

## Minutes

<b>Meeting name</b>	Grid Code Review Panel
<b>Meeting number</b>	60
<b>Date of meeting</b>	20 <sup>th</sup> March 2013
<b>Time</b>	10:00am - 4:00pm
<b>Location</b>	National Grid House, Warwick, CV34 6DA

## Attendees

<b>Name</b>	<b>Role</b>	<b>Initials</b>	<b>Company</b>
Ian Pashley	Chair	IP	National Grid
Robyn Jenkins	Secretary	RJ	National Grid
Thomas Derry	Member	TD	National Grid
Bec Thornton	Member	BT	National Grid
Graham Stein	Member	GS	National Grid
Audrey Ramsay	Member	AR	National Grid
Richard Lavender	Advisor	RLa	National Grid
Antony Johnson	Presenter	AJ	National Grid
Shaf Ali	Presenter	SA	National Grid
Adam Hipgrave	Observer	AH	National Grid
Alan Barlow	Member	AB	Magnox
Jim Barrett	Alternate	JB	Centrica
Steve Brown	Member	SB	Ofgem
Alan Creighton	Member	AC	Northern Powergrid
Tom Davies	Member	TDA	Magnox
Joseph Dunn	Member	JD	SPT
Alastair Frew	Member	AF	ScottishPower
Gordon Kelly	Member	GK	ScottishPower
Richard Lowe	Alternate	RL	SHET
Guy Phillips	Alternate	GP	E.ON UK
Campbell McDonald	Alternate	CMd	SSE Generation
Guy Nicholson	Member	GN	Senergy Econnect
John Norbury	Member	JN	RWE
Neil Sandison	Alternate	NS	SSE
Barbara Vest	Member	BV	Energy UK
Julian Wayne	Alternate	JW	Ofgem
Andy Vaudin	Observer	AV	EDF

## Apologies

<b>Name</b>	<b>Role</b>	<b>Initials</b>	<b>Company</b>
Sigrid Bolik	Alternate	SBO	REpower
Roger Harris	Alternate	RH	Elxon
Alan Kelly	Alternate	AK	SPT
Mike Kay	Member	MK	ENWL
John Lucas	Member	JL	Elxon
John Morris	Member	JM	EDF Energy
Xavier Pinchaux	Alternate	XP	RTE
Brian Punton	Member	BP	SHET
Lisa Waters	Alternate	LW	Waters Wye
Brendan Woods	Member	BW	SONI

## 1 Introductions & Apologies

3018. The Chair welcomed the group and the apologies were noted.

## 2 Approval of Minutes

### a) January 2013 GCRP Minutes

3019. The Panel approved the minutes for publication.

3020. **ACTION: RJ** Upload minutes on to the National Grid website.

## 3 Review of Actions

### a) Summary of Actions

#### *Significant System Events Report (previously RoCoF Report)*

3021. Minute 2722 – GS presented pp13/16, he explained that this is an addendum to the Significant System Events Report which aims to provide additional information based on new analysis applied to higher resolution frequency information. The paper includes a measure of residual inertia, which is lower than assumed on a historic basis. Locational differences of point 0.05Hz per second have been observed and further work is needed to look at what this means in terms of RoCoF based protection systems. GS noted that the intention is to look at future instances in this way for applicable incidents.

3022. GN asked whether, in the table in appendix 1, the historical data is all based on a 2s average? GS confirmed this was that case and highlighted that RoCoF relays have a measurement period of 500ms and will operate if rate of change remains higher over that time. GS also noted that the millisecond data after that comes from different sources at different locations.

3023. GN asked for an explanation of appendix 2. GS explained that the graph depicts the inertia in the system overnight as provided by transmission contracted generation, and there is a clear downwards trend. GS added that this simply reflects that fact that the more synchronous generation there is running then the more inertia there is. As synchronous generation is displaced by other sources then the number goes down. GS also stated that it is likely that there is trend within demand (as observed from the transmission system), but there are no measurements to corroborate this as yet.

3024. This action is complete and can be closed.

#### *A/12: Information Required To Evaluate Sub-Synchronous Resonance*

3025. Minute 2678 – GS informed the Panel that this briefing is scheduled for the 2 May 2013 and the Report to the Authority is being drafted.

#### *Grid Code Modification Process*

3026. Minute 2622 –RJ informed the Panel that the document will be moved once the website is refreshed. This action remains ongoing.

