National Grid Transco

Response to the Ofgem/DTI Consultation Document: The Grid Code under BETTA May 2004, (and subsequent mini consultation dated 26 May).

Introduction

1. We welcome the opportunity to comment on "The Grid Code under BETTA – Ofgem/DTI conclusions and second consultation on the text of a GB Grid Code and conclusions on change management between the STC and each of the GB CUSC, GB BSC and GB Grid Code – May 2004' (the consultation). We have also included in this single response comments on the subsequent mini consultation dated 26th May.

2. This response is divided into several sections that follow the structure of the Ofgem / DTI consultation. These sections broadly cover the following areas:

   - Issues raised in connection with change management between STC and User facing Codes.
   - Conclusion and Ofgem / DTI views on issues raised in previous consultations.
   - Applicability of changes to the existing Grid Codes.
   - Issues raised by Ofgem and general comments on the proposed GB Grid Code text.
   - Response to the 'additional issues' mini consultation, dated 26 May 2004.
   - Other issues.
   - Conclusion and review of further work impacting on the GB Grid Code.
   - Appendix 1 – Detailed drafting based on our comments and initial consistency checking.

Background

3. This consultation is the third on the Grid Code under BETTA, and the second to contain legal text. As Ofgem/ DTI has highlighted this legal text was prepared by us on behalf of Ofgem/ DTI and under their direction. Therefore the legal text does not necessarily represent our own views, and should be read in this context. Our response to this consultation has been written independently of Ofgem/ DTI and reflects the views of National Grid.

Change management between the STC and the GB Grid Code and between the STC and user-facing industry codes

4. We agree that the change processes set out in user-facing codes and the change processes set out in the STC should contain measures such that adequate cross-code impact assessment and change coordination takes place. We also agree that the CUSC and BSC change coordination requirements should be rolled forward in to the GB CUSC and GB BSC and extended to cover the STC.

5. We agree that there should be working relationships with the STC Committee to deal with consequential changes. In terms of the actual drafting we are

concerned that GC4.6 places obligations on the GCRP that it is not fully able to carry out and obligations which, given the governance arrangements for the Grid Code could only rest with NGC. Therefore we suggest that the wording of GC4.6 be amended.

6. In previous consultations we have expressed the view that NGC should have the Licence obligations for coordinating the amendments as it has the appropriate influence on the relevant Panels and Committees. We still believe this approach would represent the most efficient way forward.

Conclusion and Ofgem / DTI views on issues raised in previous consultations

7. We agree with the conclusion on the composition of the Grid Code Review Panel, including that the TOs should be represented.

8. We note the approach to dealing with Licence exempt generators will be the subject of a further consultation in June 2004. Where NGC is not given the contractual framework to enable it to 'have in force' the GB Grid Code we would expect Ofgem to deal with this in the Transmission Licence, relevant Codes and core industry documents rather than by derogation. We look forward to commenting on the follow up consultation in due course.

9. We believe the obligations in the STC for TOs to comply directly with OC8, along with the re-drafting to OC8 in terms of separate procedures for Scotland in OC8A2 are a reasonable way forward. Providing Licensees and Users work together to ensure adequate training is given we are comfortable with this approach.

10. In Appendix 1 we have provided drafting comments to OC8 and GC13. The proposals must be seen s a package and are intended to clarify to Users both the position in practice and the legal position. Without these changes we do not believe that the correct position in respect of the wider contractual framework can be reached.

11. In addition, consideration needs to be given to how safety would be co-ordinated across the England and Wales and Scottish border, in particular, whether OC8A1 or OC8A2 would apply.

12. We believe the establishment of a 'multilateral safety framework' would introduce far greater changes for Users and Licensees than that being put forward by Ofgem / DTI for BETTA. Introducing additional agreements, with a further set of operational arrangements and more complex governance arrangements should be avoided.

Applicability of changes to the existing Grid Codes

13. We agree with the conclusion that all of the changes that have been implemented in the England and Wales Grid Code should be included in the GB Grid Code and that the change to the Scottish Grid Code should have no affect on the GB Grid Code. In terms of K/03 we note new standards will need to be agreed as applicable for Scotland.

14. We believe that the proposed changes that Ofgem are considering in terms of the England and Wales Grid Code, F/03, E/03 and A/04 should be included in the GB Grid Code.

15. In terms of E/03 (CC6.3.3), the basic requirements are similar to the Scottish Grid Code so the proposed changes should have no additional impact. The A/04 change relates to the market arrangements in England and Wales and is required to enable the Seven Year Statement to use contracted data.

16. Based on the responses to F/03 (OC2 clarification of processes) we have been led to understand this may have an impact on some Scottish Users. We have also undertaken a further consultation in relation to OC2, E/04 (incorrectly identified as F/04 in the Ofgem consultation), that should be with the Authority shortly, this should be considered along with F/03. Obviously, there will be process changes in implementing these as the current Scottish process is different to that in England and Wales. We believe that both of these changes should be implemented GB wide.

17. In terms of the proposed changes for non-synchronous generating plant the proposals submitted by NGC will reflect the structure of the GB Grid Code and are intended to be consistent, wherever possible, with the Scottish proposals. Therefore it would be more appropriate to include the England and Wales proposals in to the GB Grid Code. This would also require the regional differences, such as the definition of 'cluster', that have been included in the draft GB Grid Code in relation to Wind technology to be removed.

18. We believe that both of the outstanding consultations in England and Wales, D/04 and C/04, are appropriate to apply GB wide.

19. NGC will be shortly be submitting a report to the Authority on OC1, based on consultation G/03. A user, who is also represented in Scotland, raised some issues and NGC has had further discussions with that user in order to understand their concerns and to explain more fully our view. These views are currently being incorporating in the report to the Authority. The proposed OC1 changes are merely a clarification of existing processes and should therefore be included in GB Grid Code. This is discussed further in paragraph 42 of this response.

Response to the issues raised Ofgem/ DTI Consultation Document on the proposed GB Grid Code text

20. In this section we respond where views have been invited. Detailed drafting comments are contained in Appendix 1 to this response. Where no comment has been made we agree with the Ofgem / DTI conclusions and / or look forward to reviewing further proposals.

Glossary and Definitions

21. We would agree that clarification of 'Area Managers' would be useful. In terms of the Grid Code the only duty an Area Manager carries out is to sign the Site Responsibility Schedules on behalf of NGC. We note further work is being carried out in DG1 as to who would actually sign the Site Responsibility Schedules: NGT, TO and Users or just the TO and Users. It is our understanding that the Area Manager could be an employee of the Relevant Transmission Licensee, although this depends on the final STC drafting.

22. In considering the proposed role of the Relevant Transmission Licensees in terms of Site Responsibility Schedules, to sign as well as NGC or on behalf of

NGC under the STC, we have suggested changes to the definition of Area Manager and Responsible Manager. Area Manager should be deleted and the definition of Responsible Manager be used in its place. Linked with this, the definition of Responsible Manager needs to recognise it could be a person nominated by NGC. The references to Area Manager in the main body of the Grid Code would also require changing.

23. In terms of Interconnector Agreements, we believe that the definition should be expanded to include all persons responsible for an Interconnector. The current definition excludes the asset owner, who would be expected to sign the CUSC and comply with any provisions in the Grid Code. By their nature and number Interconnectors are very different in design and therefore Interconnector Agreements are often used to specify equivalent requirements to those in the Grid Code.

Planning Code

24. We note that Section 6 of the Planning Code has been changed so that NGC has an obligation to apply the Licence Standards relevant to planning and development to the GB Transmission System, but shall also procure this is done in Scotland.

25. Previously, in the England and Wales Grid Code, PC6.1 was consistent with NGCs Licence obligations. The proposed GB Grid Code wording does not appear to be consistent with NGC's proposed GB Licence conditions in Scotland which are to “co-ordinate and direct the flow of electricity onto and over the GB transmission system”.

