

Response to the Ofgem/DTI Consultation Document: 'GB Grid Code Connection Conditions, Operating Code 5 and General Conditions – An Ofgem /DTI mini-drafting consultation document' 28 November 2003

Introduction

1. We welcome the opportunity to comment on 'GB Grid Code Connection Conditions, Operating Code 5 and General Conditions – An Ofgem/DTI mini-drafting consultation document – 28 November 2003' (the consultation).
2. In this response we have concentrated on the specific drafting issues raised by Ofgem / DTI. The views in this response build on those that we have recently submitted in our response to "The Grid Code under BETTA – Ofgem/DTI conclusions and consultation on the text of a GB Grid Code and consultation on change co-ordination between the STC and user-facing industry codes – September 2003'.

Background

3. This consultation builds on the September 2003 GB Grid Code consultation, adding a further layer of detail on the technical differences between the existing Grid Codes and to consult on further regional differences that should be incorporated in the GB Grid Code, to be designated under BETTA.
4. We understand that it was not intended for the mini-drafting consultation to consider further the issues raised in the September 2003 GB Grid Code consultation, where views have already been invited. Therefore, we have mainly limited our response to the specific technical issues raised in the mini-drafting consultation and to the consideration of proposed regional differences.
5. As Ofgem/ DTI highlighted in the second GB Grid Code consultation, we, on behalf of Ofgem/ DTI and under their direction, prepared the draft legal text for the GB Grid Code. Therefore the legal text does not necessarily represent our own views, and should be read in this context. However, clearly, our response to this consultation has been written independently of Ofgem/ DTI and reflects the views of National Grid.
6. Ofgem / DTI have recently issued a consultation document on small generators. Many of the issues in that document have some relevance to the drafting of the GB Grid Code. In this response we have avoided directly addressing the specific issues discussed in the small generators consultation. However, we will be responding to the small generator consultation separately and this will include comments that could have an impact on the drafting of a GB Grid Code and enabling documentation.

Overview

7. We welcome the process that Ofgem / DTI have set up through the Grid Code Experts Group, GCEG, and support the work that this group is progressing in

comparing the two existing Grid Codes and reviewing the draft legal text of the GB Grid Code. We thank Ofgem / DTI for the opportunity to be involved in that process. In addition to this response we will continue to provide our support through the GCEG and subsequent consultation documents.

8. This response follows the structure of the consultation document. In each section we address any high level issues raised by Ofgem / DTI and confirm our position in respect of each of the individual regional differences that have been proposed. We have also provided additional comments on particular areas that we believe require further consideration.

General

9. All of the views expressed in this response assume that the previously proposed definitions in the September GB Grid Code consultation document are accepted. In particular, the definition of Large, Medium and Small Power Stations and that of Genset. These definitions contain regional differences that we continue believe are required.
10. These are such fundamental assumptions that were they not incorporated, as defined in the September 2003 consultation, our comments on the actual drafting, issues and proposed regional differences in this response or our response to the main September GB Grid Code consultation would be significantly different. Therefore, were these definitions not to be adopted, we would suggest significant redrafting would be required because of the overwhelming impact on the applicability of the GB Grid Code and would logically lead to the need for additional consultations.
11. In this response we do not explicitly address the issues of Licence exempt generation. Although it is worth noting that in order for the System Operator to 'have in force' the GB Grid Code the framework of agreements need to address how obligations are applied to unlicensed generators. We will be responding in more detail on this issue in the small generators consultation. We believe that the GB System Operator should have access to at least the same level of service provisions (either through the GB Grid Code, or other means) as is currently in available in Scotland.
12. We agree with the approach to considering regional differences, namely that where these are material, and are as a result of such matters as difference in technical standards or technical requirements of the Transmission System to retain such differences as they currently exist, in particular those that relate to the inclusion of 132kV as a transmission voltage. We also agree that the basis of the GB Grid Code should largely be the existing England and Wales Grid Code. We believe that some of the differences identified should be retained, but not as regional differences i.e. they should be applied GB wide. These relate to certain technical requirements that are explicit in the current Scottish Grid Code, but are either implicit or have not been required to date in England and Wales (but were such conditions to arise would be justifiable). In many of these instances where an explicit requirement is added for Scotland this will lead to confusion as to the exact requirements in England and Wales. In the cases where the Scottish Code states explicitly what is implicit under the England and Wales arrangements we believe the correct cause of action would be to include the requirements GB wide.

