

Headline Report – Grid Code Review Panel

Meeting Name	Grid Code Review Panel
Meeting Number	30
Date of Meeting	15 th November 2007
Time	10:00am – 3:30pm
Venue	National Grid House, Warwick

This note sets out the headlines and key decisions of the Grid Code Review Panel on the 15th November 2007. Full minutes of the meeting will be produced and subsequently approved at the next Panel meeting and will then be published on the website.

1) Minutes of Previous Meeting

The minutes of the Grid Code Review Panel (GCRP) meeting held on 20th September 2007 were APPROVED subject to amendments to Minute 817 to be agreed between National Grid and Scottish and Southern Energy and addition of an item raised by an Alternate Member relating to the Planning Code requirements. The minutes will be accessible from the Grid Code website in due course.

2) New Grid Code Amendments

Emergency Instruction to Deenergise

The Panel had previously agreed that National Grid should proceed to consultation on the proposed Grid Code change, in the expectation that the Authority would approve CAP144 or alternative (since the September GCRP the Authority had subsequently issued a “minded to approve” letter for CAP144 subject to its consideration of the consequential Grid Code changes).

Discussions between National Grid and Grid Code Panel Members are ongoing regarding the proposed legal text for the consequential Grid Code changes and the interaction with the CUSC provisions. National Grid and GCRP Members agreed to continue to discuss the Grid Code changes with view to obtaining an agreed position prior to industry consultation.

Protection Issues

National Grid presented paper pp07/42 which attempted to clarify the background to several protection issues and provided draft changes to the Grid Code to address those issues. In the first part of the paper National Grid explained that CC.6.2.2.2.2 (a) and CC.6.2.3.1 (a) related to the fault clearance times associated with directly connected Generators or Directly Connected Network Operators/ Non-Embedded Customers. The current wording in the Grid Code could imply that a faster fault clearance time could be specified in the Bilateral Agreement. This is not the intention of the current wording so revised wording is put forward in pp07/42 to clarify the position. Secondly, National Grid explained that the use of the terms “faster/slower” in CC.6.2.2.2(a) and CC.6.2.3.1(a) could be misleading and suggested use of the terms “greater than” or “less than” would be clearer.

In the second part of the paper National Grid explained that CC.6.2.2.2.2 (b) requires the installation of Back-Up protection by Generators and National Grid and provides that, in the event of fault clearance times not being met by the Generator’s main protection system then their Back-Up protection should be activated within a specific timeframe. A review of these provisions indicated that they do not provide for adequate discrimination between National Grid’s and the Generator’s protection systems where two Main Protections and one Back-Up protection has been installed on the Generator’s system. This lack of discrimination could lead to the loss of the entire substation and circuits remote from the substation. National Grid were proposing changes to CC.6.2.2.2.2 (b) and the General Conditions to provide the appropriate level of discrimination and amend

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the definition of Back-Up Protection to provide additional clarity regarding the functionality of the protection system (no common mode of failure). A transitional period (until 1st January 2012) was proposed to minimise the impact on affected Generators and allow changes to protection systems to be made as part of ongoing maintenance programmes.

Panel Members had a number of detailed comments on the proposals. These included the use of the terms “shorter than” or “longer than” as a better alternative than faster/slower, the need for further dialogue to identify the stations affected by the proposals on Back-Up Protection and giving National Grid the option to specify different fault clearance times in the Bilateral Agreement. It was also unclear how the proposals would apply in the case of 132kV circuits owned by National Grid and at the interface with DNOs. On the part 1 proposals it was agreed that National Grid would consider the comments made, re-draft the paper accordingly and provide an update to the February GCRP. On the part 2 proposals Panel Members agreed to input the various policies of their Companies to National Grid so that an assessment could be made of the appropriateness of the proposed transitional arrangements with a view to bringing the issue back to a future Panel meeting.