26. NGC cannot carry out the planning and development function for GB as a whole. This issue also does not appear to be covered in the STC drafting that is being consulted on. If these statements are retained within the Grid Code then the consequence will be that significant changes to the STC will be required, and changes may also be required to licence conditions relating to the “security and quality of supply standards”.

27. Overall, given that PC6 is covered through Transmission Licence obligations, it may be more appropriate to remove this section from the Grid Code. This would also require the licence obligation for the Grid Code to be reconsidered.

28. In terms of process, we do not understand why the normal BETTA philosophy that NGC is the primary contact with Users, has not been applied in PC6.2.

29. We note the approach on confidentiality, and confirm our preference for general clauses in the licence, STC and CUSC and look forward to reviewing Ofgem / DTI final proposals referred to in 6.27 of the consultation.

30. We believe the planning standards in appendix C split in to two main areas, those with obligations on the Licensees and those with obligations on Users. Clearly those with obligations on Users should form part on the GES framework of agreements. Those that only contain obligations on the licenses are in force through the licensee’s licence.

31. We refer back to the comments above with regard to NGC having a contractual requirement, PC6.1, to comply with these standards, although the regulated Licensee is required to have them in force by the Authority and the Authority can

grant derogations from them without NGCs agreement. Clearly, this places NGC in the position that it must also request a derogation from the Authority. Therefore any contractual rights the users believe they have in respect of NGC complying with such standards are at the discretion of Ofgem.

32. We believe that in the interests of transparency the listed standards should be made publicly available.

Connection Conditions

33. Relevant Transmission Licensees are not directly obliged to comply with CC5.2 (g) or the duplicated wording in OC8A2, therefore equivalent drafting in the STC is required. We also suggest the duplication is not required, recommending the regional difference be addressed in OC8A2 only. In terms of the STC back off, Section G 2 of the STC appears the appropriate place for the obligation to rest.

34. We look forward to reviewing the STC drafting in respect of CC6.2.2.4 and CC6.2.2.5, requirements for work on protection equipment.

35. We note that the provisions in CC7.2 are still to be 'backed off' in the STC. Given the development of OC8 and related provisions it may be more appropriate to refer directly to the Relevant Transmission Licensees in CC7.2 and in the STC (section G2) require compliance by the Transmission Owner.

Operating Codes

36. In terms of the comment in 6.66 of the consultation, we were confused by the interpretation of a respondent that a Network Operator would be required to send information to NGC in relation to directly connected units. We agree there are a few areas where OC1 deals with Medium Power Stations and these could be confused with OC2 requirements. We cover this point in more detail below in our response to the mini-consultation.

37. We believe, in the interests of clarity only, that OC7 may benefit from an explanation of the interface arrangements in the STC. Clearly, the Users will need to interface directly with the Relevant Transmission Licensee in real time.

38. Ofgem / DTI have made significant changes to OC8 in response to respondents comments and those of the Licensees in further discussions. We can confirm that, subject to a final review of all the areas covering Safety Co-ordination, that NGC are comfortable with the new revised direct approach to Safety Co-ordination in the Grid Code and STC.

39. We believe the drafting of OC8A2.1.7.2(3) (ii) is adequate to cover the existing term, 'where reasonably practical', in the SGC. Clearly, if the Safety Rules allow for 'where reasonably practical' then the GB GC covers this point, if the Safety Rules do not cover this then it should not take place and the GB Grid Code should be changed accordingly.

40. We look forward to working with Ofgem / DTI, Licensee and other Users in considering the other issues raised in this consultation in respect of OC8.

41. In terms of the definition of High Voltage it may, subject to further discussion, be more appropriate to change the GB Grid Code to that used in the Scottish Grid Code. We would be happy to investigate this issue further and discuss with

Ofgem / DTI. At this stage it may be better to include a regional difference, noting that the Panel have an obligation to minimise regional differences.

42. It is our understanding that discussion in STEG DG1 in respect of Black Start have not yet concluded. From the work progressed to date we understand that there are likely to be consequential changes to the Grid Code OC9. At the very least Relevant Transmission Licensees are likely to be required to be parties to LJRPs.

43. We also believe that due to the nature of the 132kV Transmission system it is likely that the DNO has a very much higher probability of becoming islanded with Transmission connected generation. Therefore the provision in OC9.5 may benefit from being explicitly extended to include DNOs liasing, where facilities already exist, directly with Transmission connected generation.

44. We are not aware of any 'back off' provision for OC11 in the STC at present.

Balancing Codes

45. We believe that a regional difference is required in respect of MVAr outputs in BC2.A.2.6. The figure suggested by of Ofgem of 5% appears reasonable considering that England and Wales an obligation (+/-25MVAr) is broadly based on a 500MW unit. Given that there are sets in England and Wales that are significantly smaller than 500MW, we would be comfortable with a larger percentage, e.g. 10%, but feel that 500% (25MVAr range on a 5 MW set) is clearly unreasonable.

General Conditions

46. We are pleased that Ofgem believe the GES changes in England and Wales should be extended to BETTA. We look forward to reviewing the equivalent list for Scotland and the equivalent drafting in the STC to enable the process in Scotland.

Response to the 'additional issues' mini consultation, dated 26 May 2004

47. We agree with Ofgem / DTI conclusions regarding the coverage and interaction of OC1 and OC2 in respect of Gensets in Scotland. We agree that OC1.4.2 (c) would benefit from clarification and are comfortable with the suggested drafting proposed by Ofgem.

48. We recently consulted on changes to OC1 that included clarification of OC1.4.2 (i). As these were not consulted on in the context of BETTA and did not take account of other changes in the Grid Code as a result of BETTA, such as the definition of Genset, the drafting is slightly different. This being the case, we believe the drafting we proposed and that proposed by Ofgem / DTI achieve a similar objective.

49. We agree that the proposed changes to OC2.4.1.1 (a) and OC2.4.1.2.1 (a) (i) are required as a result of other drafting changes to the GB Grid Code.

50. In terms of Interconnectors there are three main issues, provisions of forecast flows on the Interconnector, provisions of interconnector availability data and Safety Co-ordination arrangements.

51. In terms of forecast flows any additional information, such as that provided for in the Scottish Grid Code, would only serve to improve the overall operation and security of the system. Therefore we would support the inclusion of such data. Although we believe this data is also important to the external System Operator and therefore it may be better placed in the System Operator agreement for the Interconnector.

52. As Ofgem / DTI correctly state as partial asset owner and through the bilateral interface agreements with existing parties connected with Interconnectors we exchange information on the current and future availability of the Interconnectors, under BETTA this will not necessarily be the case with Moyle. Therefore we believe that asset information on the Interconnector should be provided through OC2 where it is not provided through other agreements.

53. In terms of Safety Co-ordination, again due to NGC's close involvement with existing Interconnectors the existing Interconnector Agreements include provisions that replicate OC8. Under BETTA this may not necessarily be the case and therefore we believe OC8 should apply to Interconnector operators / owners where no other agreement including Safety Co-ordination provisions exits. We note that through the STC NGC should be contractually obliged to ensure appropriate arrangements are in place to allow the TO to carry out its statutory obligations.

54. We believe that equivalent obligations to those in the Scottish Grid Code in relation to Load Management should be incorporated in GB Grid Code. The GB Grid Code already deals with Load Management through Customer Demand Management. Customer Demand Management in the GB Grid Code represents a commercial arrangement between a supplier and a customer.

55. Customer Demand Management obligations are covered in OC1 and BC1. The only obligations at present are to inform NGC of the details in the Control Phase under OC1. We would suggest a new section OC1.5.2 (c) be added to cover the existing Scottish OC2 data requirements. We would be happy for this to include 'when reasonably required by NGC', to avoid an unnecessary burden on suppliers. This would require the same information as OC1.5.5.2, but be in the timescales prescribed by OC1.5.2.

