Grid Code Review Panel Meeting

Minutes and Actions Arising from Meeting No. 37
Held on 21st May 2009
at the National Grid House, Warwick

Present:		
David Smith	DS	Panel Chairman
Richard Dunn	RD	Panel Secretary

National Grid

Mark Perry	MP	Alternate Member (for items 1-8 and 12-16 only)
Nasser Tleis	NT	Member (for items 9-11 only)
Brian Taylor	BT	Member
Tom Ireland	TI	Alternate Member

Generators with Large Power Stations with total Reg. Cap.> 3GW

John Morris	JM	Member
John Norbury	JN	Alternate Member
Yvonne Ryan	YR	Member
Claire Maxim	CM	Member
Jim Barrett	JB	Alternate Member

Generators with Large Power Stations with total Reg. Cap.< 3GW
None

Generators with Small and Medium Power Stations Only

Stephen Andrews	SA	Alternate Member

Network Operators in England and Wales

Alan Creighton	AC	Member
Mike Kay	MK	Member

Network Operators in Scotland

Dave Carson	DC	Member (via teleconference)
Neil Sandison	NS	Alternate Member

Relevant Transmission Licensees

Alan Michie	AM	Member

Generators with Novel Units

Sigrid Bolik	SB	Alternate Member

Ofgem Representative

Bridget Morgan	BM	Member

Non Embedded Customers

Alan Barlow	AB	Member

BSC Panel Representative

John Lucas	JL	Member

1. Introductions/Apologies for Absence

1189. Apologies for absence were received from Campbell MacDonald (Generators with Large Power Stations with total Reg. Cap.> 3GW), David Ward (Generators with Large Power Stations with total Reg. Cap.< 3GW), Guy Nicholson (Generators with Novel Units), Chandra Trikha (Relevant Transmission Licensees) and Jean Pompee (EISO).

2. Minutes of Previous Meeting

1190. The draft minutes of the 35th Grid Code Review Panel meeting held on 5th February 2009 were APPROVED, subject to minor amendments and will be available on the Grid Code Website.

Action: Panel Secretary

1191. The draft minutes of the informal Grid Code Review Panel meeting held on 2nd March 2009 were APPROVED and will be available on the Grid Code website in due course.

Action: Panel Secretary

3. Review of Actions

1192. All the outstanding actions from the previous meetings have been completed or were the subject of agenda items, except for:

- Minute 800 (Basic Electrical Safety Competence (BESC))

  JN and CM expressed concerns with the manner in which National Grid had implemented the BESC arrangements earlier in 2009. They suggested that National Grid had effectively ignored their views in this important area and introduced the BESC arrangements unilaterally. As a result they believed that the accreditation process for an Authorised Person to be set to work on National Grid sites was far too onerous and took no account of the existing high level of safety accreditation for Authorised Persons which applied within the Generators' own internal safety compliance arrangements. JN and CM believed this was a Grid Code issue. DNO Panel Members confirmed that they were not aware of any specific problems with the introduction of the BESC arrangements by National Grid. It was agreed that the concerns of the Panel Members should be conveyed to Steve Bath, who has responsibility for BESC arrangements within National Grid, via a letter in due course from the GCRP Chairman agreed with the Panel Representatives.

  Action: National Grid (DS)

- Minute 988 (Delegations of Authority - DOAs)

  National Grid updated the Panel on progress with the review of the DOA contracts. A draft of the proposed new DOA contract was now available and it was agreed that National Grid should circulate the draft contract to Panel Members for comment accompanied by an explanatory note summarising the reasons why the new contracts were required and the benefits these would provide for Users. It was agreed that Panel Members should be asked to provide their comments to National Grid within a month of circulation of the draft DOA contract.

  Action: National Grid (RD)

- Minute 1041 (Changes to Arrangements for Access to TOPAM Data)

  National Grid reported that that there had been no further feedback on this issue since the February Panel meeting.