Grid Code Requirement for Current Sourced DC Links

National Grid presented pp/07/43 to the Panel and explained that an inconsistency in the Grid Code relating to the requirements for current sourced DC links to maintain a reactive power transfer within a range had recently been detected. The crux of the issue appeared to be that the Grid Code wording in CC.6.3.2 (b) was incorrectly updated to specify that current sourced DC links must be capable of maintaining zero transfer of reactive power within a tolerance explicitly stated in the Grid Code rather than in the Bilateral Agreement. This was in line with recommendations subsequently made for Power Park Modules (H/04 Report to the Authority) rather than in line with previous recommendations made for DC links by both the DC links and Generic Provisions Working Group (D/03 Report to the Authority). National Grid proposed to amend CC. 6.3.2 (b) to reflect the recommendations of D/03.

Panel Members made several comments on the proposals including how the transfer of reactive power from voltage sourced DC links would be covered by the Code and the need to ensure that the developers of the BritNed Interconnector could comment on the proposals. National Grid agreed to take these points into account as part of the consultation on the proposals.

3) Working Group Reports

Black Start – pp07/44

National Grid presented the Working Group's report to the Panel. The Panel had established the Black Start Working Group (BSWG) to take forward work initiated by the Energy Emergencies Committee (E3C) in 2005. The key areas for the Group to consider were:

- i) to ensure that the Local Joint Restoration Plans (LJRPs) are subject to regular review
- ii) consider additional governance measures to cover the re-synchronisation of islands phase of Black Start Recovery

The BSWG recommended a number of Grid Code changes as follows:

- i) introduce a new obligation for all signatories of an LJRP to conduct regular desktop exercises
- ii) clarify that the existing OC.9.5 coding regarding re-synchronisation of de-synchronised islands is applicable to the Black Start Recovery phase following LJRPs completed terminated
- iii) clarify the instructions given to Generators and Network Operators during a Black Start
- iv) removal of OC. 9.4.7.9 (Conclusion of Black Start) and replace with “Returning the Total System back to Normal Operation”.

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- v) Within OC.9.5 provide additional coding giving better clarity on the general strategy that will be required to recover from a Partial or Total Shutdown effectively

In addition the BSWG recommended that a proposal to modify Section G Paragraph 3.3 of the BSC should be raised to make it clear that it was not just National Grid who may give Black Start instructions but also DNOs and/or RTLs in accordance with the terms of a LJRP. National Grid recommended that the Working Group had met its Terms of Reference and the Report should now proceed to industry consultation.

Panel Members raised and agreed a number of points in relation to the Report including the following:

- i) Other affected AEOs could participate in the desk top exercises if they wished e.g. another generator close to a Black Start station
- ii) The Report and the drafting did take into account the fact that there would inevitably be uncertainty over the timing of the re-synchronisation of Black Start stations e.g. station staff would be dependent on transport services to get to site.
- iii) In addition it would be important to ensure that government sponsored bodies were aware that estimated projections of returning stations to normal operation were not guaranteed projections of return
- iv) progress on the modifications to the BSC should be monitored in case the outcome could have further implications for the Grid Code

Subject to these points the GCRP agreed that the Working Group had fulfilled its remit and that the issue should proceed to consultation.

Data Exchange – pp07/45

The GCRP approved the draft terms of reference for the Group contained in pp07/45. National Grid reported that the Working Group had met once since the September GCRP and were concentrating on identifying an enduring solution to the interaction of the transfer of User Data provisions in the STC and the Grid Code that met the needs and requirements of all parties involved.

Low Voltage Demand Disconnection (LVDD)

National Grid had received one further comment from a Panel Member on the report which had been presented to the September GCRP. The comment would be taken into account in the final version. National Grid would now submit the Report to the Authority under cover of the letter already seen by GCRP Members and would also ensure that other Government sponsored bodies dealing with emergency arrangements were aware of the Report.

Rated MW

National Grid was continuing to undertake further analysis and would provide this to the Group for further discussion in due course. At present the Group was considering 6 options and would develop these further. National Grid confirmed that the Group would work in parallel with the BSSG on the options.

Compliance

National Grid requested further nominations for membership of the Group from Panel Members to take these issues forward. As outlined at the September GCRP the amount of work was considerable and would be split into manageable work streams to improve the efficiency of the process. The first meeting of the Working Group was now expected to be in January 2008.