#### *Protection Fault Clearance Times and Back-up Protection*

3027. Minute 2678 – RJ informed the Panel that there is no update available. This action remains ongoing.

#### *G5/4 Harmonics*

3028. Minute 2943 – GS explained that National Grid need to determine what information can be published, noting that more monitoring equipment is being installed as a longer term solution. In short term as TO and not as NETSO National Grid may be able to make some general statements about harmonics. Therefore GN asked for update from the other Transmission Owners on what is happening with harmonic monitoring and data

provision as stated at January meeting. RL agreed to take the question back to the office and provide an update at the next meeting.

3029. **ACTION: RL** - Provide update on Harmonic monitoring at the next meeting.

#### *Revision of Engineering Recommendation P28*

3030. Minute 2866 – RJ noted that the DCRP are looking for a Workgroup chair, when a suitable person is found, the workgroup will progress. This action remains ongoing.

#### *Consequential changes from CA049*

3031. Minute 2872 – AR noted that further questions have been raised internally so the aim is to bring something back in May. This action remains ongoing.

#### *Constant Terminal Voltage*

3032. Minute 2886 – RLa noted that some very good discussions have taken place and both parties have unconditionally agreed to accept National Grid's understanding of Constant Terminal Volts in the Grid Code and request a derogation. GP noted that although both parties have accepted the need for derogation for these two particular stations, there are still questions over whether CC6.3.8 is sufficiently clear to all parties. One of the issues is that the Grid Code seems to specify exactly how Constant Terminal Voltage should be achieved, whereas continental practices are understood to be different. GP noted that one of the parties he represents has asked whether National Grid can provide clarity on why GB differs from the continent.

3033. JN noted that this issue suggests there is need to review the current code to clarify the requirements and also establish whether it is still fit for purpose in the light of current technologies. IP asked whether the action should be looking at why we are different.

3034. **ACTION: GS** – Provide an update on why GB requirements are different to European Requirements for the July Panel meeting.

3035. Minute 2887 – TD noted that National Grid has developed a workshop internally, which will be run again internally before circulating to BV for testing, but the action is on track to go externally in June. BV asked how this went internally. TD explained that the session was well received and the main area to work on is to include more examples and show how the requirements fit to each other. BV noted that National Grid do very well during the connections process, but once a project goes live there are a different set of people involved and this is the area that needs work, adding that she was pleased we have taken the suggestions on board. This action remains ongoing.

#### *Space Weather*

3036. Minute 2923 – IP noted that the information was issued bi-laterally to the relevant generators on 6 March 2013. RJ added she has the names of the E3C representatives and the name of the people who received the information. AF and JN confirmed they had received certain limited information. This action is now closed.

#### *AOB*

3037. Minute 2975 – RJ noted that some photos have been received and asked the Panel to send their own photos as soon as possible. This action remains ongoing

## **4 New Grid Code Development Issues**

**None**

## **5 Existing Grid Code Development Issues**

### **a) Issues Summary**

3038. RJ informed the Panel that the issues for discussion at this meeting have been listed on the agenda.

### **b) GC0062: Fault Ride Through**

3039. AJ presented paper pp13/18 and provided a presentation summarising the ToR.

3040. GN asked whether this workgroup is for all generators, or just for synchronous as it was not clear in the presentation. AJ noted that the issues raised in paper PP12/04 were

mainly related to synchronous generation although at the time of establishing the workshops there was no intention to address only synchronous plant. He then went on to say that it was only during the course of the workshops and subsequent discussions that representatives from the wind industry advised that whilst there were still issues with fault ride through, they would not wish to undergo extensive research and development in the short term when changes would have to be introduced over the next three years with the advent of the ENTSO-E Requirements for Generators. CMd questioned whether, if trying to capture RfG as a whole, then should this workgroup consider both synchronous and asynchronous generators. AJ noted that under RfG, asynchronous and synchronous generators have different fault ride through requirements so will need to be looked at specifically in relation to each type of plant. CMd also asked whether this work is for existing or new plant. AJ replied that new and existing plant will be covered by the work.