56. In terms of the equivalent obligations in the SDCs the GB equivalent is slightly more difficult as it interacts with Physical Notifications and Bids and Offers from suppliers (which are normally prohibitive on price and not on a GSP basis). Based on discussions at GCEG the obligations required in the Grid Code would be to adjust the switching time, we would suggest a new obligation under BC1.4.7 to achieve this.

57. BC1.4.7 would be applicable in relation to Customer Demand Management notified under BC1 and would provide NGC the option, after discussions with suppliers (who are BM Participants), to vary the switching time, possibly limited to 'for local constraint issues'.

Other Issues

58. We note that certain of the definitions refer to GB Transmission System, whilst others refer to Transmission System (e.g. the Transmission System Warnings). We are concerned that by not using GB in this context, Users could be confused as to whether or not these would be issued GB wide or for individual

Transmission Systems (given that this term is used to refer to each of the Transmission Licensee's systems).

59. There are certain cross code matters (GB CUSC, GB BSC, STC and GB Grid Code) which still need to be resolved and which will inevitably cause impacts upon various codes. In this regard consideration will need to be given to GC10 and the consolidation/joinder of disputes generally.

60. We feel that there is a need to alert Users to the possibility that in some areas they may deal directly with the Relevant Transmission Licensees, who would be acting on our behalf. Therefore it may be useful to include drafting either in the General Conditions or at the relevant places in the specific Codes to deal with this. This would draw the attention of Users to the fact that the Relevant Transmission Licensees may in practice contact and issue instructions to Users on behalf of NGC in relation to matters arising under the Grid Code (OC7, Operational Liaison, for example).

61. This intention of such drafting would be only to serve to clarify for Users the role of the Relevant Transmission Licensees, which might otherwise be a source of confusion for Users given that the GB Grid Code (with the exception of OC8A2) is currently set out in terms of the rights and obligations of NGC and Users. We have suggested one way of tackling this in GC13.2, but further consideration is required as to the optimal way forward.

62. Along with any such drafting there would need to be explicit STC drafting, possibly including details in an STCP, that detailed the extent to which the Relevant Transmission Licensee could communicate directly with the User, e.g. for issuing switching instructions. This STC drafting would have to be very explicit that the Relevant Transmission Licensees can only direct Users in those circumstances, and that any direction outside of this would be breach of the STC.

Conclusion

63. Once again, we thank Ofgem / DTI for this opportunity to comment on the GB Grid Code. We note that there is considerable further work to be done, especially in relation to the STC, which is likely to have an impact on the final legal text of the Grid Code. We look forward to responding to these further consultations.

64. We look forward to reviewing the forthcoming consultation covering the transition process and how this will dovetail with the enduring arrangements in the Grid Code.

65. Appendix 1 contains our detailed drafting comments based on the issues we have discussed above, some additional drafting comments that are self-explanatory and some consistency issues between the recent consultations on the STC and GB CUSC legal text.

66. If you have any queries on this response please contact Patrick Hynes on 01926656319 or Nigel Brooks on 01926656028.

Appendix 1 – Detailed comments on the draft text

GLOSSARY & DEFINITIONS	
~~**Area Manager**~~	~~A manager notified to the **User** by **NGC** whose management unit is a geographical area embracing part of the **GB Transmission System.**~~
Balancing Mechanism	Has the meaning set out in ~~the~~**NGC's Transmission Licence.**
Balancing Principles Statement	A statement prepared by **NGC** in accordance with [Special Condition AA4] of ~~the~~**NGC's Transmission Licence**.
Bilateral Agreement	Has the meaning set out in ~~the~~**NGC's Transmission Licence.**
Construction Agreement	Has the meaning set out in ~~the~~**NGC's Transmission Licence.**
Control Calls	A telephone call whose destination and/or origin is a key on the control desk telephone keyboard at a ~~**NGC**~~ **Transmission Control Centre** and which has the right to exercise priority over (i.e. disconnect) a call of a lower status.
CUSC	Has the meaning set out in ~~the~~**NGC's Transmission Licence.**
CUSC Contract	One or more of the following agreements as envisaged in [Supplementary Standard Condition C7F] of ~~the~~**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 ~~the~~**NGC's Transmission Licence.**
Customer Demand Management Notification Level	The level above which a **Supplier** has to notify **NGC** of ~~his~~its proposed or achieved use of **Customer Demand Management** which is 12 MW in England and Wales and 5 MW in Scotland.
Demand Control Notification Level	The level above which a **Network Operator** has to notify **NGC** of ~~his~~its proposed or achieved use of **Demand Control** which is 12 MW in England and Wales and ~~0~~ 5MW in Scotland.
External System	In relation to an **Externally Interconnected System Operator** means the transmission or distribution system which it owns or operates which is located outside ~~GB~~**Great Britain** and any **Apparatus** or **Plant** which connects that system to the **External Interconnection** and which is owned or operated by such **Externally Interconnected System Operator**.
Financial Year	Bears the meaning given in [Supplementary Standard Condition 1 (Definitions and Interpretation) ~~of the~~] of **NGC's Transmission Licence**.
Generator	A person who generates electricity under licence or exemption under the **Act** acting in its capacity as a generator in ~~GB~~**Great Britain**.
Genset	A **Generating Unit** or **CCGT Module** at a **Large Power Station** ~~or~~and any **Generating Unit** or **CCGT Module** which is directly connected to the **GB Transmission System**.
Great Britain	Has the meaning set out in Schedule 1 of **NGC's Transmission Licence.**

Instructor Facilities	A device or system which gives certain ~~NGC~~ Transmission **Control Centre** instructions with an audible or visible alarm, and incorporates the means to return messages acknowledgements to the ~~NGC~~ Transmission **Control Centre**.
Licence Standards	Those standards set out or referred to in [Condition C17 and Condition D3 ~~of the~~] of **NGC's** **Transmission Licence**.
Material Effect	An effect causing a **User** or **NGC**, as the case may be, to effect any works or to alter the manner of operation of its **Plant** and/or **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 which in either case involves that **User** or **NGC**, as the case may be, in expenditure of more than £10,000. ***Consider consistency with GB CUSC***
NGC Control Engineer	The ~~nominated~~ person ~~employed~~ nominated by **NGC** to direct the operation of the **GB Transmission System**.
National Demand	The amount of electricity supplied from the **Grid Supply Points** plus:- • that supplied by **Embedded Large Power Stations**, and • **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**.
Non-Embedded Customer	A **Customer** in ~~GB~~**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.
Operational Planning	Planning through various timescales the matching of generation output with forecast **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 ~~the~~ **Transmission** ~~**Licence**~~**Licences** or [the] **Electricity Distribution Licence[s]**, as the case may be.
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**. ***[Note: Need for alignment of equivalent definition in STC with this]***
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 OC8.8 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 **OC**~~8.~~**8A1.** 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 OC8.8 and which provides for **Safety Precautions** to be applied and maintained. [An example format of the **Relevant Transmission Licensee's** permit for work is attached as Appendix E to **OC**~~8.~~**8A2.**] ***[Note: It would appear from the current draft of OC8A2 that this language will need a little fine tuning once the position on this point has been finalised.]***