13. It is worth noting that both the Scottish Licensees and NGC have submitted reports to the Authority proposing significant changes to the Connection Conditions in relation to new technologies, England and Wales reference – Grid Code Changes to Incorporate New Generation Technologies and DC Inter-connectors (Generic Provisions). Were either of these to be approved the drafting for the GB Grid Code would be significantly different. We are still unclear as to the exact process for incorporating these changes, or similar, into the GB Grid Code text after the final draft has been published.
14. Ofgem/ DTI have highlighted the fact that in England and Wales CC6.3.1 excludes 'Small Power Stations, hydro units and renewable energy plant not designed for Frequency or Voltage control' from the obligations contained in the general requirements of CC6.3, whereas in Scotland the general requirements apply to all plant. At this stage we believe it would be unwise to relax the requirement in Scotland. Indeed, the Generic Provisions proposals for England and Wales remove the exclusion on hydro and renewable plant. Historically, the Transmission Licensee in England and Wales has had no direct relationship with small generators and their impact on the Transmission System was judged to be minimal. Therefore we believe that the only relaxation should be in relation to small generators if it can be established that they have no impact on the Transmission System.
15. We agree that in respect of this the Connection Conditions and OC5 that there appear, at this stage, to be no further requirements to make reference to Relevant Transmission Licensees. Of course, our view is subject to reviewing further drafting of the other codes, in particular any 'back off' arrangements. In our response to the GB Grid Code OCs mini drafting consultation we have suggested that there may be merit in making reference to the relationship between the System Operator and the Transmission Owners in relevant codes or the General Conditions for the benefit of Users. We believe that such a statement would aid Users in understanding the Transmission Owner role without having to refer to the STC, thus avoiding confusion.
16. The Connection Conditions contain provisions relating to Site Responsibility Schedules, Operational Diagrams and Site Common Drawings. These are critical for the safe and secure operation of the transmission system, indeed are likely to become more important under BETTA where additional parties are involved. We understand from the GECG that the Scottish versions of these are significantly different. We suggest that further work to confirm the BETTA requirements is required. In any event the STC should make provision for exchanging such information (we believe these are required in some form for all sites, not just User sites). This may be another area where the GB Grid Code may need to take account of a regional difference.
17. We have recently submitted changes to the England and Wales Grid Code associated with proposals for Governance of Electrical Standards. We understand the Scottish Licensees are also considering changes. Ofgem initiated Governance of Electrical Standards to improve transparency, we would be interested to learn how Ofgem intend to develop proposals that can be applied under the BETTA arrangements (split SO / TO model). As the majority of the standards are asset based there will obviously be an impact on the STC. We have supported Ofgem in developing the proposals for England and Wales and would be disappointed if similar arrangements were not introduced for BETTA.

Connection Conditions- Changes from EWGC CCs to GBGC CCs

18. We agree that the changes to CC6.1.7 in respect of applying Engineering Recommendation P28 to the Transmission System GB wide are reasonable. On the face of the England and Wales Grid Code it appears to be a new requirement, but is actually what is applied in England and Wales at 132kV as suggested by Ofgem / DTI.
19. GC.7 states: 'References in the Grid Code to Plant and / or Apparatus of a User include Plant and / or Apparatus used by a User under any agreement with a third party'. This implies that the System Operator can be considered the owner, for the purposes of the Grid Code, of all Transmission System plant and apparatus. This could potentially lead to confusion and considering the content of CC7 (safety related), CC7.1 is best deleted.
20. We agree that in CC6.5.10 the qualifier of 'large' should be removed so that the System Operator is required to provide a voltage signal to all directly connected generators and not just Large Power Stations. The England and Wales Grid Code is generally drafted assuming that only larger Power Stations connect to the Transmission System.
21. We agree that GB GC D1 CC7.2 should be changed to a site by site basis rather than a company wide basis. In practice England and Wales Users have only ever requested to work to their rules on a site by site basis.