- Minute 1049 & 1050 (Protection – Fault Clearance Times and Back-Up

Protection)

National Grid informed the Panel that a meeting between National Grid and industry protection specialists had been re-scheduled for 20th March 2009 following the cancellation of the meeting scheduled for 4th February due to bad weather. The specialists had concluded that a survey of all existing sites should be undertaken by Generators to check the precise back-up protection arrangements in place across the system. This survey would take several months to undertake and complete. The Group would then analyse the arrangements at all sites to check that the proposed new Grid Code wording was fit for purpose and covered all the possible arrangements on the system. A report on progress would be provided to the September Panel meeting

Action: National Grid (RD)

It was agreed that the paper mentioned by MK about Protection where DC supplies would apply consequent on a tripping arrangement should be added to the list of Outstanding Issues in table 2 of the current status report.

Action: National Grid (RD)

- Minute 1071 & 1073 (BM Replacement & BM System Issues)

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  National Grid reported that a meeting had been held recently with JN and his colleagues to discuss a number of BM replacement issues. JN confirmed that the meeting had been valuable.

- Minute 1074 (Target Voltage Instructions)

  National Grid gave the meeting a presentation on the target voltage instructions exercise (see item AOB3 for a summary of this presentation).

- Minute 1109 & 1111 Record of Inter System Safety Precautions (RISSP)

  National Grid was still in the process of consulting relevant Transmission Licensees about whether the Grid Code could be made more flexible as part of the proposal to expand the number of unique RISSP reference numbers.

  Action: National Grid(TI)

4. Grid Code Development Issues

Grid Code Consultation Update

1193. The Panel noted that National Grid had issued Consultation C/09 (Housekeeping Amendments) on 1st May 2009 with a request for comments by 1st June 2009.

5. New Grid Code Amendments

Reactive Power from Embedded Generation – Report from the Joint CUSC/Grid Code Working Group on CAP169 (pp09/21)

1194. National Grid explained that it had raised CAP169 at the February CUSC Panel and that the proposal was also briefly discussed at the GCRP held on 5th February to request Grid Code representation at the joint CUSC/Grid Code Working Group which was being established at the time. Part 1 of CAP169 seeks to align the CUSC requirements with those of the Connection Conditions of the Grid Code in respect of the reactive capability requirement from Power Park Modules. Part 2 of CAP169 seeks to extend the obligation on National Grid to conclude MSAs with all large power stations with a reactive capability below 15 MVAr upon request. Part 3 of CAP169 seeks to introduce amended payment terms for the provision of reactive power from embedded generators, recognising that some embedded generators operate under connection restrictions which prevent National Grid from despatching them at 0 MVAr. The fundamental changes were to the CUSC but there were also some consequential changes required to the Grid Code. The Working Group

consultation was issued on 18th May 2009 and closes on 1st June 2009 in the context of CUSC governance.

1195. The intention was to conduct a Grid Code consultation based on the formal CUSC consultation following at least one more Working Group meeting. Some Panel Members had concerns that the information about the embedded generation was coming through the DNO in the process envisaged under CAP169 and this seemed inappropriate. The reason for this was that for many DNO restrictions, the restriction is on the MVA output and it is up to the Generators to determine how the restriction will be divided between reactive and real power output. In addition, there was scope for increased engagement of both the DNOs and Panel Members on the Working Group. MK and AC agreed to recommend additional representatives for the Working Group. National Grid agreed to report back to the Panel on the issues addressed by the CAP169 Working Group in due course. If necessary, National Grid would arrange a further meeting of the GCRP before the next meeting scheduled in September 2009 in order to progress the issue in the Grid Code in accordance with CAP169 timescales.