Point of Isolation	The point on **Apparatus** (as defined in ~~OCA~~**OC8A** 1.1.6.2 and ~~OCA~~**OC8A** 2.1.7.2) at which **Isolation** is achieved.
Relevant Transmission Licensee	Means **SPT** ~~in the southern part of Scotland~~ in respect of its **Transmission Area** and **SHETL** in respect of its **Transmission Area**.
Responsible Manager	~~For safety coordination in England and Wales~~ In respect of **User's**, a Manager who has been duly authorised by a **User** ~~or **NGC**~~ to sign **Site Responsibility Schedules** on behalf of that **User** ~~or **NGC**, as the case may be~~. For safety coordination in Scotland, a manager who has been duly authorised by ~~a **User** or~~ the **Relevant Transmission Licensee** to sign **Site Responsibility Schedules** by the **Relevant Transmission Licensee** on behalf of ~~that **User** or~~ **NGC**, ~~as the case may be~~. For safety coordination in England, a manager who has been duly authorised by **NGC** to sign **Site Responsibility Schedules** on behalf of **NGC**.
Safety Co-ordinator	For safety co-ordination in England and Wales ~~A~~ a person or persons nominated ~~by each **User** and~~ by **NGC** ~~(in England and Wales)~~ and each **User** ~~by the **Relevant Transmission Licensee** (in Scotland)~~ to be responsible for the co-ordination of **Safety Precautions** at each **Connection Point** when work (which includes testing) is to be carried out on a System which necessitates the provision of Safety Precautions on **HV Apparatus** (as defined in OC8A1.1.6.2 ~~and OC8A2.1.7.2~~), pursuant to **OC8**. For safety co-ordination in Scotland a person or persons nominated by the **Relevant Transmission Licensee** and each User to be responsible for the co-ordination of **Safety Precautions** at each **Connection Point** when work (which includes testing) is to be carried out on a System which necessitates the provision of **Safety Precautions** on **HV Apparatus** (as defined in OC8A2.1.7.2), pursuant to **OC8**.
Seven Year Statement	A statement, prepared by **NGC** in accordance with the terms of ~~the~~**NGC's Transmission Licence**, showing for each of the seven succeeding **Financial Years**, the opportunities available for connecting to and using the **GB Transmission System** and indicating those parts of the **GB Transmission System** most suited to new connections and transport of further quantities of electricity.
Subtransmission System	The part of a **User's** System which operates at a single transformation below ~~**Supergrid Voltage** and in Scotland, also the part of a **User's** System which operates at a single transformation below 132kV~~ the voltage of the relevant **Transmission System**.
Supplier	(a) A person supplying electricity under an **Electricity Supply Licence**; or (b) A person supplying electricity under exemption under the **Act**; in each case acting in its capacity as a supplier of electricity to **Customers** in ~~GB~~ **Great Britain**.
System Operator - Transmission Owner Code or STC	Has the meaning set out in ~~the~~**NGC's Transmission Licence**.
Total System	The **GB Transmission System** and all **User Systems** in ~~GB~~ **Great Britain**.

Transmission	Means, when used in conjunction with another term relating to equipment [or a site], whether defined or not, that the associated term is to be read as being part of or directly associated with the **GB Transmission System**, and not of or with the **User System, except where that term itself forms part of another defined term**. ***[Note: Equivalent definition in STC to be aligned?]***
Transmission Area	Has the meaning set out in the **Transmission Licence** of each of **NGC, SPT** and **SHETL**.
Transmission Licence	~~The~~A licence granted under Section 6(1)(b) of the **Act**.
Transmission Site	In England and Wales, means a site owned (or occupied pursuant to a lease, licence or other agreement) by **NGC** in which there is a **Connection Point**. For the avoidance of doubt, a site owned by a **User** but occupied by **NGC** as aforesaid, is a **Transmission Site**. In Scotland, means a site owned (or occupied pursuant to a lease, licence or other agreement) by a **Relevant Transmission Licensee** in which there is a **Connection Point**. For the avoidance of doubt, a site owned by a **User** but occupied by ~~the~~a **Relevant Transmission Licensee** as aforesaid, is a **Transmission Site**.
Transmission System	Has the same meaning as the term "licensee's transmission system" in the **Transmission Licence** of each of **NGC, SPT** and **SHETL**.
Transmission System Demand	The amount of electricity supplied from **Grid Supply Points** plus:- • that supplied by **Embedded Large Power Stations**, and • exports from the **GB Transmission System** across **External Interconnections**, and • **Transmission System Losses**, and, for the purposes of this definition includes:- • the **Demand** taken by **Station Transformers** and **Pumped Storage Units**.
PLANNING CODE	
Contents Page	**APPENDIX C** PART 1 – ~~SSE~~ SHETL's TECHNICAL AND DESIGN CRITERIA PART 2 – SPT's TECHNICAL AND DESIGN CRITERIA
PC.3.2	In the case of **Embedded Power Stations**, unless provided otherwise, the following provisions apply with regard to the provision of data under this **PC**: (a) each **Generator** shall provide the data direct to **NGC** in respect of **Embedded Large Power Stations** and **Embedded Medium Power Stations**; (b) although data is not normally required specifically on **Embedded Small Power Stations** under this **PC**, each **Network Operator** in whose **System** they are **Embedded** should provide the data (contained in ~~the~~ Appendix A) to **NGC** in respect of **Embedded Small Power Stations** if: (i) it falls to be supplied pursuant to the application for a **CUSC Contract** or in the **Statement of Readiness** to be supplied in connection with a **Bilateral Agreement** and/or **Construction Agreement,** by the **Network Operator**; or (ii) it is specifically requested by **NGC** in the circumstances provided for under this **PC**.

PC.5.5	The **PC** requires that, at the time that a **Statement of Readiness** is submitted under the **Bilateral Agreement** and/or **Construction Agreement**, any estimated values assumed for planning purposes are confirmed or, where practical, replaced by validated actual values and by updated estimates for the future and by updated forecasts for forecast data items such as **Demand**. This data is then termed **Connected Planning Data**. To reflect the three types of data referred to above, **Connected Planning Data** is itself divided into: (a) those items of **Standard Planning Data** and **Detailed Planning Data** which will always be forecast data, known as **Forecast Data**; and (b) those items of **Standard Planning Data** and **Detailed Planning Data** which upon connection become fixed (subject to any subsequent changes), known as **Registered Data**; and (c) those items of **Standard Planning Data** and **Detailed Planning Data** which for the purposes of the **Plant** and/or **Apparatus** concerned as at the date of submission are **Registered Data** but which for the seven succeeding **Financial Years** will be an estimate of what is expected, known as **Estimated Registered Data**, as more particularly provided in ~~the~~ Appendix A.
PC.6 PC.6.1 PC.6.2	PLANNING STANDARDS **NGC** shall apply the **Licence Standards** relevant to planning and development in the planning and development of ~~the **GB**~~ its **Transmission System**. ~~also in Scotland~~ **NGC** shall procure that each **Relevant Transmission Licensee** shall apply the **Licence Standards** relevant to planning and development in the planning and development of the **Transmission System** of each **Relevant Transmission Licensee**. In relation to Scotland, Appendix C lists the technical and design criteria [to be] applied in the planning and development of each **Relevant Transmission Licensee's Transmission System**. The criteria are subject to review in accordance with each **Relevant Transmission Licensee's Transmission Licence** conditions. Copies of these documents are available from the **Relevant Transmission Licensee** on request. The **Relevant Transmission Licensee** will charge an amount sufficient to recover its reasonable costs incurred in providing this service.
PC.A.2.2.2	The **Single Line Diagram** (two examples are shown in Appendix B) must include all parts of the **User System** operating at **Supergrid Voltage** throughout **Great Britain** and, in Scotland, also all parts of the **User System** operating at 132kV, and those parts of its **Subtransmission System** at any **Transmission Site**. In addition, the **Single Line Diagram** must include all parts of the **User's Subtransmission System** throughout **Great Britain** operating at a voltage greater than 50kV, and, in Scotland, also all parts of the **User's Subtransmission System** operating at a voltage greater than 30kV, which, under either intact network or **Planned Outage** conditions:- (a) normally interconnects separate **Connection Points**, or busbars at a **Connection Point** which are normally run in separate sections; or (b) connects **Embedded Large Power Stations,** or **Embedded Medium Power Stations** connected to the **User's Subtransmission System**, to a **Connection Point.** At the **User's** discretion, the **Single Line Diagram** can also contain additional details of the **User's Subtransmission System** not already

