Notes of GB Grid Code Meeting
Monday 7th July 2003, Glasgow

Present:

Bridget Morgan	Ofgem Technical	BM
David Nicol	SP Transmission	DN
Patrick Hynes	NGC	PH
Chandra Trikha	Scottish Hydro-Electric	CT
Dave Ward	Magnox	DW
Louise Elder	Ofgem BETTA Project	LE

Apologies for absence were received from John Morris.

1. Update

BM reported that the Grid Code Consultation Paper was not yet ready for publication. The DTI had announced a target date for BETTA implementation of April 2005. The design phase was still expected to be complete by March 2004 and the additional time would be used in the implementation phase. Other consultation papers had been published on: BSC, CUSC, SAS, Transmission Licences, STC and Security Standards.

2. Actions from the previous meeting

1) CT had provided BM with list of users who had indicated an interest in participating in GB GCEG.
2) BM would arrange meeting with CT re: load managed areas.

3. Connection Condition Queries

The meeting reviewed queries reproduced in Annex 1 on the Connection Conditions.

4. Future meetings

The next meeting was scheduled for Wednesday 23 July, the Planning Codes and the Data Registration Codes will be discussed; BM will produce a list of queries. The General Conditions and the Constitution and Rules will be discussed at a future meeting.

Wednesday 23 July	SSE, Perth	PC and DRC
Thursday 14 August	NGC, Coventry	BCs, OC1, 2, 6, 7 & 9
Thursday 4 September	Ofgem, Glasgow	G&D, OC5, 10 & 12
Wednesday1 October	SSE, Perth	OC8 & 11.
GC and C&R to be scheduled.		

All meetings scheduled 10.30 - 15:00.

Actions

All actions to be complete by next meeting. Query reference relates to the queries in Annex 1.

No.	Action	Query	On
1.	Identify any changes to the scope of the E&W CC linked to the Grid Code consultation on Generic Provisions	1	PH
2.	Review connection agreements/discuss with planners to establish if and what connection conditions are normally applied to embedded generators	3	CT
3.	Circulate example of a Site Responsibility Schedule	4	DN, PH, CT
4.	Circulate Operation Diagram (for same sub if poss)	5	DN, PH, CT
5.	Identify typical contents of Site Common Drawings	9	DN, PH, CT
6.	Confirm CC.5.2(g) in E&W does not require a list of Safety Coordinators	6	PH
7.	Check process for Joint System Incident telephone list in Scotland	7	CT, DN
8.	Summarise contents of E&W Joint System Incident telephone list.	7	PH
9.	Check what CC.5.2(j) list (personnel authorized to sign site responsibility schedules) is used for and who it is circulated to	8	PH
10.	Compare E&W requirements with Scotland and investigate apparent 'gaps' (relating to the less detailed definition of the abnormal conditions for 275kV and 132kV than 400kV) in E&W CC6.1.4	11	PH
11.	Consider applying 2% negative phase sequence limit (standard in SGC CC) in E&W Consider applying 1% negative phase sequence limit (standard in E&W CC) in Scotland	13	PH DN
12.	Investigate the actual protection arrangements (in terms of numbers of main and back-up protection) for 132kV transmission connected generators in E&W	20	DW
13.	Provide explanation of what an 'interconnecting connection' is.	23	PH
14.	Check whether E&W generic provisions change proposals include a requirement for windspeed indications to be provided to NGC	38	PH
15.	Prepare Planning Code and Data Registration Code queries	n/a	BM

Annex 1

Specific Queries Relating to Connection Conditions

1. Is the description of users suitably broad for Scotland?

2. One approach for the definition of size of generator is:-

- Large - > 100MW E&W, > 30MW SPT and > 5MW SHETL
- Medium – 50-100MW E&W, 5-30MW SPT
- Small - < 50MW E&W, < 5MW SPT and SHETL

Would this be a reasonable interpretation of the central dispatch limits in the SGC?

3. What connection conditions in the SGC are usually enforced for embedded generators in Scotland (rather than being by other agreement with the Company)?

4. What is included in the Site Responsibility Schedule? Is the interpretation consistent across the three transmission licensees?

5. What is included in the Operation Diagram? Is the interpretation consistent across the three transmission licensees?

6. Who receives written confirmation about the authority and competency of the Safety Coordinators? Is it circulated to relevant parts of the businesses or kept in one central point?

7. What is the current circulation of the list of telephone numbers for Joint System Incidents? Does the list include transmission licensee contacts as well as user details?

8. Where are the personnel authorized to sign Site Responsibility Schedules on behalf of the user defined in Scotland? Is it under the SGC or another code or agreement?

9. What is included in the Site Common Drawing? Is the interpretation consistent across the three transmission licensees?

10. Is the need for fax contact details to be provided to transmission licensees in Scotland defined in the SGC or another code or agreement?

11. E&W CC6.1.4 appears to be slightly different from SGC CC4.1.3 – is it and if so are there particular reasons that require this difference? How does the SGC cater for abnormal events? Is there a material difference between the obligation applying only to a connection site (as in E&W) as opposed to the whole network (as in Scotland)? What issues would arise from the application of the E&W standard across GB?

12. Under BETTA, who should apply G5/4 in GB?

13. There are different levels of negative phase sequences component of the phase voltage in E&W CC6.1.5(b) (1%) and SGC CC4.1.3(c) (2%). Is there a reason for the difference? What is the difference and is this a common issue across the network or more limited? Does the range between 1 and 2% in Scotland cover short duration fluctuations or normal running conditions?

14. E&W CC6.1.7 details permissible levels for voltage fluctuations including step changes and flicker. How are the limits defined in SGC – is it by reference to P28? If so are the limits stated in the E&W code consistent with those in P28?

