

Grid Code Review Panel Meeting

Minutes and Actions Arising from Meeting No. 40 Held on 19th November 2009 at National Grid House, Warwick

Present:

David Smith	DS	Panel Chairman
Kabir Ali	KA	Panel Secretary

National Grid

John Greasley	JG	Member
Brian Taylor	BT	Member
Tom Ireland	TI	Alternate Member
Francis Vary	FV	Presenter (Item 8 – Simultaneous tap change)
Nick Morris	NM	Presenter (Item 15 – ENTSO E Developments)

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

John Norbury	JN	Alternate Member
Claire Maxim	CM	Member
Campbell McDonald	CMc	Alternate Member

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

David Ward	DW	Member
------------	----	--------

Generators with Small and Medium Power Stations Only

Barbara Vest	BV	Member
--------------	----	--------

Network Operators in England and Wales

Alan Creighton	AC	Member
Mike Kay	MK	Member (via teleconference, part)

Network Operators in Scotland

Dave Carson	DC	Member
-------------	----	--------

Relevant Transmission Licensees

Graeme Vincent	GV	Alternate for Alan Michie
----------------	----	---------------------------

Generators with Novel Units

Guy Nicholson	GN	Member
---------------	----	--------

Ofgem Representative

Bridget Morgan	BM	Member (via teleconference, part)
----------------	----	-----------------------------------

Non Embedded Customers

Alan Barlow	AB	Member
-------------	----	--------

BSC Panel Representative

John Lucas	JL	Member
------------	----	--------

1. Introductions/Apologies for Absence

1268. Apologies for absence were received from Yvonne Ryan (Generators with Large Power Stations), Jim Barrett (Alternate - Generators with Large Power Stations with total Reg. Cap.> 3GW), Chandra Trikha (Relevant Transmission Licensees), Sigrid Bolik (Generators with Novel Units) and Neil Sandison (Network Operators in Scotland).

2. Minutes of Previous Meeting

1269. The draft minutes of the Grid Code Review Panel meeting held on 17th September 2009 were APPROVED subject to the comments received and will be available on the Grid Code website in due course.

Action: Panel Secretary

3. Review of Actions (pp09/30)

1270. All the outstanding actions from the previous meetings have been completed or were the subject of agenda items, except for:

- (Minute 1258) Black start

National Grid informed the members that this issue is with the BSC working group and is awaiting feedback on the next steps. National Grid to inform of next steps.

Action: National Grid

- (Minute 1263) Inter-connector outage data

National Grid informed the Panel that a consultation was published and is due to close on the 3rd December 2009. A member informed the group that there is an alternative proposal which is different in the way the data is currently presented and published. The alternative proposal allows data to be presented on BMU levels rather than fuel types. National Grid to investigate whether there are any implications in the Grid Code.

Action: National Grid (TI)

- (Minute 1265) Speakers

National Grid to find out whether it is feasible to improve the quality of the teleconference system.

- (Minute 1204) Inter-tripping schemes F/08 – Offshore

A member raised concerns over the wet offer his company had received, there were issues over where the interface signal point should be. Usually National Grid would provide the interface signal point at a substation level near the generating unit as opposed to the current offer. National Grid to review the procedure.

Action: National Grid

4. Grid Code Development Issues

Grid Code Consultation Update

1271. B/09 was sent to the Authority on the 25th March 2009. The Authority re issued the Regulatory Impact Assessment for CAP170 and it is now awaiting a decision from the Authority.
1272. C/09 (Housekeeping Amendments) is awaiting further developments as to whether further housekeeping changes, introduced by Version 4 of the Grid Code (designated on 24th June 2009 to reflect “Go-Active” for the Offshore regime), could be rolled up into one house keeping change.

Grid Code Review Panel Meeting

1273. D/09 (Automatic LFDD) The Consultation was issued on 3rd September 2009 with a request for comments by 1st October 2009. Comments have now been received and a Report to the Authority is being drafted. The Report is scheduled to go out to the Authority by the end November 2009. National Grid will send out a letter to all the DNO reps regarding the non Grid Code actions arising from the Working Group.