Connection Conditions- Changes from SGC CCs to GBGC CCs

22. We agree it would be inappropriate to introduce a non-retrospective change requirement on a regional basis. The actual statement in SGC CC1.3 does not actually preclude retrospective changes. We believe that the current consultation process, including discussion at the Grid Code Review Panel and a industry wide consultation where users are free to state their views, and that NGC is required to bring to the attention of the Authority all sustained objections to the proposed changes is sufficient. As Ofgem / DTI has pointed out this process has resulted in several changes to the England and Wales Grid Codes where changes are not applied retrospectively, such as CC6.2.1.2 (a).
23. We agree that there should not be a regional difference where by Scottish Users need not apply to the Authority for derogations. The fact that this currently exists in Scotland raises many issues, such as what are the agreements that currently exist and how will these be treated in the transition to BETTA. These issues need to be carefully considered prior to go-live. Some of these agreements may be on purely commercial rather than technical grounds. If so, these need to be carefully considered under any transition arrangements in order to avoid undue discrimination in favour of Users with such agreements.
24. We believe that all Users should be capable of operating in a common frequency range. Therefore we support the proposal for no regional difference in CC6.1.3. We appreciate that the Scottish Grid Code contains provisions that may allow users to disconnect themselves within the operational range, under BETTA we believe that each of these should be considered individually.

25. We note Ofgem / DTI's comments on the applicability of the GB Grid Code to Licence exempt plant. This is an issue that would be of particular concern to us where the design of the system assumes that such plant did have a relationship with the System Operator e.g. the Transmission System required voltage support to be compliant. It is worth noting the work is being carried out in England and Wales through a joint Grid Code / Distribution Code Panels Working Group – Licence Exempt Embedded Medium Power Stations (LEEMPSWG). Obviously, the Licensing arrangements have the potential to have a far greater impact on operation of the Scottish Transmission System due to the relative impact of smaller generators. We will respond to this issue in our response to the 'Small Generators issues under BETTA – November 2003' consultation.
26. We note that DG4 is leading on the harmonisation of operational standards that obviously have an impact on the drafting of various parts of the Grid Code, including the voltage standards in CC6.1.4. We look forward to reviewing the conclusions from DG4.
27. We agree that it is appropriate to have a common quality assurance standard for test facilities across GB, and therefore support the adoption of the England and Wales standards in CC6.2.1.2 (d) – 'ISO 9000 (or equivalent) or BS EN 45001'.
28. We agree that the requirements for protection clearances times need not be a regional difference as the difference between the existing Grid Codes are not significant. Therefore the GB Grid Code will contain the existing England and Wales protection times.
29. As we have stated in previous GB GC consultations, we believe it is essential to have a regional difference in the definition of Small, Medium and Large Powers Stations. In respect of the previously mentioned impact of the Licensing arrangements we note that BETTA will introduce a new category of generator – Licence Exempt Large Power Stations. For directly connected Power Stations we understand that compliance with the Grid Code will be a requirement for connection (CUSC – 6.29). In the case of embedded Power Stations, especially large, we understand Ofgem / DTI are considering the work being carried out in England and Wales through the LEEMPSWG.
30. We agree that a regional difference to CC6.2.1.1 (b) would be prudent. The requirements relating to earth fault factors and voltage rise under fault are factors, which are considered in the design stage for plant and apparatus, and therefore should not be changed unless detailed technical studies have been performed that show it is possible.
31. We agree that in conjunction with the proposals for CC6.1.5 (b) it would be appropriate to retain a regional difference in CC6.1.6 with regard to infrequent short duration peaks for Phase (Voltage) Unbalance.
32. We do not believe that it is necessary for a regional difference in CC6.1.5 (a). In our view the current England and Wales Grid Code clearly states that 'Harmonic distortion on the NGC Transmission System from all sources under both planned outage and fault outage conditions, shall comply with the levels shown in the Tables of Appendix A of Engineering Recommendation G5/4'. We would take this as a default position for Users. It goes on to further explain that in certain circumstances NGC 'may' specify limits in the Bilateral Agreement.

