrence of an Event pursuant to SGC OC5, the User will inform the Company accordingly and other Users or the Company will inform the Users who may be affected.		
5.4	OC9.6.3	In the SGC, the Company may phone the User to obtain additional information.		
		In the EWGC, NGC may phone the User (or vice versa) to obtain additional information.		
5.5	OC9.6.4	In the SGC, the Company will determine whether the Event is a Joint System Incident and whether to set up a Transmission System Incident Centre.		
		In the EWGC, NGC or the User will determine whether or not the Event is a Joint System		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		Incident and whether to set up an Incident Centre.		
5.6	OC9.6.5/6	In the SGC, the Company shall notify that a Transmission System Incident Centre has been established. In the EWGC, NGC and the User shall notify if an Incident Centre has been established.		
5.7	OC9.6.7/9	In the SGC, all communications between senior management will be via the Transmission System Incident Centre. In the EWGC, the Incident Centre will not assume responsibility for the operation of the system but will be the focal point for communication.		
n/a	OC9.6.10/11	In the EWGC, NGC or the User will decide when the Incident Centre is no longer needed.		

Appendix 6 - OC10 Event Information Supply (SGC Operational Event Reporting and Information Supply) Comparison Table

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.1	OC10.1	In both codes, describes that this OC sets out the requirements for reporting on Significant Incidents reported under SGC OC5 and EWGC OC7.		
		In the SGC, the provision to the Company of information to enable it to prepare appraisal of the system and analysis of equipment performance.		
		In the EWGC, the mechanism for the joint investigation of a significant incident.		
1.2	GC.6.1.1	In both GCs, 'in writing' includes electronic mail.		
2	OC10.2	In the SGC, the objective is to facilitate the provision of information so that the transmission system is operated in accordance with the SGC and the assessment of effectiveness of policies adopted in the SGC.		
		In the EWGC, the objective is to facilitate the provision of more detailed information with respect to Significant Incidents.		
3	OC10.3	In the SGC, scope is the Company and Generators, Network Operators, Suppliers, Directly Connected Customers and Customers with Customer Generation Plant.	May be a need to include Suppliers in	Consider Suppliers providing

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		In the EWGC, scope is NGC, Generators (other than those which only have Embedded Small or Medium Power stations), Network Operators and Non- Embedded Customers.	respect of Load Management Blocks	information
4.1.1	OC10.4.1.1	In the SGC, in the case of a Significant Incident the User will give a written report to the Company. The Company will not pass on this report to other Users.		
		In the EWGC, as SGC but NGC may use the information in the User report in writing a report for another User.		
n/a	OC10.4.1.2	In the EWGC, in the case of an Event initially reported by NGC, NGC will give the User a written report and the User will not pass on the report but a Network Operator or Generator may use the information therein in preparing its own report on the incident.		
4.1.2	OC10.4.1.3	In both codes, describes the form of the report and specifies the minimum content in an appendix.		
4.1.3	OC10.4.1.4	In both codes, timing of the report shall be within two hours on the incident. In the EWGC, or as soon as reasonably practical thereafter.		
4.2	n/a	In the SGC, provides for Users to provide the Company with information for various reporting and analysis. An indication of the type of data that may be requested is		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		given in Appendix B.		
n/a	OC10.4.2	In the EWGC, sets out the process for a joint investigation		

Appendix 7 - OC12 System Tests Comparison Table

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.1	OC12.1	In both codes, describes System Tests.		
1.2	OC12.2	In both codes, describes that the OC deals with responsibilities in System Tests and in the EWGC notes that they may affect the System of an Externally Interconnected System Operator.		
2	OC12.2	In both codes, the objective is to ensure that System Tests carried out by a User or the Company/NGC are conducted safely and have minimum effect on the system.		
3	OC12.3	In the SGC, scope is the Company and all Users (Generators, Network Operators, Suppliers, Directly Connected Customers and Customers with Customer Generation Plant). In the EWGC, scope is NGC, Generators, Network Operators and Non-Embedded Customers.		
4.1.1	OC12.4.1.1	In both codes, the User must submit a Proposal		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
		Notice 12 months in advance of the proposed test.		
4.1.2	OC12.4.1.2	In both codes, the Proposal notice will be in writing and include details of the proposed tests.		
4.1.3	OC12.4.1.3	In both codes, the Company/NGC can request further details from the Test Proposer.		
4.1.4	n/a	In the SGC, A Proposal Notice shall be sent to the Company or relevant User in accordance with the General Conditions.	Nothing specific in the SGC General Conditions about Proposal Notices (must either refer to 'Communication between the Company and Users' or Miscellaneous/Data and Notices.	
4.1.5	12.4.1.4/5	In both codes, describes procedures if it is the Company which requests the test.		
4.2.1	OC12.4.2.1	In both codes, describes treatment of externally interconnected system operator and if the EISO does not wish the test to take place then the test will not take place.		
4.2.2	OC12.4.2.2	In both codes, sets out the procedure for the appointment of a Test Co-ordinator.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
4.2.3	OC12.4.2.3	In both codes, sets out the procedure for notification of the test and establishment of the Test Panel.		
4.2.4	OC12.4.2.4	In both codes, procedure for sending the Preliminary Notice.		
4.2.5	OC12.4.2.5	In both codes, replies to be a member of the Test Panel must be received within one month. In the EWGC, if the Test Proposer does not reply within one month the test will not go ahead.		
4.2.6	OC12.4.2.6	In both codes, notification of the composition of the Test Panel.		
4.3.1	OC12.4.3.1	In both codes, the Test Panel will meet within one month of appointment.		
4.3.2	OC12.4.3.2	In both codes, describes what the Test Panel will consider.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
4.3.3	OC12.4.4.2	In both codes, if the Test Panel cannot agree on any decision in preparing the Proposal Report the System Test will not take place.		
4.3.3	OC12.4.3.3	In the EWGC, Users shall be required to provide the Test Panel with information.		
4.3.4	OC12.4.3.4	In both codes, the Test Panel shall meet as often as the Test Co-ordinator deems necessary.		
4.4	OC12.4.4	In both codes, sets out the procedure for preparation and approval of the Proposal Report.	In the SGC 4.4.3 failure to respond to a Test Proposal is taken as approval. In the EWGC, OC12.4.4.4 failure to respond to a Test Proposal prevents the System Test from taking place.	
4.5	OC12.4.5	In both codes, sets out the procedure for establishing the Test Programme and conducting the System Test.		
4.6	OC12.4.6	In both codes, sets out the procedures for the Final Report.		
4.7	OC12.4.7.1	In both codes, sets out the proposals where a test		
SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
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		is needed in less than 12 months' notice.		