4) Gas Insulated Switchgear (GIS) – pp07/46

RWE presented pp07/46 and explained that GIS increasingly appeared to be the first choice of National Grid at connection sites in preference to Air Insulated Switchgear (AIS)

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seemingly due to its lower cost, reduced land requirement and its lower profile leading to an easier consent process. However, GIS was not defined in the Grid Code and made it much more difficult to identify the ownership boundary. As a consequence the ownership boundary in the BCA was considered to be “non-standard” since, with GIS, the User’s assets at the substation needed to be integrated within the structure of the substation and as a result were not readily accessible or detachable from the National Grid assets. In addition, the need to share a common gas system and adapt equipment if provided by a different manufacturer to that of the substation meant that it was not practicable for such User assets to be competitively procured or maintained. The User is therefore forced to contract with National Grid for the procurement and maintenance of its assets at a GIS substation on an unlicensed basis. This is exacerbated by the third party alliance arrangements entered into by National Grid making it extremely difficult for the User to form a view as to whether the price charged by National Grid was reasonable and competitive.

RWE recommended that the transmission ownership boundary should be redefined in the Connection Conditions of the Grid Code for GIS substations to include all connected GIS assets (up to an external connection to the User’s assets) and treated as licensed assets. Other Panel Members agreed with RWE that it was timely to review the ownership arrangements for GIS substations. DNO representatives confirmed that they experienced similar problems with GIS at their sites.

National Grid pointed out that GIS was chosen at sites where coastal pollution and/or space was a problem but it was incorrect to say that it was first choice at all sites. The GCRP agreed that a Working Group should be formed to progress the issue involving Members with knowledge of the CUSC issues. The Terms of Reference for the Working Group would be agreed by the GCRP by e-mail before the next meeting.

5) System to Generator Operational Intertripping Scheme – pp07/47

National Grid presented pp07/47 and explained that National Grid would present firm proposals at a future GCRP meeting but pp/07/47 proposed that an overview for developers and users about the arming and operation of System to Generator Intertripping Schemes that could be placed on the National Grid website in due course. The remainder of the paper was the draft text of this overview for agreement with the GCRP.

Panel Members made several comments and suggestions on the draft overview including clarification of the application of Intertripping Schemes during outage periods and inclusion of an Appendix to the overview describing the 4 categories of Intertripping Schemes. National Grid agreed to pursue the comments made by Panel Members and incorporate them into the overview for posting on the website. National Grid would also make firm proposals to the February GCRP about changes to the Grid Code to reflect System to Generator Operational Intertripping Schemes.

6) Dispatch of Reactive Power from Embedded Generation – pp07/48

National Grid presented pp/07/48 and explained that the paper was in response to actions agreed at the September GCRP. National Grid had agreed to clarify the current requirements for despatch of reactive power from embedded generation, describe the current working practices for despatch of reactive power from embedded generation and whether they differed from the Grid Code, confirm if despatch of reactive power from embedded Power Park Modules differed from despatch for embedded conventional plant and whether there were any inconsistencies between the Grid Code requirements for the despatch of active and reactive power for plant with a BELLA. National Grid confirmed that virtually all the reactive power requirements contained in the BELLAs had been activated. Responsibility for the despatch of reactive power rested with National Grid but the DNO could specify any constraints on their system which would impact any despatch instructed from National Grid.

The Panel welcomed the clarification provided in pp07/48. Panel Members were however surprised that National Grid should require despatch of reactive power from embedded

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generation connected at 11kv and 33kv circuits. Scottish and Southern Energy confirmed that the BELLA arrangements for despatch of reactive power were effectively irrelevant for voltage control in such “weak” networks. Alternatively Scottish and Southern suggested that they could provide National Grid with voltage set points within the Distribution Network. SSE Generation had confirmed though a Panel Member that the blanket requirements for reactive power from embedded generation in low voltage networks in Scotland contained in the BELLAs was unnecessary. If there was a specific requirement identified SSE Generation had suggested that there should be a separate agreement between the SO and the Generator to provide reactive power. Other Panel Members indicated that they were not aware of requests for reactive power from embedded generation at 132kV in England and Wales. National Grid agreed to discuss the issue further with Scottish and Southern and SSE Generation and report the outcome to the GCRP.