Action: National Grid (TI/MP)

1274. E/09 - Consequential Modification to Reactive Provisions CAP169. The Report to the Authority is expected to be published shortly.
1275. F/09 - Grid Code changes relating BSC Proposal P243. The Consultation was issued on the 6th November 2009 with a request for comments by the 3rd December 2009. National Grid to keep the Authority informed with regards to time scales, for the required implementation.
1276. G/09 Short Circuit Rating, The Consultation was published on the 12th November 2009 with a request for comments by the 10th December 2009.

5. New Grid Code Amendments

Frequency & Voltage Operating Range

1277. National Grid presented a paper to the Panel that described the existing requirements for Frequency and Voltage Operating Ranges for a generating unit to remain connected to the transmission system. It had been suggested by Users that these requirements appeared to be more stringent than those required internationally. National Grid recommended that a new Grid Code Working Group is convened based on the draft Terms of Reference (TOR) to review the frequency and voltage range defined in the Grid Code. The Panel supported the idea and the group concluded that the content in the Draft TOR should be expanded. It was suggested that background information could be prepared by National Grid to allow quick progress to be made in the first Working Group meeting in the identification of areas of concern and the lessons learnt from previous system incidents. In addition, it was noted that there was some overlap with the Frequency Obligation of Small Generators Working Group although the panel concluded that the two Working Groups should not be merged as the former was just Concluding. Panel Members suggested that the Working Group discussion would allow the paper presented to be refined (.e.g. frequency of relevant system events). A Panel Member stated that the words "time limited" should be replaced with "limited time". The Panel agreed the TOR and agreed that the Working Group should report back to the May GCRP.

Action: National Grid (JG)

6. Working Groups

▪ Compliance Working Group

1278. John Greasley (JG) gave a brief update on the Compliance Working Group informing the Panel that the Working Group had come to an end. The technical performance notes provided to Ofgem have been approved and are now available in the Grid Code. An updated draft Working Group Report is to be circulated in due course by National Grid. The revised Grid Code text proposals are being developed by National Grid and will be circulated to the Working Group shortly as a result of codification of the Compliance process.

Action: National Grid (JG)

▪ Gas Insulated Switchgear (GIS)

1279. TI discussed the relevant issues and explained that GIS is essentially large steel tubes containing switchgear surrounded by an insulated gas. There is no standard construction for these assets, each manufacturer has its own standard of construction which makes it difficult for a generator to install a different

manufacturers equipment for their generator bay, once a particular manufacturer has been chosen by the site owner. For that reason there is lack of competition within this market. Due to the physical nature of these assets, it is difficult to distinguish the ownership boundaries. The GIS working group is concerned with identifying all current issues with GIS and to identify all possible options to resolve issues for both Generation and DNO connections taking into account Grid Code and CUSC consequences. A preferred option by the Working Group is to be identified and taken forward. The Working Group is currently considering, four possible options which are to be explored further, as below. These options are not thought to be mutually exclusive:

- No change
- Move standard boundary position for all
- Allow user choice between two standard boundaries
- Single party builds all GIS assets then transferred to current ownership assets

The Working Group is to report back to the February GCRP and the CUSC Panel to assess the completion of the revised TOR.

Action: National Grid (TI)

▪ BSSG Frequency Response

1280. The BSSG Working Group was established to assess the technical and commercial aspects of frequency response for current and future generation mix and new technologies. Frequency response is mandatory under the Grid Code for all generation. Generation must be able to provide primary response within 10s. The Working Group is to assess the existing Grid Code obligations for its appropriateness for the current environment. It was highlighted that the potential providers of many of the new generation technologies have stated they will not be able to meet such obligations. The Working Group is to identify feasible options taken into account of the next generation of power plants. Several scenarios have been identified and are currently being examined:

- Discharging obligation through procurement
- Obligation at portfolio level
- Obligation differing for new technologies
- Demand side response
- Establishment of a full market
- SO provides response

1281. National Grid reported that the Working Group has not been able to quantify the overall costs for new plant to meet Grid Code requirements for Frequency Response. Panel members who participated within the Working Group felt that it was somewhat difficult to quantify costs at this time e.g. without baseline costs developed. National Grid agreed to provide broad assumptions to the Working Group members in order for the costs to be estimated. A Panel Member suggested that National Grid should look at how other countries have been able to do this as a starting point. National Grid is to amend the TOR, for the inclusion of world wide comparisons.