Action: National Grid (TI)

6. Working Groups

- **Compliance Working Group**

1196. The Chairman of the Working Group updated the Panel on progress to date. The Panel had agreed at its February 2009 meeting that National Grid should try to resolve a number of outstanding issues, such as validation of models and the use of the manufacturer's data, related to the work of the Compliance Working Group before proceeding to consultation. These issues had been discussed further with the Generators representatives on the Working Group but had not been resolved. It was therefore proposed to hold another Working Group (probably in July) to try to resolve outstanding issues before proceeding to consultation. The Panel agreed with this approach.

Action: National Grid (MP)

- **Gas Insulated Switchgear (GIS)**

1197. The Chairman of the Working Group reported that at the latest Working Group meeting held on 13th May it was clear that there were still some significant issues for National Grid surrounding the option to transfer ownership of the Generator circuit connections at future GIS sites to National Grid, specifically the appropriate maintenance regime. He therefore requested agreement from the Panel to amend the Terms of Reference of the Working Group to present its final report to the September 2009 GCRP to allow the Working Group more time to analyse these issues. The Panel agreed to this request.

- **Frequency Response**

1198. National Grid reported that the Working Group were currently attempting to quantify the overall costs for new plant of meeting the Grid Code requirements for Frequency Response by modelling the likely operation of new plant on the transmission system. The next meeting of the Group would be held on 16th June 2009.

- **E3C Small Embedded Generators Frequency Obligations**

1199. National Grid reported that the Working Group was cooperating with about a dozen manufacturers to identify the capabilities for future plant to meet the frequency obligations in the Grid Code. The next meeting of the Group would be held on 4th June 2009.

- **E3C OC6.6 (Automatic LFDD Report) pp09/23**

1200. National Grid presented pp09/23 and explained that the report to the Panel on the

work of the Group was being made in advance of the report to the E3C which was required by June 2009. The E3C had asked for a review of the LFDD scheme after the exceptional loss of generation during the incident on 27th May 2008 had led to the operation of the first stage of the LFDD scheme. Overall, the LFDD scheme had operated well on 27th May 2008. None the less some improvements had been identified for the guidance of DNO staff in the context of their involvement with the LFDD scheme. The provisions in OC.6.6 were also considered to be adequate by the Working Group. However, some minor modifications to OC6.6 to provide clarity that the LFDD requirement was based on time of forecast GB Transmission System peak demand and to other parts of the Grid Code to provide more clarity in respect of overall disconnection time were identified. CE Electric's view was that historic outturn demand should be used rather than a forecast of peak demand.

1201. AC requested that the recommendation that the LFDD requirement should be based on the time of forecast GB Transmission System peak demand should be highlighted in the consultation paper. MK requested that his opposition should be recorded to the ~~option~~ requirement for ~~that allowed~~ DNOs to use ~~issue guidance to staff that could include~~ intertripping where appropriate ~~should be recorded~~ although he was content for the issue to go to consultation. The Panel noted the report and agreed that it should be submitted to the E3C and the proposed Grid Code changes consulted upon subsequently ~~following E3C agreement~~.

Action: National Grid (NT)

- **PNs from Intermittent Generation**

1202. National Grid reported that the first meeting of the Working Group had been held on 11th May 2009. The Group discussed an extension to its Terms of Reference to include demand-side BMUs and OC2 data. The Group would consider alternative ways of submitting PNs at its next meeting scheduled for 2nd July 2009. JN commented that the Group was also still attempting to understand the extent of National Grid's problem with intermittent generation and how submission of PNs from all such generation would contribute to resolution of the problem. This will also be covered at the next meeting.

7. Pending Authority Decisions

- **B/09 – Grid Code Requirements for Category 5 Intertripping Schemes**

1203. The Panel noted that the Report to the Authority for B/09 had been submitted to Ofgem for determination on 25th March 2009.