7) Capacity Terms – pp07/49

The Panel had agreed at the May 2007 GCRP that National Grid would build on the information provided then and issue a further paper in due course identifying all the capacity terms utilised within the Grid Code. National Grid presented pp07/49 and explained that the paper responded to Panel Members’ request for a comprehensive listing of the capacity terms appearing in the Grid Code and was now a useful reference for Users and could be placed on the National Grid website. The term “Generation Capacity” appeared in the BSC but had limited usage in the Grid Code. BSC Modification P215 (Revised Credit Cover Methodology for Generating BMUs) proposes to replace Generation Capacity with Final Physical Notifications (FPNs) in the calculation of credit cover. National Grid therefore proposed to undertake a formal review of the use of the term Generation Capacity in the Grid Code after the decision on P215 was known.

Panel Members welcomed pp07/48 and agreed that the information should be posted on the National Grid website subject to a request that the information provided should include an explanation of CEC.

8) New Technologies

National Grid gave the GCRP a presentation on new technologies which comprised an initial view of the potential Grid Code compliance issues raised by the prospect of new generation technologies.

The new generation technologies comprised gas (the new generation of CCGTs), Coal (Supercritical steam and IGCC), Nuclear (the next generation of reactors in GB) and Marine (both tidal and wave). National Grid was already in discussion with manufacturers about new generation technologies and potential Grid Code compliance issues and would extend those discussions in Q1 2008. A two-way dialogue with the GCRP was envisaged on these issues with National Grid informing the GCRP of developments and GCRP Members also informing National Grid of their understanding of the potential Code issues raised by these new technologies.

The key expected areas which could give rise to Grid Code issues were:

- i) Frequency Response – delivering the volume of 10% within 10 seconds as required in the Grid Code could have implications for Nuclear, Supercritical Coal, and IGCC mostly due to lack of stored energy and/or slow regulation of prime movers
- ii) Fast Deload – the ability of the frequency control device or speed governor to control frequency response below 52 Hz to minimise the risk of system or island shutdown could have implications for CCGTs, Nuclear, Supercritical Coal and IGCC

National Grid would prepare a further paper at either the February or the May 2008 GCRP for consideration by Panel Members. In response to a question from a Panel Member National Grid explained that the criteria for determining if a new technology had an impact on the Grid Code was any plant performance issue that prevented the plant from complying with the Grid Code requirements. The GCRP thanked National Grid for the presentation and agreed to consider the issues raised in the forthcoming paper.

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9) Offshore Developments

Ofgem/DBerr were expecting to issue a response to the consultation responses received following the consultation in the summer. There would be a separate consultation on the Grid Code drafting that was currently being worked up by the Offshore Grid Code Sub-group next year.

10) GB SQSS (System Quality and Security of Supply) Review Group

National Grid indicated that this item had been placed on the agenda at the request of the Panel at the September 2007 GCRP. National Grid explained that a governance process for the SQSS had been introduced 6 months ago which involved the consideration of any request from a licensee or other interested party to consider an issue which may impact on the SQSS e.g. a Working Group was convened to consider the impact of intermittency on the SQSS and three meetings were held. A website had also been established for the SQSS. National Grid proposed that a schedule should be provided to the GCRP at each meeting reporting on developments affecting the SQSS and the overall governance arrangements would be reviewed after 12 months.

The GCRP welcomed these governance arrangements for the GB SQSS. A Panel Member indicated that the copyright warning on both the GB SQSS and the Grid Code was inappropriate for AEOs. It was agreed that National Grid would explore ways of waiving these warnings for AEOs.

11) Impact of Other Code Modifications

The Panel NOTED that the Authority had rejected CAP143 (Interim TEC) and all alternatives on 12th October.