Action: National Grid (TI)

1282. Panel Members were informed that another potential future frequency response provider had been involved in the Working Group discussing code issues (UK-Dutch interconnector Britned). Britned had the capability and technology to provide frequency response at the required level and potentially more; However, there were numerous commercial and code issues that hindered such participation. A draft terms of reference (TOR) was sent to the last CUSC Panel who agreed that the BSSG Working Group was best placed to progress the issues.

▪ E3C Small Embedded Generators Frequency Obligations

Grid Code Review Panel Meeting

1283. The Working Group is reviewing the resilience of Small Embedded Generation with regards to high and low system frequency excursions and identifying options to improve resilience. A representative from each DNO has been asked to send letters to all of their directly connected generators (between 5 and 50MW) to obtain current data to determine whether Protection Settings and Frequency settings can be increased to improve the resilience of these plants in parallel with Distribution Code changes. To date some feedback had been received with a positive response but there still remains a large amount of outstanding responses to be received. The Panel had questioned why letters were not sent out to the Medium Power Station and National Grid believed Medium Power Stations have different obligations but agreed to seek confirmation whether that was accurate. DS is to send a letter to chase responses to the DNO letter via the AEP and BV, to increase the response rate.
1284. Members of the panel were informed that the protection settings were being reviewed as a two stage protection setting rather than a performance obligation. These were, under frequency: 47.0 Hz (0.5s) – 47.5 Hz (90s) and Over Frequency: 52.0 Hz (0.5s) – 51.5Hz (90s). The lower MW threshold was also being considered to which existing generators the revised protection setting should apply (e.g. between 1MW & 5MW). National Grid requested support from the Panel Members. Members of the Panel were informed the most likely approach to be adopted was to implement the protection arrangements proposed as part of a review of ER G/59. The lower threshold of 5MW would be reviewed when sufficient feedback from generators who had been contacted by the DNOs, responded.

Action: National Grid (TI)

▪ Informal Group Protection Specialist

1285. National Grid informed the Panel that an informal Working Group had been set up to bring transparency to fault clearance and back-up protection issues specified in the Grid Code. In March 2009 a survey was issued in order to identify current arrangements used for protection by the Generators. National Grid was not able to provide some of the information requested by the survey due to confidentiality and technical issues. CM asked what the nature of the confidentiality was. National Grid is now in the process of meeting with the parties concerned to discuss alternative arrangements to resolve this issue. National Grid to investigate whether any Grid Code amendments would be needed.

Action: National Grid (TI)

▪ PNs from Intermittent Generation

1286. National Grid updated the panel on current status of the Working Group., including the amendment of the current arrangements for the provision of BM and OC2 data to facilitate the provision of intermittent generation. The Working Group are reviewing the existing definitions and the processes for utilising the data provided by generators in operational timescales to enable National Grid to manage the transmission system to determine their fitness for purpose with regard to intermittent generation and propose changes to ameliorate any shortcomings. It is anticipated that a report to the Grid Code Panel will be submitted February 2010, however this may need to be extended depending on the progress made at the January Working Group meeting. The Working Group has developed draft definitions which will be further developed as the work of the group progresses. The Group is also looking at the utilisation of BM data from intermittent generation post gate closure. There is concern that taking Bids and Offers against PNs which for intermittent generation are likely to be less accurate than those from other forms of generation could lead to higher BSIS costs. Two ideas have been proposed:

- Altering the way in which current parameters are used
- Introducing a new parameter 'power available to represent the output of a generator had the output not been changed by a BOA.