	included above, and also details of the transformers connecting the **User's Subtransmission System** to a lower voltage. With **NGC's** agreement, the **Single Line Diagram** can also contain information about the **User's System** at a voltage below the voltage of the **Subtransmission System**. The **Single Line Diagram** must include the points at which **Demand** data (provided under PC.A.4.3.4) and fault infeed data (provided under PC.A.2.5) are supplied.
PC.A.2.2.3	The above mentioned **Single Line Diagram** shall include: (a) electrical circuitry (i.e. overhead lines, identifying which circuits are on the same towers, underground cables, power transformers, reactive compensation equipment and similar equipment); and (b) substation names (in full or abbreviated form) with operating voltages. In addition, for all load current carrying **Apparatus** operating at **Supergrid Voltage** throughout **Great Britain** and, in Scotland, also at 132kV, the **Single Line Diagram** shall include:- (a) circuit breakers (b) phasing arrangements.
PC.A.2.2.5.1	In addition, for all interconnecting transformers between the **User's Supergrid Voltage System** and the **User's Subtransmission System** throughout **Great Britain** and, in Scotland, also for all interconnecting transformers between the **User's** 132kV **System** and the **User's Subtransmission System** the **User** shall supply the following information:- Tap changer range Tap change step size Tap changer type: on load or off circuit Earthing method: Direct, resistance or reactance Impedance (if not directly earthed)
PC.A.3.2.1	(a) **Large Power Stations and Gensets** Data items PC.A.3.2.2 (a), (b), (c), (d), (e), (f) and (h) are required with respect to each **Large Power Station** and each **Generating Unit** of each **Large Power Station** and of each **Genset** (although (a) is not required for **CCGT Units** and (b), (d) and (e) are not normally required for **CCGT Units**). (b) **Embedded Small Power Stations** and **Embedded Medium Power Stations** Data item PC.A.3.2.2 (a) is required with respect to each **Small Power Station** and **Medium Power Station** and each **Generating Unit** of each **Small Power Station** and **Medium Power Station** (although (a) is not required for **CCGT Units**).
PCA.6.2.1	(f) the following data is required on all transformers operating at **Supergrid Voltage** throughout **Great Britain** and in Scotland also at 132kV: three or five limb cores or single phase units to be specified, and operating peak flux density at nominal voltage;
PC.A.8.3	(d) Since the equivalent will be produced for the 400kV or 275kV and also in Scotland ~~also~~ 132kV parts of the **GB Transmission System NGC** will provide the appropriate supergrid transformer data.

CONNECTION CONDITIONS	
CC.1.1	The **Connection Conditions** ("**CC**") specify both the minimum technical, design and operational criteria which must be complied with by any **User** connected to or seeking connection with the **GB Transmission System** or **Generators** (other than in respect of **Small Power Stations**) connected to or seeking connection to a **User's System** which is located in ~~England, Wales or Scotland~~**Great Britain**, and the minimum technical, design and operational criteria with which **NGC** will comply in relation to the part of the **GB Transmission System** at the **Connection Site** with **Users**.
CC.5.2 (c) CC.5.2(g)	(c) copies of all **Safety Rules** and **Local Safety Instructions** applicable at **Users' Sites** which will be used at the **NGC/User** interface (which, for the purpose of **OC8,** must be to **NGC's** satisfaction regarding the procedures for **Isolation** and **Earthing**. ~~In~~ For **User Sites** in Scotland~~,~~ **NGC** will consult the **Relevant Transmission Licensee** when determining whether ~~such~~the procedures for **Isolation** and **Earthing** are satisfactory); (g) written confirmation that **Safety Coordinators** acting on behalf of the **User** are authorised and competent pursuant to the requirements of **OC8**.~~, and, in addition, in Scotland: each **User** shall 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**; each **Relevant Transmission Licensee** shall give notice in writing to that **User** of the identity of its **Safety Co-ordinator(s)** and will update the written whenever there is a change to the **Connection Points** or **Safety Co-ordinators** a list of persons appointed by the **User** to undertake operational duties on the **User's System** and to issue and receive operational messages and instructions in relation to the **User's System**; and an appointed person or persons responsible for the maintenance and testing of **User's Plant** and **Apparatus**;~~
CC.6.1.5	(a) Harmonic Content The **Electromagnetic Compatibility Levels** for harmonic distortion on the **GB Transmission System** from all sources under both **Planned Outage** and fault outage conditions, (unless abnormal conditions prevail) shall comply with the levels shown in the tables of Appendix A of **Engineering Recommendation** G5/4. **Engineering Recommendation** G5/4 contains planning criteria which **NGC** will apply to the connection of non-linear load to the **GB Transmission System**, which may result in harmonic emission limits being specified for these loads in the relevant **Bilateral Agreement**. The application of the planning criteria will take into account the position of existing and prospective **Users' Plant** and **Apparatus** in relation to harmonic emissions. **Users** must ensure that connection of distorting loads to their **User Systems** do not cause any harmonic emission limits specified in the **Bilateral Agreement** ~~to be exceeded~~, or where no such limits are specified, the relevant planning levels specified in ~~G5/4.~~ **Engineering Recommendation G5/4, to be exceeded.**
CC.6.1.6	~~In~~For **Plant and Apparatus** connected to the **GB Transmission System** in England and Wales, under the **Planned Outage** conditions stated in CC.6.1.5(b) infrequent short duration peaks with a maximum value of 2% are permitted for **Phase (Voltage) Unbalance**, subject to the prior agreement of **NGC** under the **Bilateral Agreement**. **NGC** will only agree following a specific assessment of the impact of these levels on **Transmission Apparatus** and other **Users' Apparatus** with which it is satisfied

CC.6.1.7	Voltage fluctuations at a **Point of Common Coupling** with a fluctuating **Load** directly connected to the **GB Transmission System** shall not exceed: (a) In England and Wales, 1% of the voltage level for step changes which may occur repetitively. Any large voltage excursions other than step changes may be allowed up to a level of 3% provided that this does not constitute a risk to the **GB Transmission System** or, in **NGC's** view, to the **System** of any **User**~~. In~~; and, in Scotland, the limits for voltage level step changes ~~are as~~and large voltage excursions other than step changes set out in **Engineering Recommendation** P28. (b) For voltages above 132kV, **Flicker Severity (Short Term)** of 0.8 Unit and ~~a~~ **Flicker Severity (Long Term)** of 0.6 Unit, and, for voltages at 132kV and below, **Flicker Severity (Short Term)** of 1.0 Unit and ~~a~~ **Flicker Severity (Long Term**) of 0.8 Unit, as set out in **Engineering Recommendation** P28 as current at the **Transfer Date**.
CC.6.2	The following requirements apply to **Plant** and **Apparatus** relating to the **Connection Point**, which (except as otherwise provided in the relevant paragraph) each **User** must ensure are complied with in relation to its **Plant** and **Apparatus** and which in the case of CC.6.2.2.2.2, CC.6.2.3.1.1 and CC.6.2.1.1(b) only, **NGC** must ensure are complied with in relation to **Transmission Plant** and **Transmission Apparatus**, as provided in those paragraphs.
CC.6.2.2.4	Work on **Protection** Equipment No busbar **Protection**, mesh corner **Protection**, circuit-breaker fail **Protection** relays, AC or DC wiring (other than power supplies or DC tripping associated with the **Generating Unit** itself) may be worked upon or altered by the **Generator** personnel in the absence of a representative of **NGC** or, in Scotland, a representative of **NGC**, or written authority from~~, NGC~~ **NGC** to perform such work or alterations in the absence of a representative of **NGC.**
CC.6.2.3.5	Work on **Protection** equipment Where a **Transmission Licensee** owns the busbar at the **Connection Point**, no busbar **Protection**, mesh corner **Protection** relays, AC or DC wiring (other than power supplies or DC tripping associated with the **Network Operator** or **Non-Embedded Customer's Apparatus** itself) may be worked upon or altered by the **Network Operator** or **Non-Embedded Customer** personnel in the absence of a representative of **NGC** or, in Scotland, a representative of **NGC**, or written authority from~~, NGC~~ **NGC** to perform such work or alterations in the absence of a representative of **NGC**.
CC.6.5.6	(a) **NGC** shall provide system control and data acquisition (SCADA) outstation interface equipment. The **User** shall provide such voltage, current, **Frequency**, **Active Power** and **Reactive Power** measurement outputs and plant status indications and alarms to the **Transmission** SCADA outstation interface equipment as required by **NGC** in accordance with the terms of the **Bilateral Agreement**. In addition, in Scotland, in the case of **Novel Units** utilising wind energy, anemometer readings would be required for any turbine or **Cluster** of wind turbines with a total **Registered Capacity** of 5MW and greater. In the case of a **Cluster** of wind turbines with a total **Registered Capacity** of 5MW and greater, a single anemometer would suffice.
CC.6.5.10	Busbar Voltage **NGC** shall, subject as provided below, provide each **Generator** at each **Grid Entry Point** where one of its **Power Stations** is connected with appropriate voltage signals to enable the **Generator** to obtain the necessary information to synchronise its **Gensets** to the **GB Transmission System.** The term **"voltage signal"** shall mean in this context, a point of