15. E&W CC6.2.1.1(b) states that under fault conditions the rated frequency component of voltage could rise to 140% phase to earth voltage which differs from SGC *CC4.1.3*(b) which uses 150%. Would there be any issues resulting from:-

- Tightening the standard in Scotland
- Relaxing the standard in E&W
- Retaining a geographical difference

16. Does the SGC state who will define the design requirements for Connection Sites? Does SGC specify a maximum earth fault factor? If not, where are such matters covered? Would the requirements of E&W CC6.2.1.1(b) and CC6.2.1.1(c) give rise to any issues if applied in Scotland?

17. E&W CC6.2.1.2 specifies some carve outs for plant and apparatus connected prior to defined dates. Would carve out arrangements be needed in Scotland to reflect existing SGC requirements? If so what are these likely to be and what would be considered to be a reasonable cut-off date?

18. Noting that changes to the SGC are not imposed retrospectively, is there a record of the applicable conditions for each Connection Site? Is this record available or considered to be confidential?

19. The minimum fault clearance times (for use in a bilateral agreement) specified in E&W CC6.2.2.2.2 differ from those in SGC CC4.2.2(a) (and E&W CC6.2.3.1.1(a) differ from those in SGC CC4.2.2(a)) in terms of wording and the clearance time of 140ms for 132kV. What is the technical reason for the time of 140ms? What would be the impact in Scotland of tightening the obligation to 120ms? What would be the impact in E&W of relaxing the obligations to 140ms?

20. E&W CC6.2.2.2.2(b) specifies the number of main and back-up protection systems required for generation connections. Is there an equivalent in the SGC or is it a matter for the site specific connection agreement? What is the reason for requiring a clearance time for back-up protection of 300ms as defined in SGC CC4.2.2(b)? What issues would arise in Scotland from relaxing the obligation for maximum protection clearance time to 800ms?

21. Is discrimination required between a user's back-up protection and the transmission system back-up protection in Scotland? If so where is this requirement defined? If not why is it not required?

22. How is SGC *CC* 4.2.2(b) interpreted? When is the 300ms measured from? Does it include protection operating times? Does it differ from E&W CC6.2.2.2.2(c)?

23. Is E&W CC6.2.2.3.1 applicable in Scotland? What is meant by interconnecting connections? Are the protection requirements specified in connection agreements in Scotland?

24. E&W CC6.2.2.3.2 details the obligation on a generator for back-up protection – is the equivalent in the SGC or another agreement? Are there any issues with applying E&W CC6.2.2.3.2 in Scotland?

25. Noting that SGC CC4.2.3 allows work on specified protection circuits to be carried out by generator personnel in the absence of transmission licensee personnel provided that there is written authorization, how often is this the case and in what circumstances?

26. E&W CC6.3 sets out General Generating Unit Requirements – SGC CC4.3 also sets out requirements on generating units but most are qualified by "unless agreed by the company". What issues would arise from removing this flexibility in Scotland? Is it common for other arrangements to be agreed?

27. What would be the impact of the relaxation in E&W CC6.3.1 being applied in Scotland?

28. There are some differences in the requirements for the speed of governor settings in E&W CC6.3.7(c) and SGC CC4.3.2. Are any of these areas covered in connection agreements in Scotland? What issues would arise from applying E&W CC6.3.7(c) in Scotland?

29. E&W CC6.3.7(e) notes an exception for generating plant that was connected after a defined date. What would be the impact of applying E&W CC Appendix 3 in Scotland? What defined date would be reasonable? Are there any other exceptions required?

30. E&W CC6.3.8(b) places restrictions on reactive power control facilities such that they should be disabled unless stated in a bilateral agreement. Similar restrictions are not in the SGC – are they specified elsewhere? Are similar restrictions required? If not are there any issues that could not be covered in the bilateral agreements?

31. E&W CC6.3.9 and SGC SDC2 4.7.3 specify different levels for the steady state loading inaccuracies for generators (E&W 2.5%, SGC 1MW or 2%). What issues would arise from aligning these limits?

32. SGC CC4.3.3 specifies the levels of negative phase sequence loading that generators are required to withstand without tripping (as does E&W CC6.3.10), but also places an additional requirement to meet IEC34/1. What does the requirement to meet IEC34/1 provide?

33. E&W CC6.3.11 defines the neutral earthing requirement using Earth Fault Factor and NGC's standards differ from IEC standards. Why does NGC have different standards? How different are they? What are the implications of applying NGC's standards in Scotland? Are the requirements in the SGC based on IEC standards? What is the impact in E&W of using IEC standards?

34. E&W CC6.3.14 that there may be an agreement for a generator to have a fast start capability. Is this similar in Scotland? If so, where is it defined? What use may be made of the capability?

35. Noting that LFDD relay settings are different in E&W to Scotland (defined in BGSA), would there be an issue with applying E&W CC6.4.3 in Scotland? Do the LFDD relays in Scotland comply with E&W CC Appendix 5? If not what are the characteristics?

36. E&W CC6.5.3 defines the supervisory tones used in control telephony. Similar definitions have not been identified in the SGC – what systems are currently in place?

37. In E&W CC6.5.4 it is stated that NGC will install control telephony at the User's location. SGC CC4.5.2 explicitly states that the user will pay for control telephony. What is meant by NGC will provide (does this also mean will pay for)? Would there be an issue in Scotland if the obligation was for the GBSO to provide?

38. SGC CC4.5.3 requires anemometer readings from clusters of windfarms (or a single windfarm) of 5MW or larger. What is this data used for by the transmission licensee?

39. CC7 – review deferred pending further work (by Ofgem/DTI and STEG) on safety and interface agreements.