Therefore, we do not believe an explicit default position for Scotland is required. Indeed, it may actually confuse Users in England and Wales as to their position where limits are not specified in the Bilateral Agreement. We suggest this is actually a clarification and should be applied GB wide.

33. We agree it is reasonable to apply a regional difference to CC6.1.7, applying Engineering Recommendation P28 in Scotland rather than the existing England and Wales requirements. We note that the limits applied in England and Wales may, under some circumstances, be considered as marginally more onerous than those in Engineering Recommendation P28. We also agree, as mentioned previously, that under BETTA the GB Grid Code should contain Flicker Severity (short term) limits for 132kV and below as set out in Engineering Recommendation P28.
34. It is implicit throughout the England and Wales Grid Code that each connection needs to be independently controllable. Therefore, we agree that the proposed wording for CC6.2.1.2 (e) adds clarity, but believe it should be applied on a GB basis, rather than as a regional difference for Scotland. Applying the proposal to Scotland only could be misinterpreted as suggesting that a Network Operator or Non Embedded Customer connecting in England and Wales will not require a connection that is controlled by one or more circuit breakers. This is clearly not the correct position. The Electricity Safety Quality Condition Regulations 2002 clearly indicate each connection should be controlled by a circuit breaker (or circuit breakers). If our suggestion above is adopted, CC6.2.2.1 could then be either deleted or changed to indicate 'circuit breaker (or circuit breakers)' rather than, as proposed, being applied to England and Wales only. Any new wording would have to be clear that it is applied to CCGT modules rather than CCGT units.
35. We agree that SGC CC4.2.1 (d) is broader than the existing requirements in England and Wales. Although not as explicit in the England and Wales Grid Code we believe that each User has a responsibility to ensure it's plant and apparatus is fit for the purpose it is being used under Health and Safety regulations. The Scottish Grid Code only reinforces this requirement. If the proposed text is applied on a regional basis we believe this promotes the wrong message in England and Wales. Therefore, we would recommend that the proposed text be applied on a GB basis.
36. We are not aware of any technical reason to apply significantly more onerous requirements for back up protection in Scotland. The apparent difference may be as a result of the Scottish Code assuming only one main protection in stating the requirements. We believe further work should be carried out at GCEG to ensure Scottish connectees are not unduly discriminated against. Subject to this we agree that any differences in the actual requirements should remain as a regional difference.
37. We agree that the regional difference in CC6.2.2.2.(c) is required if Circuit Breaker Fail is actually employed at 132kV in Scotland. The existing England and Wales Grid Code does not contain provisions for Circuit Breaker Fail at 132kV as it is not normally required.
38. We agree a regional variation to CC6.2.2.4, work on protection equipment, may be appropriate in Scotland. We do not believe that the agreement should be solely between the Generator and the relevant transmission licensee. We

understand that the Generator would be working on its own equipment, but such equipment interfaces closely with Transmission equipment. Such work increases operational risk to the live system and therefore the System Operator must be involved. We see no reason to divert from the normal BETTA model of the User seeking agreement with the System Operator under the Grid Code, and then System Operator will then liaise with the Relevant Transmission Licensee under the STC.