	connection on (or wire or wires from) a relevant part of **Transmission Plant** and/or **Transmission Apparatus** at the **Grid Entry Point**, to which the **Generator,** with **NGC's** agreement (not to be unreasonably withheld) in relation to the **Plant** and/or **Apparatus** to be attached, will be able to attach its **Plant** and/or **Apparatus** (normally a wire or wires) in order to obtain measurement outputs in relation to the busbar.
CC.7.2.4	when working on **Transmission Plant** and/or **Transmission Apparatus** on a **User Site**, rather than the **User's Safety Rules** If the **User** is of the opinion that, for a **User Site** in England and Wales, **NGC's Safety Rules** or, for a **User Site** in Scotland, the **Relevant Transmission Licensee's Safety Rules**, provide for a level of safety commensurate with that of that **User's Safety Rules**, it will notify **NGC** in writing, that, with effect from the date requested by **NGC**, **NGC** or for a **User Site** in Scotland, the **Relevant Transmission Licensee**, may use its own **Safety Rules** when working on **Transmission Plant** and/or **Transmission Apparatus** on that **User Site**. Until receipt of such written approval from the **User** ~~to~~by **NGC**, in the case of a **User Site** in England and Wales, **NGC** shall continue to use the **User's Safety Rules**, and, in the case of a **User Site** in Scotland, **NGC** shall procure that the **Relevant Transmission Licensee** shall continue to use the **User's Safety Rules**
CC.7.2.5	If **NGC** gives its approval for the **User's Safety Rules** to apply when working on the **User's Plant** and/or **Apparatus** on a **Transmission Site**, that does not imply that the **User's Safety Rules** will apply to entering the **Transmission Site** (and access to the **User's Plant** and/or **Apparatus** on that **Transmission Site**. Bearing in mind, for a **Transmission Site** in England and Wales, **NGC's**, and, for a **Transmission Site** in Scotland, the Relevant **Transmission Licensee's,** responsibility for the whole ~~**Transmission Site**~~**Transmission Site,** entry and access will always be in accordance with , for a **Transmission Site** in England and Wales, **NGC's** and, for a **Transmission Site** in ~~England and Wales the **NGC's** and for a **Transmission Site** in~~ Scotland, the **Relevant Transmission Licensee's,** site access procedures. If ~~the~~a **User** gives its approval for work on **Transmission Plant** and/or **Transmission Apparatus** on a **User Site** in England and Wales ~~for~~using **NGC's Safety Rules,** or, for a **User Site** in Scotland ~~for~~, using the **Relevant Transmission Licensee's Safety Rules**, ~~to apply when working on the **Transmission Plant** and **Apparatus**,~~ that does not imply that, for a **User Site** in England and Wales, **NGC's Safety Rules**, or, for a **User Site** in Scotland, the **Relevant Transmission Licensee's Safety Rules**, will apply to entering the **User Site**, and access to the **Transmission Plant** and **Transmission Apparatus** on that **User Site**. Bearing in mind the **User's** responsibility for the whole **User Site**, entry and access will always be in accordance with the **User's** site access procedures.
CC.7.3.1	In order to inform site operational staff and **NGC Control Engineers** of agreed responsibilities for **Plant** and/or **Apparatus** at the operational interface, a **Site Responsibility Schedule** shall be produced, for **Connection Sites** in England and Wales, for **NGC** and **Users** with whom they interface, and, for **Connection Sites** in Scotland, for **NGC**, **Relevant Transmission** ~~**Licensee**~~**Licensees** and **Users** with whom they interface.
CC.7.6.2	In addition to those provisions, where a **Transmission Site** contains exposed **HV** conductors, unaccompanied access will only be granted to individuals holding an **Authority for Access** issued by **NGC** for **Transmission Sites** in England and Wales, and by the **Relevant Transmission Licensee** for **Transmission Sites** in Scotland.
CC.7.7.1	It is a requirement that all **User's Plant** and **Apparatus** on **Transmission Sites** is maintained adequately for the purpose for which it is intended and to ensure that it does not pose a threat to the safety of any **Transmission Plant, Transmission Apparatus** or personnel on the **Transmission Site**. **NGC** will have the right to inspect the test results and maintenance records relating to such **Plant** and **Apparatus** at any time.

CC.7.7.2	It is a requirement that all **Transmission Plant** and **Transmission Apparatus** on **User's Sites** is maintained adequately for the purposes for which it is intended and to ensure that it does not pose a threat to the safety of any of the **User's Plant**, **User's Apparatus** or personnel on the **User Site**. **Users** will have the right to inspect the test results and maintenance records relating to such **Plant** and **Apparatus**, at any time.
CC.7.7.3	~~In Scotland, it~~It is the **User's** responsibility to ensure that all the **User's Plant** and **Apparatus** in Scotland, including ~~protection~~**Protection** systems, are tested and maintained and remain rated for the duty required. An annual update of system fault levels is available as part of the **Seven Year Statement**.
CC.A.1.1.5	(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 ~~the~~ **Transmission Licensee**, as the case may be.
CC.A.1.1.9	The **Site Responsibility Schedule** shall then be signed on behalf of **NGC** by ~~the **Area Manager** responsible for the area in which the **Complex** is situated~~ its **Responsible Manager** 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.
CC.A.1.1.16	**Responsible Managers** 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 the **Area** its~~ **Responsible Manager** ~~responsible for the area in which the **Complex** is situated~~ (each of which is known as the "**Responsible Manager**") and each shall supply to the other **User** 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.
OPERATING CODE 1	
OC1.5.2(c)	**Customer Demand Management** (i) If reasonably required by **NGC**, each **Supplier** will notify **NGC** of any **Customer Demand Management** proposed by itself which may result in a **Demand** change equal to or greater than the **Customer Demand Management Notification Level** averaged over any half hour on any **Grid Supply Point** which is planned to occur at any time [in the **Control Phase**] and of any changes to the planned **Customer Demand Management** already notified to **NGC** as soon as possible after the formulation of the new plans. (ii) If reasonably required by **NGC** the following information is required on a **Grid Supply Point** and half-hourly basis:- (a) the proposed date, time and duration of implementation of **Customer Demand Management**; (b) the proposed reduction in **Demand** by use of **Customer Demand Management**.