3041. JB suggested that implementing European requirements into the Grid Code is one piece of work, and the second piece is retrospectivity, the extent of which will be considered through a consultation process.
3042. IP noted that this work provides an ideal opportunity to address three separate items of work through one example, these being:
- i) address the fault ride through issues as raised in paper PP12/04,
  - ii) Develop options for implementing the ENTSO-E Requirements for Generators and GB Grid Code using Fault Ride Through as a specific example; and
  - iii) Contribute to the ENTSO-E Pilot using Fault Ride Through as an example.
3043. CMd suggested that membership of this workgroup is key, technical aspects will require one group of people, and implementation into grid code a second and possibly a third group for the cost benefit analysis. AJ noted that a range of people attended the workshops with the full minutes and presentations being available on the National Grid web page available at:-
- <http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/workinggroups/Fault+Ride+Through/>
3044. CMd noted that the group between National Grid, DNOs and Ofgem, referred to in paragraph 3(a) of pp13/18, has not involved generators in making any decisions. IP noted that this group has been considering options only and not making decisions. The group has been looking to develop a paper and set of slides, to be presented at JESG, which outlines the options available in GB, stressing that this is not a case of these organisations making decisions on stakeholders' behalf, but rather considering a number of implementation options which JESG Members and the wider community can then consider and provide feedback.
3045. AJ noted that the pilot has been proposed by ENTSO-E, following their request to understand how these requirements will operate under the national processes. IP added that ENTSO-E will be looking for an update in September. BV asked what status an ENTSO-E request has in the GB codes. IP replied that it has no formal status; the request only asks for more information if possible. BV noted that there is a considerable amount of work still required on RfG, and requested that National Grid are mindful of undertaking work using industry resources, if this is not the correct time to do the work. She also asked what happens if the work concludes and is implemented and the rest of Europe does not do the same, could we be risking putting an extra overhead on the industry which actually disadvantages our generators. IP noted that, in this instance, anything relating to ENTSO-E is a request to see how we are doing things. He noted the Fault Ride Through work affords us an opportunity to try, giving GB stakeholders an idea, in terms of pure workload, how these processes may work. BV asked what ENTSO-E's involvement will be. IP noted that his understanding is that they will not be involved, it will be a light touch overview and the intention is not for them to intervene.
3046. IP explained why FRT had been chosen, and noted there is nothing else planned outside of normal process.
3047. JB stated concerns about the application of the ENCs, particularly regarding retrospectivity.
3048. CMd noted that an assessment of the impact of early adoption is required. AJ explained that the workgroup will need to develop requirements which are consistent with the RfG framework, the aim is to deal with directly connected plant first. CMd

added that this affects the workgroup membership. GN suggested that the size of generator also has an effect. AJ observed that the focus will be on large directly connected units first. He also noted that under the RfG, the Fault Ride Through provisions do not apply to type A generators. He added that, at this stage, any requirements that the workgroup addressed would have to be compatible with the current GB classifications of generator (ie Large, Medium and Small) rather than Types A, B, C and D as defined in the ENTSO-E RfG. GN agreed that this needs to apply to bigger plant but if smaller plant is left till later is there an associated risk. AJ agreed to provide clarification on this within the paper. IP suggested that the updated Terms of Reference are to be agreed by circulation.

3049. GS questioned whether it would be better to get the workgroup to set out the work required and an indicative scope, as that is quite an important piece of work. That would mean the workgroup can be put in place sooner rather than later. He suggested it may be worth adding to the Terms of Reference information on how the group will work and take account of Grid Code, Distribution Code and other Industry documents. IP agreed that the Terms of Reference will be improved and circulated. JB added that, if written correctly, they will attract the right people to the workgroup. IP suggested that the update could be discussed via a teleconference with relevant parties.

3050. The Panel requested that conventional plant manufacturers be added to the membership list.

3051. **ACTION: AJ** Update the Terms of Reference and circulate for agreement.

#### **c) GC0044: P276 – Partial Shutdown**

3052. TD noted that the changes from P276 will go into the BSC in March 2014 and proposed that the Consultation be brought to the May 2013 GCRP.

#### **d) GC0028: Hybrid Static Compensators**

3053. GS noted that a workshop needs to be arranged with affected stakeholders. This is likely to be May and following that some proposals may come back to the panel.

## **6 Workgroups in Progress**

#### **a) Workgroup Table**

3054. RJ noted that the Workgroup Table includes updates of the latest position of each Workgroup and an indicative timetable.

#### **b) GC0035: Frequency Changes during Large System Disturbances**

3055. GS noted that the workgroup meets every month. So far the workgroup has put in place an information gathering exercise on Loss of Mains (LOM) protection settings and the group is focusing on greater than 5MW, mostly conventional, machines. The initial work does not include smaller inverter based technologies and assessment of islands with multiple in-feeds. The workgroup are looking to split the work into stages, and an updated Terms of Reference reflecting this may come back to the May panel meeting. The workgroup are also looking at international experience, particularly that of Ireland, Germany and Spain.