Appendix 8 - SGC OC3 Operating Margin Comparison Table

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
1.1	BC1.5.4	In the SGC, sets out the procedure for specifying the amount of generating capacity that must be provided in the Programming and Control Phases so that the risk of failure of meeting demand is within specified levels. In the EWGC, NGC monitor Operating Margin and issues warnings when the level of System Margin is inadequate.		
1.2	CC.8.1, CC.6.3 & BC3	In the SGC, sets out the different types of reserve which the Company requires in the Programming and Control Phases. In the EWGC, frequency response is covered in CC.8.1 (ancillary services), CC.6.3 (in particular CC.6.3.7) and BC3.		
2.1	n/a	In the SGC, the objective is to ensure there is sufficient generation to deal with forecast demand and generation availability not being as expected and to ensure there is sufficient frequency response.		
3.1	n/a	In the SGC, the scope is Generators which are subject to central despatch and Suppliers (where Demand reduction is offered for use as Operating Reserve or Contingency Reserve.		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
4.1	G&D	In both codes, Operating Margin comprises Operating Reserve and Contingency Reserve.		
4.1.1	G&D, CC.8, CC.A.3.1 and BC1.5.4(b)	In the SGC, describes that Operating Reserve has three categories: Primary Response, Secondary Reserve and Five Minute Reserve. The amount of Operating Reserve to be held will be determined by an allocation formulae set out in the British Grid Systems Agreement. In the EWGC, defines Operating Reserve as the additional output available from Large Power Stations or reductions is demand which can contribute to containing and correcting a fall in frequency. The categories of frequency response are defined in CC.A.3.1. The amount of Operating Reserve is set by NGC as described in BC1.5.4(b).	In the EWGC, Frequency Control is mainly provided by Ancillary Services (see BC3.1.2). These are specified in the Connection Conditions (CC.8) and BC3; Ancillary Service instructions are described in BC2.A.2.	
4.1.2	G&D and BC1.5.4(a)	In both codes, defines that Contingency Reserve is reserve over and above Operating Reserve allocated to cover generation shortfalls, demand estimation errors and instantaneous demand (as compared to half-hour demand).		
		In the SGC, the amount of Contingency Reserve is determined by the Company.		
		In the EWGC, the amount of Contingency Reserve is set by NGC as described in BC1.5.4(a).		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
4.2 & 4.4	BC1.5.4(a) and (b)	In the SGC, describes that Operating Margin is provided by a mix of thermal, pumped storage and gas turbine generating plant and demand reduction.		
		In the EWGC, allocation of Operating Margin is described in BC1.5.4(a) and (b).		
5.	OC5	In the SGC, providers of Operating Reserve and Contingency Reserve are required to establish procedures for demonstrating that contractual requirements are being met.		
		In the EWGC, OC5 covers the testing and monitoring of compliance with the Grid Code and the provision of Ancillary Services.		
6.	BC2.8 and BC3	In the SGC, states that utilisation of Operating Margin is effected in the Scheduling and Despatch Code.		
		In the EWGC, BC2.8 and BC3 cover the use of Ancillary Services and the Frequency control process.		
7.	PC.A.5.3 and PC.A.5.4	In the SGC, defines the response capability data required for Centrally Despatched Generation Units in week 24.		
Арр	PC.A.5.3 and	In both codes, sets out the format for Response Capability		

SGC ref	EWGC/GBGC equiv	Provisions	Comment	Regional difference required
А	PC.A.5.4	Data.		