OC1.5.5.2	(a) Each **Supplier** will (unless it has been required by, and has provided such data to, **NGC** in accordance with OC1.5.2(c)) notify **NGC** of any **Customer Demand Management** proposed by itself which may result in a **Demand** change equal to or greater than the **Customer Demand Management Notification Level** averaged over any half hour on any **Grid Supply Point** which is planned to occur at any time in the **Control Phase** and of any changes to the planned **Customer Demand Management** already notified to **NGC** as soon as possible after the formulation of the new plans. (b) The following information is required on a **Grid Supply Point** and half-hourly basis:- (i) the proposed date, time and duration of implementation of **Customer Demand Management;** and (ii) the proposed reduction in **Demand** by use of **Customer Demand Management**.
OPERATING CODE 2	
OC2.1.2	(a) **Operational Planning** involves 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**, and of parts of the **GB Transmission System** and of parts of **Network Operators' Systems** which is carried out to achieve, so far as possible, the standards of security set out in the **Transmission Licence** or **Electricity Distribution Licence** as the case may be.
OC2.1.9	Co-ordination of outages with persons responsible for **External Interconnections** will normally be the subject of **Interconnection Agreements**. Where this is not the case, equivalent data for the **External Interconnection** to that exchanged between **NGC** and a **Network Operator** under OC2.4.1.3 will be supplied by **NGC** or the **User** responsible for the **External Interconnection**, as the case may be.
OC2.3.1	(d) persons responsible for an **External Interconnection** in relation to OC2.1.9.
OC2.4.1.2.2	(b) Between the end of week 10 and the end of week 12 **NGC** will be considering the updated proposed **Genset** outage programme together with the estimate of **Output Usable** supplied by **Generators** under (a) and will be analysing **Operational Planning Margins** for the period. Taking these into account together with **GB Transmission System** constraints and outages and **Network Operator User System** constraints and outages known to **NGC**, **NGC** will assess whether the estimates of **Output Usable** supplied by **Generators** are sufficient to meet forecast **GB Transmission System Demand** plus the **Operational Planning Margin**.
OC2.4.1.2.2	(f) Between the end of week 34 and the end of week 39 **NGC** will be analysing the revised estimates of **Output Usable** supplied by **Generators** under (e) and will be analysing **Operational Planning Margins** for the period. Taking these into account together with **GB Transmission System** constraints and outages and **Network Operator User System** constraints and outages known to **NGC**, **NGC** will assess whether the estimates of **Output Usable** supplied by **Generators** are sufficient to meet forecast **GB Transmission System Demand** plus the **Operational Planning Margin**.

OC2.4.1.2.3	(b) Between 1600 hours Wednesday and 1700 hours Friday **NGC** will be analysing the revised estimates of **Output Usable** supplied by **Generators** under (a) and will be analysing **Operational Planning Margins** for the period. Taking into account **GB Transmission System** constraints and outages and **Network Operator System** constraints and outages known to **NGC**, **NGC** will assess whether the estimates of **Output Usable** supplied by **Generators** are sufficient to meet forecast **GB Transmission System Demand** plus the **Operational Planning Margin**.
OC2.4.1.2.4	(c) Between 1100 hours and 1600 hours each **Business Day** **NGC** will be analysing the revised estimates of **Output Usable** supplied by **Generators** under (b) and will be analysing **Operational Planning Margins** for the period 2-14 days ahead. Taking into account **GB Transmission System** constraints and outages and **Network Operator System** constraints and outages known to **NGC**, **NGC** will assess whether the estimates of **Output Usable** are sufficient to meet forecast **GB Transmission System Demand** plus the **Operational Planning Margin**.
OC2.4.1.3.4	(c) During Year 0 (including the **Programming Phase**) each **Network Operator** shall at **NGC's** request make available to **NGC** such details of automatic and manual load transfer capability of: (i) 12MW or more (averaged over any half hour) for England and Wales; (ii) 10MW or more (averaged over any half hour) for Scotland, between **Grid Supply Points**.
OC2.4.1.3.5 (c)	(v) Where a **Generator** with nuclear **Large Power Stations** which may be operationally affected by the preliminary **GB 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** 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** 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** may take the outage despite that **Generator's** concerns.
OPERATING CODE 5	
OC5.5.3 (Table)	The measured maximum **Phase (Voltage) Unbalance** on the **GB Transmission System** should remain, in England and Wales, below 1%, and in Scotland, below 2%. ~~Measured~~In England and Wales measured infrequent short duration peaks in ~~phase unbalance~~**Phase (Voltage) Unbalance** should not exceed the maximum value stated in the **Bilateral Agreement**. Measured voltage fluctuations at ~~the~~a **Point of Common Coupling** shall not exceed ~~the~~, for voltages above 132kV, **Flicker Severity (Short Term)** of 0.8 Unit and ~~a~~ **Flicker Severity (Long Term)** of 0.6 Unit, and, for voltages ~~above 132kV, and voltages~~at 132kV and below, shall not exceed ~~the~~ **Flicker Severity (Short Term)** of 1.0 Unit and ~~a~~ **Flicker Severity (Long Term)** of 0.8 Unit, as set out in **Engineering Recommendation** P28 as current at the **Transfer Date**.

OC5.5.2.1	The performance of the **BM Unit** will be recorded at ~~**NGC**~~ **Transmission Control Centres** with monitoring at site when necessary, from voltage and current signals provided by the User for each **BM Unit** under CC.6.6.1.
OPERATING CODE 6	
OC6.2.2	For certain **Grid Supply Points** in Scotland it is recognised that the requirements in OC6.4.5(b), OC6.5.3(b) (in respect of **Demand Disconnection** only) OC6.5.6 (ii), OC6.6.2 (c) and OC6.7.2 (b) may not be possible to meet. In these circumstances **NGC** and the relevant **Network Operator(s)** will agree equivalent requirements covering a number of **Grid Supply Points**. If **NGC** and the relevant **Network Operator** fail to agree equivalent requirements covering a number of **Grid Supply Points**, then the relevant **Network Operator** will apply the provisions of OC6.4.5(b), OC6.5.3(b) (in respect of **Demand Disconnection** only), OC6.5.6(ii), OC6.6.2(c), and OC6.7.2(b) as evenly as reasonably practicable over the relevant **Network Operator's** entire **System**.
OC6.4.5	Any notification under OC6.4.2, ~~OC6.4.1.3~~or OC6.4.4 will contain the following information on a **Grid Supply Point** and half hourly basis:
OPERATING CODE 8	
OC8.3.1	…… The procedures for the establishment of safety co ordination by NGC and the relevant persons responsible for safety co-ordination ~~in relation to~~ on **External Interconnections** ~~are set out~~ will be those contained in this **OC8** unless other arrangements have been agreed in **Interconnection Agreements** with the relevant persons for the **External Interconnections**.
OC8A1.3.1	**OC8A1** applies to **NGC** and to **Users** ~~in England and Wales~~, which in OC8A means:- (a) **Generators**; (b) **Network Operators**; and (c) **Non-Embedded Customers**~~.~~, in relation to their **Systems** in England and Wales**.**
OC8A1.5.3.2	(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**~~.
OC8A2.1.1	**OC8A2** 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. **OC8A2** only applies to **Relevant Transmission Licensees** and **Users** in Scotland. **OC8A1** specifies the procedures to be used by **NGC** and **Users** in England and Wales. **Users** should note in considering OC8A2 the provisions of GC.13. ……
0C8A2.1.4	**OC8A2** does not seek to impose a particular set of **Safety Rules** on the **Relevant Transmission Licensee** and **Users**. The **Safety Rules** to be adopted and used by the **Relevant Transmission Licensee** and each **User** shall be those chosen by each of them.

OC8A2.1.73	In **OC8A2** only the following terms shall have the following meanings**:** (~~2~~1) "**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~~2) "**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 **Safety Rules** of the **Relevant Transmission Licensee** or that **User** as the case may be. OC8A~~2.1.7.3~~2.1.7.4 For the purpose of the co-ordination of safety relating to **HV Apparatus** the term **"Safety Precautions"** means **Isolation** and/or **Earthing**.
OC8A2.3.1	**OC8A2** applies to the **Relevant Transmission Licensee** ~~**NGC**~~ and to **Users**, which in OC8 means:- (a) **Generators**; (b) **Network Operators**; and (c) **Non-Embedded Customers**~~.~~, in relation to their **Systems** in Scotland ~~In Scotland **OC8A2** also applies to the **Relevant Transmission Licensees**~~. The procedures for the establishment of safety co-ordination by **NGC** and/or the **Relevant Transmission Licensee** in relation to **External Interconnections** are set out in **Interconnection Agreements** with relevant persons for the **External** ~~**Inteconnections**~~**Interconnections**.