39. Ofgem / DTI have highlighted differences between England and Wales CC6.3.1 and SGC4.3, where 'Small Power Stations, hydro units and renewable energy plant not designed for frequency and voltage control' are excluded in England and Wales. It is worth noting that with the increase in renewable plant and the resulting impact on the operation of the Transmission System the Generic Provisions proposals, which have recently been submitted to Ofgem, include specific requirements on non-synchronous plant, usually associated with such plant. Therefore that the Generic Provisions proposals remove the exclusions for hydro units and renewable plant so align more closely with the current Scottish requirements. On a wider note, possibly a transitional issue, we need to understand the extent that Scottish plant actually complies with such requirements i.e. how widely SGC CC 1.6 has been used. This also highlights the possible requirement for Ofgem / DTI to bring forward any BETTA implementation process for derogations. We would be interested to learn if any special arrangements are to be proposed.

40. We agree that that the application of CC6.3.7 (e) should contain a regional difference for Scotland. It would appear unreasonable to require retrospective application of frequency response capability to Scottish plant when the requirements are not applied retrospectively in England and Wales. We understand from the proposed drafting of CC6.3.7 (f) that plant commissioned in Scotland before BETTA go-live will be required to comply with the same requirements as England and Wales plant commission before 1 January 2001. We agree with this proposal.

41. In considering the growth and impact of renewable plant, particularly wind related, on the Transmission System we agree that CC6.5.6 (a) should include provision for wind speed indications to be supplied to the System Operator. The manner in which the Scottish Grid Code deals with such plant is significantly different to the proposals in Generic Provisions. The proposed changes in England and Wales are extensive, and in relation to wind speed are to add:

'CC6.5.6 (c) In the case of a Power Park Module and additional energy input signal (e.g. wind speed) may be specified in the Bilateral Agreement. The signal may be used to establish the level of energy input from an Intermittent Power Source for monitoring pursuant to CC6.6.1 and Ancillary Services and will, in the case of a wind farm, be used to provide NGC with advance warning of excess wind speed shutdown'

So whilst we agree with the requirement for such indications, we note that they are required on a GB basis and that there are outstanding proposals in England and Wales that deal with this issue. In the event of a positive decision from Ofgem on Generic Provisions we believe that the England and Wales proposals should be implemented in the GB Grid Code.

42. We agree with the proposal to remove 'large' from CC6.5.10. Clearly, the System Operator should make provision to provided signals for all directly connected generators to be able to synchronise to the Transmission System. We agree that the current wording in the England and Wales Grid Code reflects the fact that only Large Power Stations are connected directly to the Transmission System.
43. We agree with the regional difference in CC5.2 (g). We understand that the requirements in Scotland are part of the Scottish Transmission Owners Safety Rules and that there is a wish to minimise any changes to these.

OC5 – Testing and Monitoring

44. We agree that the only changes that appear to be required to OC5 are those that reflect a previously mentioned changes to the Connection Conditions.

General Conditions

45. We agree that there should be no regional differences in the General Conditions. As mentioned in our response to the September GB Grid Code consultation we support the proposed drafting of the GB Grid Code General Conditions.
46. We have recently submitted England and Wales proposals for Governance of Electrical Standards. Most of the applicable standards relate to Transmission Owners plant specifications. We would be interested to learn of any Ofgem / DTI view as to how Governance of Electrical Standards will operate under BETTA arrangements, particularly in relation to the governance of Scottish Transmission Owner standards. This area would obviously require related STC provisions.

Conclusion

47. In terms of substance, we broadly agree with the Ofgem/ DTI propositions, and have set out our detailed thoughts in this Consultation response. However, we are concerned that there is still a considerable amount of further detailed work to be carried out. For example, the identification of Scottish Plant compliance with the GB Connection Conditions and request for any derogations that may result.
48. As mentioned in the response there is considerable interaction between the proposed changes in this consultation and outstanding proposals for the England and Wales Grid Code e.g. Generic Provisions and Governance of Electrical Standards.
49. We look forward to continuing to work constructively with Ofgem/ DTI in helping Ofgem/ DTI to develop the appropriate GB Grid Code. More generally, we will of course be continuing to input constructively into the BETTA Consultation process going forward.