8. Authority Decisions

- **E/08 – Grid Code Requirements for Forecast Generation Output**

1204. The Panel noted that the Authority had rejected E/08 on 19th March 2009.

- **F/08 – Grid Code Requirements for System-to-Generator Operational Intertripping Schemes**

1205. The Panel noted that the Authority had approved F/08 on 3rd March 2009 for implementation on 16th March 2009. It was also noted that the Authority expressed concern in the Decision Letter that the Grid Code was not explicit in terms of the alternate arrangements for System to Generator operational intertripping schemes that may be agreed between offshore generators and NGET as a consequence of the change to the boundary between that generator and NGET. The Authority therefore considered that NGET should undertake a further review of the System to Generator operational intertripping schemes descriptions and requirements in the Grid Code in parallel with the implementation of the proposed offshore transmission regime. National Grid confirmed that it would be undertaking this review.

Action: National Grid (TI)

- **G/08 – Grid Code Requirements for the GB Transmission System Network Data File**

1206. The Panel noted that the Authority had approved G/08 on 18th March for implementation on 1st April 2009.

- **A/09 – Generating Units Exceeding Rated MWs**

1207. The Panel noted that the Authority had approved A/09 on 30th April 2009 for implementation on 1st May 2009.

9. Short Circuit Ratio

1208. National Grid explained that following the discussion of this issue at the September and November 2008 Panel meetings it had now received information about these large machines from manufacturers of large turbo alternators up to 2000MVA following support from Panel Members. This information did confirm that achievement of an SCR of 0.5 as currently required by the Grid Code would create significant problems for the manufacturers in terms of the size of these units in the context of transportation. The critical size in the context of the SCR appeared to be around 1400MVA. Although National Grid had arranged a meeting with one of the remaining manufacturers in June, it now believed it had sufficient information to consider proposing a change to the SCR in the Grid Code for large units. There were a number of options for taking the matter forward. For example a working Group could be established to examine the effects on the system of relaxing the SCR or National Grid could take the matter forward straight to consultation with the agreement of the Panel. The Panel agreed with the latter approach. National Grid agreed to issue a consultation paper accordingly after the meeting with the remaining manufacturer in June 2009.

Action: National Grid (NT)

(Post meeting note: In line with PC4.4.2 below and the importance of benefiting from the expertise Panel members can provide on Grid Code amendments, National Grid intends to circulate by end of June 2009 to Panel members a draft report and draft text changes to seek their comments. This would then be followed by an industry consultation in August 2009).

10. Planning Data – PC.4.4.2 (pp09/24)

1209. National Grid presented pp09/24 and reported that it had now reviewed the provisions of PC.4.4.2 thoroughly and concluded that the requirements for submission of planning data 28 days after contracts were signed could be relaxed so that only 10% of the data required under the DRC was submitted within the 28 days required in PC.4.4.2 (Phase I). The remaining 90% of the data required under the DRC could be provided within 2 years of the completion date of the project (Phase II). In the interim period National Grid would use generic data unless it considered it necessary to request some Phase II data from the User sooner in specific cases.

1210. Panel Members welcomed the outcome of National Grid's review of PC.4.4.2 in the context of streamlining the connection process for Developers whilst ensuring that National Grid received the data it needed at the right time to ensure a compliant connection. National Grid will issue a draft report and draft text changes to Panel members for their comments to be followed by an industry consultation on the Phase I and Phase II approach to the provision of data under PC.4.4.2.

Action: National Grid (NT)

11. Embedded Generation Loss Risk of High System Frequency Incident (pp09/25)

1211. National Grid presented pp09/25 and explained that following the update provided to the Panel at the November 2008 meeting, it had continued to work to improve the quality of the data provided by DNOs identifying the extent of embedded generation on their systems that could be lost during a high system frequency incident. This could potentially be as much as 6GW at over 50.5Hz. This level of loss was considered highly unlikely but, none the less, National Grid had conducted a simplified analysis of the data to model the possible extent of the loss. This analysis indicated in one scenario that there was a 50% chance that the GB system was insecure for a credible 1000 MW demand loss or equivalent system event(s) that causes a frequency rise to 50.5Hz and consequent generation tripping taking into account the normal amount of reserve that National Grid held to secure the system for a generation loss of 1320MW. Two other scenarios showed higher probabilities that the system would be insecure for the same credible event(s) that cause frequency to rise to 50.5Hz, also taking into account the normal amount of reserve held to secure the system for a generation loss of 1320MW.