Grid Code Review Panel Meeting

The Group recognises that introducing separate arrangements for intermittent generation could be considered as discriminatory and will cover this in the Working Group Report

Action National Grid (BT)

7. Pending Authority Decisions

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

1287. The Panel noted that the Report to the Authority for B/09 had been submitted to Ofgem for determination on 25th March 2009 at the same time as CAP170. Ofgem had undertaken a second consultation on the RIA for CAP170 with a closing date of 28th August 2009. BM confirmed Ofgem are still looking into this.

8. Authority Decisions

1288. The Panel noted that there had been no Authority decisions.

9. Generator Reactive Despatch Simultaneous Tap Change

1289. Francis Vary (FV) gave a presentation to the Panel highlighting the need for Simultaneous Tap Changing (STC) to enhance voltage control during periods of low system voltage. STC is used infrequently hence it would be useful for National Grid and the Generators to practice using the process. The Panel agreed that the Generator community needed to know more about STC before any practice runs took place. It was agreed that National Grid would deliver a presentation on STC to the Operational Forum and produce a note on when STC is required, how it would be instructed and what is expected from Generators. The note should also be circulated to the Balancing Services Standing Group. FV is to report back at a future GCRP

Action: National Grid (FV)

10. Basic Electrical Safety Competence (BESC)

1290. In January 2009 National Grid published a letter to the industry outlining the adoption of the BESC framework arrangement. The intention is for external Authorised Persons to complete a BESC Authorisation and annual refresher course through computer base training, going forward. At the May and September GCRP members raised concerns over the complexity and transition of such arrangement. In October 2009 the implementation of BESC was in motion when the concerned members met with Steve Bath the National Grid representative leading this implementation. At the November GCRP members were still concerned in the way the BESC was imposed and implemented. Several members felt that they were pushed into a position which they did not want to take. Panel members could not understand how the BESC was adding any value to the already senior qualified staff and they felt that this was inappropriate in relation to their existing qualification and authorisation. The Panel Chairman agreed there may be a need for further consideration in this area, including but not limited to the governance surrounding implementation of BESC. National Grid to investigate whether alternative accreditations could be used (schemes).

Action: National Grid (TI)

11. Delegations of Authority (DOA)

1291. National Grid updated the Panel on debate surrounding the possible codification of the DOA contracts in the Grid Code. The DOA contracts allow switching of third party users assets by National Grid. The legal advice given to an alternative Working Group looking at Multi User Switching Agreements suggested that it would be difficult to incorporate the codification of such a contract. It was suggested that a

Grid Code Review Panel Meeting

bilateral contract may be more suitable. Furthermore not all parties have or want DOA contracts. Many of the Panel Members felt that it was National Grid trying to impose these contracts but it was made clear that National Grid have no desire to force these contracts on companies who do not already have these. The Panel Members would like more clarity on legacy documents surrounding this area (where the current arrangements sit and who has legacy arrangements). National Grid to investigate whether alternative arrangements could be reached, if we could provide details to parties of whether they have legacy agreements, and to provide additional feedback from the Working Group looking at Multi User Switching Agreements.

Action: National Grid (TI)

12. Harmonic Tolerances

1292. National Grid informed the Panel Members that they believe a review of the processes used in analysing and allocating harmonic emissions, as described in ERG5/4, is required. Harmonics were becoming more of an issue as more and more different types of Users were being connected to the transmission system. The current processes of allocating headroom on the first come first served basis was not necessarily most efficient. The panel agreed with National Grid that ENA governance structures should be used to review ERG5/4 and for National Grid to write to ENA explaining their view of the issues and defect.

Action: National Grid (JG)

1293. [Post meeting note: MK confirmed that ERG5/4 is a Distribution Code document and so the DCRP must agree if the document is to be altered]

13. Transients

1294. National Grid was giving further consideration to whether provisions should be included within the Grid Code detailing acceptable levels of switching voltage transients. A specific issue had arisen at a site where the charging of an embedded power station's circuit may have given rise to transient over-voltages that triggered protection relays at a local transmission connected power station. This specific issue is being addressed with the affected third parties. There are no current provisions within the Grid Code for such issue and the rated insulation levels are contained within the Relevant Electrical Standards. National Grid does not believe it would be appropriate to introduce this into the Grid Code. The Panel members were somewhat concerned over the fact that transients could be put on the system without any generating units raising any concerns. National Grid suggested it arrange a one-off meeting with industry members to discuss this issue further.