The Panel NOTED that CAP148 Working Group Report (Deemed Access Rights to the GB Transmission System for Renewable Generation) had commenced the industry consultation phase which would close on 20 November. The CUSC Panel would vote on whether to recommend CAP148 on 30 November. Significant changes to the Grid Code would be required should the Authority approve CAP148 or alternative.

The Panel NOTED that P215 (Revised Credit Cover Methodology for Generating BM Units) involved altering the basis of credit cover for BSC Parties to one based on FPNs. P215 was continuing at Working Group phase. Should P215 be approved it may necessitate a consequential change to the Grid Code.

12) Any Other Business

AOB1

National Grid indicated that in line with the Grid Code Constitution and Rules, notification regarding next year's Panel appointments would be circulated to GCRP Members and Authorised Electricity Operators in early December 2007. Vacancies currently existed for representatives for Suppliers, Non-Embedded Customers and would arise in due course for Generators with small and medium power stations only. Panel Members were requested to confirm any re-nominations in response to the notification.

AOB2

National Grid confirmed that an explanatory meeting was held on 5th November where National Grid explained its rationale behind Grid Code Consultation paper D/07 (Frequency Response Requirements). The meeting was attended by most D/07 respondents. National Grid had asked respondents for any additional comments on its presentation given at the meeting to be provided to National Grid by Monday 19th November.

AOB3

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Panel Members asked if the date for the February 2008 GCRP which was currently scheduled during half-term could be re-arranged. National Grid agreed to re-schedule the meeting for earlier in February 2008.

AOB4

National Grid informed the GCRP that it would shortly be offering the service of subscribing to e-mail notifications of changes to the Codes on the National Grid website similar to the service currently provided by Elexon for the BSC.

AOB5

A Panel Member requested clarification of the requirements being placed on DNOs in their bilateral agreements relating to the data transfer arrangements for operational metering information for medium embedded power stations under CC.6.4.4 of the Grid Code. National Grid agreed to discuss the issue further with the Panel Member.

AOB6

National Grid had circulated a paper (pp07/50) to the GCRP the previous day entitled "Multi-Unit BMUs Update". The GCRP had previously requested that they should be informed of any updates or changes to the treatment of multi-shaft CCGTs and notified on an annual basis whether the current arrangements for gaining access to MW availability above MEL would continue. National Grid confirmed in pp07/50 that the current arrangements would continue for winter 2007/08 and information would be published on SONAR giving improved transparency of the process. National Grid also confirmed that the weekly volume of faxes confirming MW availability above MEL was still too low to justify development of a major change to IS systems to incorporate this additional information. National Grid agreed to notify the next Ops Forum of these arrangements and update the Panel at the May 2008 GCRP.

AOB7

A Panel Member raised the issue of the difficulty of identifying the specific obligations for AEOs given the increasing complexity of the Grid Code in the light of Offshore developments and wind and novel generation coming on to the system. This situation would be further exacerbated by the advent of new technologies discussed under item 8 above. National Grid agreed and had undertaken some preliminary work in this area to consider how the Grid Code could be reorganised to reflect these developments. The Grid Code had originally been drafted with synchronous generation and connections to DNO networks predominantly in mind but this was changing over time. National Grid were aware that the Grid Code would need re-visiting in due course to reflect these developments. One approach could be to list the obligations of categories of AEOs in a schedule to the Grid Code to make them easier to identify, in the manner of a schedule of insurance requirements. National Grid agreed to keep this issue under review.

AOB8

Malcolm Taylor (Panel Member representing small and medium power stations) informed the GCRP that he had tendered his resignation as a Panel Member to the Panel Secretary. He would be leaving the AEP at the end of 2007 to take up a new post in Nigeria. He thanked National Grid for managing the Grid Code Review Panel and indicated that Generators valued the GCRP highly as a forum for discussion and progression of Grid Code issues. The Panel Chairman thanked Malcolm for his enormous contribution to the development of the Grid Code and for his wise counsel over many years. On behalf of all Panel Members the Chairman wished Malcolm well in his new post.

13) Next Meeting

The next meeting will be held on 7th February 2008 at National Grid House, Warwick. The meeting will commence at 10:00am.