1212. Based on this simplified analysis, National Grid judged that the risks from a high frequency incident were too significant to ignore. National Grid therefore proposed that it should seek to refine the information and undertake further analysis in order to determine the impact on system security of increasing the high frequency settings of generation for:

- 5MW stations and above
- 1-5 MW
- below 1MW

and identify a size threshold above which the DNOs should review the high frequency settings requirements for new plant and approach existing plant owners to consider if their settings could be raised above 50.5Hz. National Grid also proposed that the issue should be pursued through the existing E3C Working Group considering the frequency obligations of embedded generation and updates provided to the E3C on the issue.

1213. Several Panel Members asked whether effort should be directed at other solutions to the problem such as taking steps to ensure no significant loss of demand or by National Grid simply holding more reserve. National Grid indicated that a credible loss of demand could be difficult to predict and it would need to consider the efficiency of holding more reserve compared with raising the over frequency relay settings on such plant. MK accepted the importance of continuing with this exercise as was envisaged in the original paper. An understanding of the benefits of altering the over frequency relay setting would be important and any consequential amendments to the Distribution Code and also whether the setting was physically capable of alteration. He would brief the Distribution Code Review Panel accordingly. It was noted that the Working Group should not be given confidential information about individual generating plant.

1214. The Panel agreed that the E3C Working Group should consider further the issues associated with the loss of embedded generation consequent on a credible high frequency excursion based on further input from DNOs to National Grid regarding the plant in their areas and with a view to reviewing the high frequency settings on such plant, subject to the caveats raised by Panel Members during discussion. The Panel also agreed that National Grid should keep the E3C informed of developments.

Action: National Grid (NT)

12. EWEA/EWIS Developments

1215. There were no further significant developments to report.

13. Offshore Transmission

1216. Ofgem provided an update on the development and implementation of the Offshore Transmission regime. The final phase of consultation on the offshore regime was now completed and it was expected that Decision Notices by the Secretary of State would be issued in early June in time for the implementation of "Go-Active" for the regime on 24th June 2009. The administrative burden of implementing the designated changes should therefore be spread over several weeks.

14. Impact of Other Code Modifications (Post Meeting Note)

- **BSC**
  - Timing of Gate Closure and Related Matters (Issue Group 35)

1217. BSC Issue Group 35 had been stood down for the time being by the BSC Panel. The Group had recommended to the BSC Panel that there was no clear case for a reduction in gate closure at present.

- Black Start & Fuel Security

1218. P231 (Black Start and Fuel Security Code Procedures under the Balancing and Settlement Code) and P232 Alternative (Black Start and Fuel Security Compensation and Single Imbalance Price Derivation) were approved by the BSC Panel for submission to the Authority for approval. There is the potential for P231 to necessitate consequential Grid Code changes. There could be a need for a joint BSC/Grid Code Working Group in future to consider issues surrounding a partial shutdown. National Grid would keep the Panel informed of developments.

Action: National Grid (TI)

- Boundary Point Metering and BMU Issues (Issue Group 37)

1219. The BSC Panel had agreed to establish Issue Group 37 to consider whether the current arrangements for boundary point metering and registration of BMUs could be simplified for the benefit of Developers of CCGT and offshore wind farms. The first meeting of the Group would take place on 3rd June 2009. Generator Panel Members expressed a keen interest in the work of this Group and the importance of the need to ensure that metering and BMU registration arrangements were simplified especially for offshore wind farms, given the large potential numbers of such projects in the future. National Grid noted these comments and agreed to monitor developments in the Issue 37 Group and consider how to take the matter forward in the context of the Grid Code.