OC8A2.4.2.1	For each **Connection Point,** the **Relevant Transmission Licensee** and each **User** will have nominated to be available, within ~~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 **OC8A2**. A **Safety Co-ordinator** may be responsible for the co-ordination of safety on **HV Apparatus** at more than one **Connection Point**.
OC8A2.4.2.3	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 **OC8A2**.
OC8A2.4.3.2	The ~~**Revant**~~**Relevant** **Transmission Licensee** will use the format of the **RISSP** forms set out in Appendix A and Appendix B to **OC8A2**, or any other format which may be agreed between the **Relevant Transmission Licensee** and each **User**. That set out in **OC8A2** Appendix A and designated as "RISSP-R", shall be used when the **Relevant Transmission Licensee** is the **Requesting Safety Co-ordinator**, and that in **OC8A2** Appendix B and designated as "RISSP-I", shall be used when the **Relevant** ~~**Tranmission**~~**Transmission** **Licensee** is the **Implementing Safety Co-ordinator**. Proformas of RISSP-R and RISSP-I will be provided for use by **Relevant Transmission** ~~**Licensees**~~**Licensee** staff.
OC8A2.4.3.6	(a) In accordance with the timing requirements set out in CC.5.2 each **User** shall apply in writing to the **Relevant Transmission Licensee** for the **Relevant Transmission Licensee's** approval of its proposed prefix. (b) The **Relevant Transmission Licensee** shall consider the proposed prefix to see if it is the same as (or confusingly similar to) a prefix used by the **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 the **Relevant Transmission Licensee** disapproves, it shall explain in its response why it has disapproved and will suggest an alternative prefix. (d) If the **Relevant Transmission Licensee** has disapproved, then the **User** shall either notify the **Relevant Transmission Licensee** in writing of its acceptance of the suggested alternative prefix or it shall apply in writing to the **Relevant Transmission Licensee** with revised proposals and the above procedure shall apply to that application.
OC8A2.5.4.2	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 the **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.
OC8A2.5.6	Nothing in this **OC8A2** prevents the **Relevant Transmission Licensee** 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.
OC8A2.7.2	In those circumstances, if both the **Relevant Transmission Licensee** and the **User** agree, the relevant provisions of OC8A2.5 will apply as if the electrical connections or potential connections were, solely for the purposes of ~~this~~ **OC8A2**, a **Connection Point**.

OC8A2.7.3	(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 the **Relevant Transmission Licensee** 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 OC8A2.7.3 as the "relevant **Connection Point**". ~~(c)~~(b) The **Safety Rules** shall be those which apply to the relevant **Connection Point**. (c) The prefix for the **RISSP** (where applicable) will be that which applies for the relevant **Connection Point.**
OC8A2.10.1	Each **Relevant Transmission ~~Licensees~~Licensee** and **Users** shall maintain **Safety Logs** which shall be a chronological record of all messages relating to safety co-ordination under **OC8** sent and received by the **Safety Co-ordinator(s)**. The **Safety Logs** must be retained for a period of not less than six years.
BALANCING CODE 1	
BC1.4.7	Special Provisions relating to **Customer Demand Management** In relation to Scotland, **NGC** has the right to require **Suppliers** to reschedule **Customer Demand Management** to take account of local system constraints.
BC2.6.2	Communication with **Control Points** in Emergency Circumstances **NGC** will issue **Emergency Instructions** direct to the **Control Point** for each **BM Unit** in ~~England, Wales and Scotland~~**Great Britain**. **Emergency Instructions** to a **Control Point** will normally be given by telephone (and will include an exchange of operator names).
BC2.9.1.3	In the case of **BM Units** in ~~England and Wales and in Scotland~~**Great Britain**, **Emergency Instructions** will be issued by **NGC** direct to the **User** at the **Control Point** for the **BM Unit** and may require an action or response which is outside its **Other Relevant Data**, **QPN**s, or **Export and Import Limits** submitted under **BC1,** or revised under **BC1** or **BC2**, or **Dynamic Parameters** submitted or revised under **BC2**.
GENERAL CONDITIONS	
GC.4.3	(iv) a person representing the **Network Operators** in Scotland;
GC4.6	~~The **Panel**~~ **NGC** shall establish joint working arrangements with the **[STC Committee]** ***[Note: Needs to be defined.]*** to facilitate the identification, co-ordination, making and implementation of changes [that are required] ***[Note: Words in square brackets are not in the equivalent drafting in the STC.]*** consequent on ~~a proposed~~ **an** amendment to the **Grid Code** in a full and timely manner. ***[Note: Fit of these provisions with the equivalent provisions in the STC – at present there seems to be a mismatch in the joint working arrangements, as under the STC these are expressed to deal with changes to the Grid Code, CUSC and BSC consequent on changes to the STC, whereas under the Grid Code these are expressed to deal with changes to the STC consequent on changes to the Grid Code. Also in the case of the Grid Code it is NGC and not the Panel who is the responsible body. Shouldn't the joint working arrangements with the STC Committee deal with both changes to the Grid Code consequent on changes to the STC (and other codes?) and also changes to the STC (and other codes?) consequent on changes to the Grid Code?]*** These working

	arrangements shall be such as ~~to~~[to] *[Note: Word in square brackets is not in the equivalent drafting in the STC.]* 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 ~~any proposed~~an approved 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.
GC5.1	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~~ Transmission **Control Engineer** based at the **NGC 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.
GC5.2	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 ~~NGC~~ 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.5.4	If the ~~NGC~~ 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.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 ~~NGC~~ 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.13 GC.13.1	RELEVANT TRANSMISSION LICENSEES It is recognised that the **Relevant Transmission Licensees** are not ~~a~~ ~~party~~parties to ~~this~~the **Grid Code**. Accordingly, ~~whereas~~notwithstanding that Operating Code No. 8 Appendix 2 ("OC8A2") refers to obligations which will in practice be performed by the **Relevant Transmission Licensees** or the **Safety Co-~~ordinator~~ordinators** nominated by ~~a~~the **Relevant Transmission ~~Licensee~~Licensees** in accordance with relevant obligations under the **STC**, for the avoidance of doubt all contractual ~~liabilities arising in connection with the~~rights and obligations ~~set out in~~arising under OC8A2 shall exist between **NGC** and the relevant **User**~~.~~ and in relation to any enforcement of those rights and obligations OC8A2 shall be so read and construed. The **Relevant Transmission Licensees** shall enjoy no enforceable rights under OC8A ~~2. Where, but for the~~

	~~exclusion of third party rights, a **Relevant Transmission Licensee** would enjoy any rights under OC8A2 then the right in question is for the benefit of **NGC** and compliance by a **User** with any relevant obligation will be enforceable by **NGC** and not by any **Relevant Transmission Licensee**.~~2 nor shall they be liable (other than pursuant to the **STC**) for failing to discharge any obligations under OC8A2.
GC.13.2	Each **User** should note that in relation to Scotland the **Relevant Transmission Licensees** may, acting on behalf of **NGC**, contact it and issue instructions to it requiring actions to be taken relating to matters arising under the **Grid Code.** Each **User** must comply with any such instructions from the **Relevant Transmission Licensees** on the basis that they are instructions issued by **NGC.]** ***[Note: this is just one possible solution to the issue and would require further thought once the STC obligations/drafting is established. Any drafting will have to be read in conjunction with the equivalent provisions between NGC and the RTLs in the STC. The RTL should have rights in the STC and be limited to those, in relation to communication with Users.]***
GC.13.3	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.
CONSTITUTION AND RULES	
4.1.6	to consider and identify changes to the Grid Code to remove any unnecessary differences ~~in~~between the treatment of issues in Scotland ~~from~~and their treatment in England and Wales.
5.1(c)	(iv) a person representing the Network Operators in Scotland;