Action: National Grid (JG)

14. Constant Terminal Voltage Control

1295. Users seeking to connect and use the NETS have queried National Grids interpretation of "constant terminal voltage control" as referred within CC.6.3.8 with the requirements of CC.6.3.4. National Grid expressed their differing interpretation of the requirements for constant voltage control in the Grid Code. The Panel were asked to consider whether more clarity is required in the Grid Code. Members suggested that National Grid should state what their requirements are not how one would meet the requirements. National Grid agreed to clarify what is required.

Action: National Grid (JG)

15. Multi Unit BMU

1296. The panel were updated on the current processes of receiving Multi Shaft CCGTs notification. The current process involves a fax pro-forma being sent to National Grid indicating any MW available, which would not normally be accessible within BM timescales. Indications are also given as the notice time required. The Panel noted

the continuation of the current arrangements and asked National Grid to report back on how this process would be incorporated into the new Balancing Mechanism System.

Action: National Grid (BT)

16. BMU Configuration

1297. Offshore Power Stations are comprised of a large number of strings which can be aggregated into a fewer number of BMUs to reduce the administrative burden on the Generator and National Grid. To maximise the utilisation of the offshore networks under outage conditions, strings would have to be transferred between BMUs. To allow for this 2 changes to the BSC are required: P237 and P240. P237 has been approved and P240 is with Ofgem for approval. Moving strings between BMUs will result in range of operating arrangements for the offshore network which will be operated by National Grid. To reduce the risk of any misunderstanding with regard to the configuration of the generation and network, in a paper presented to the Panel, National Grid proposed that a BMU configuration diagram should be produced in planning timescales (to define the default arrangement) and in operational timescales. Once both BSC changes have been approved National Grid will consult on the legal drafting to allow the Grid Code to be amended to facilitate the production of the BMU Configuration Diagram.

17. ENTSO-E

1298. The panel were presented with a high level overview presentation of ENTSO-E, which is now available on our website. They are the new electricity association representing TSO member interests throughout Europe, based in Brussels. They are the Formal Legal Advisory body to the European Commission and have fairly wide remit, including the responsibility for developing EU-wide Network Codes. It consists of 42 members with a mandatory TSO participation. They are concerned with developing common network operation tools and research plans.

18. Key Performance Indicators (KPI)

1299. The Panel agreed these are to be discussed at the next meeting in February 2010

19. GCRP Meeting Dates 2010

1300. The Meeting dates for 2010 were approved.

20. Impact of Other Code Modifications

▪ BSC

- Black Start & Fuel Security

1301. Black Start modifications P231 & P232 which clarify the BSC procedures was implemented in November.

- Offshore Wind Farms (P237 & P238)

1302. P237 and P238 have been approved.

▪ CUSC

- Transmission Access Modifications – (CAP161-166 and CAP171-172)

1303. These Amendment Reports are currently with Ofgem for their consideration and ultimately a decision by the Authority on whether the amendments will be made.

▪ CAP170 – Category 5 Intertripping Schemes

1304. In the context of Grid Code Consultation B/09, progress on this Amendment Proposal was awaiting responses to the issued RIA by Ofgem (the RIA was issued

Grid Code Review Panel Meeting

by Ofgem on 21st May and then re-issued with a deadline for responses of 28th August).

- **Industry Code Governance Review**

1305. There are two consultations at present under the general heading of the Code Governance Review – one relating to major policy reviews and the other relating to the role of the Code Administrators.

21. Any Other Business

- **AOB1 – Speaker system for the next meeting**

1306. National Grid agreed to explore the use of additional speakers for telephone participants to improve the clarity of their participation.

Action: National Grid

22. Date of Next Meeting

1307. The next meeting will be held on 4th February 2010 at National Grid House, Warwick. The meeting will commence at 10:00am.