Action: National Grid (TI)

- **CUSC**
  - Transmission Access Modifications - CAP161-166 (pp09/15)

1220. These Amendment Reports are currently with Ofgem for their consideration and ultimately a decision by the Authority on whether the amendments will be made. Ofgem were expected to issue Regulatory Impact Assessments (RIAs) for all these Amendment proposals in due course.

- **CAP170 – Category 5 Intertripping Schemes**

1221. As discussed in the context of Grid Code Consultation B/09, progress on this Amendment Proposal was awaiting issue of a RIA by Ofgem (post meeting note – the RIA was issued by Ofgem on 21st May with a deadline for responses of 2nd July 2009).

- **Industry Code Governance Review**

1222. It was noted that final report of the Code Administrators Working Group was issued in April with a deadline for responses by the end of May. Given that there were a number of models being considered, it was agreed that the Panel Chairman should send a response on behalf of the Panel indicating that the Panel did not believe

there was a case for significant changes to the current Grid Code governance model. Consultations on other work strands such as the approach to Major Policy Reviews/Self Governance arrangements and Charging Methodologies governance were expected to be issued in the near future.

Action: National Grid (TI)

15. Any Other Business

- **AOB01 – Change of Employer for Alternate Panel Member for Novel Units**

1223. National Grid informed the Panel that the Alternate Panel Member for Novel Units had recently changed employer. The Panel Member for Novel Units had re-confirmed to National Grid his nomination of the Alternate Member in the light of this change of employment.

- **AOB02 – Multi Unit BMUs Update pp09/26**

1224. National Grid presented pp09/26 and explained that since the number of faxes received by National Grid for notification of reduced output below SEL was still around 3 per week it was proposing continuation of the current arrangements for access to MW below SEL. JN requested that National Grid consider incorporating electronic arrangements for notification of reduced output below SEL in the BM Replacement project and National Grid agreed to consider this.

Action: National Grid (BT)

1225. It was noted that offshore wind farms could be equivalent to multi-unit BMUs and that there could therefore be some overlap with the Working Group considering PNs from intermittent generation. BT as chair of the Working Group indicated that the Group would consider the configuration of offshore wind farms at a future meeting.

- **AOB3 – Generator Target Voltage Instructions**

1226. National Grid gave the Panel a presentation on the progress of the joint exercise with Generators on Target Voltage Instructions. With the Panel's support, National Grid had conducted a programme of exercising the use of target voltage instructions in order to obtain assurance on the effectiveness of the instructions. Most of the exercises had been successful but a number of issues had been identified where improvements could be made. These issues included a lack of familiarity with National Grid's objectives and a high reactive power output perhaps due to changing voltage by adjusting excitation rather than tapping the generator transformer. Overall however, National Grid believed that there was adequate assurance of the effectiveness of target voltage instructions for contingency circumstances arising from the exercise and thanked generators for their cooperation. Work would continue to ensure that new stations coming onto the system could respond to target voltage instructions. JN requested that National Grid issue a briefing note on what was expected from Generators in the future as a result of the exercise and also requested that future contacts on the issue should be channelled through Trading Points within the Generators so that the Generator's response could be coordinated.

1227. National Grid agreed to consider these requests and respond in due course.

Action: National Grid (BT)

- **AOB4 – Voltage Range and Frequency Range**

1228. JM raised the issue of the current lack of specification of the Voltage Range for Generators in the Grid Code and whether this should be continuous or discontinuous. A similar current lack of specification in the Grid Code also applied to the Frequency Range for Generators and the period that generating plant could be expected to operate at very low frequency levels such as 47.5Hz. These issues had come to light during consideration of a specification for Generation in Europe. JM indicated that he had already discussed these issues informally with NT. JM

suggested that the issues should be added to table 2 (Outstanding Issues) of the Current Status Report and this was agreed by the Panel.

Action: National Grid (RD)

16. Date of Next Meeting

1229. The next meeting will be held on 17th September 2009 at National Grid House, Warwick. The meeting will commence at 10:00am.