3056. GS noted that, in addition to the open letter, the workgroup are organising seminars, which are likely to be London and Glasgow at the end of April and beginning of May. Through the seminars the aim is to reach those who wouldn't normally attend workgroups, and to get access to more information in terms of what technology has been used across the industry. To do so the workgroup may require the assistance of trade bodies.

3057. AC noted that last time DNOs wrote to generators there it was difficult to secure the required degree of engagement, and asked for Panel member with contacts in the small generator communities to stress the importance of this task. BV offered help and asked for the letter to be sent to her for onwards distribution. GN asked whether a decision to change RoCoF settings has been made. GS noted that the workgroup have not yet made a decision on this. GN also asked whether the workgroup are looking at minimum inertia levels for the system and how does inertia affect the change to relays. GS noted that this has not yet been considered.

### **c) GC0038: Electricity Balancing System Group**

3058. SA provided an update on F/12 noting that Ofgem are minded to remove TSL. In line with Ofgem suggestion, National Grid have drafted the guidance and are meeting with Eggborough on Monday 25<sup>th</sup> March to discuss it with them. EBSG will then review it before it is brought to GCRP. SA noted that this could be done by circulation in order to speed up the process.
3059. JN asked for clarity on where the industry stands on the submission of day ahead dynamic data referred to in BC 1.4.2(e) . He added that National Grid have said via the EBSG they currently do not want or use this data, but systems are currently set up to provide and receive it. If, when specifying new IS systems which might be required as a result of the new EBS, generators write out the capability to provide this data and then National Grid decide they do want to receive it or would use it, Generators may incur significant costs in restoring the IS system capability to submit it. If National Grid do not need this data can we amend the code to remove reference to it? SA noted that EBSG have discussed this, he explained that provision of day ahead dynamic data is not an obligation and National Grid have said quite clearly that they do not use it. He added that there will be further Industry communication through the operational forum and GCRP, possibly via email. For the avoidance of doubt generators do not need to submit day ahead dynamic data. JN suggested that an open letter to this industry reiterating this would also be helpful. IP suggested that removing this from the code is something that could be done at an appropriate point in the future.

## **7 Workgroup Report**

None

## **8 Industry Consultations**

### **a) GC0033: Offshore Windfarms not Connected to an Offshore Transmission System**

3060. TD noted that the consultation closed on Friday 15<sup>th</sup> March and 3 supportive responses were received. 1 response proposed an easier way of addressing the defect with two definition changes so the text will be redrafted again before submitting to the Authority for decision.
3061. CMD asked whether the Offshore BMU Configurations workgroup will go to consultation soon, adding that the outcome could affect some projects currently under construction. GS added that the consultation still needs to be drafted but it does not contain proposals which affect the design or build of BMUs.

## **9 Pending Authority Decisions**

### **a) C/11: BMU Unit Data from Intermittent Generation**

3062. SB noted that C/11 was approved on 13 March 2013. RJ added that this will be implemented in line with B/10 on 2 April. JB asked whether, to determine the success of the modification, there is any formal tracking for this. AF noted that this was only supposed to be a temporary solution. RJ added that this modification should be superseded by the outcome of GC0057 (Power Available). JB asked whether the PA workgroup looking to remove C/11 again. RJ noted that this has not been discussed explicitly yet.

### **b) F/12: Formalising TSL**

3063. Update provided under agenda item 6 c).

## **10 Standing Items**

### **a) European Network Codes**

3064. IP noted that pp13/20 the ACER update on the European Network Codes was circulated to the panel.



3065. SB noted that links to the ACER update had been provided
3066. CMD asked whether the process in the Terms of Reference for Fault Ride Through will be the standard mechanism for implementing these changes. IP noted that at this stage that is not known, there is expected to be communication from Ofgem soon setting out the general principals. Current processes are expected to be used as far as possible.

## **b) Joint European Standing Group**

3067. BV presented paper pp13/21
3068. BV provided an update from the most recent JESG. She noted it was well attended with 27 there including Mark Copley, who is undertaking a coordinating role within ENTSO-E. The group looked at the Balancing Network Code and it was mentioned that when reading the code it is difficult that because there are no definitions BV noted that one thing being looked at is a potential move to 15 minute settlement. The final code will be submitted to ACER at the end of the year, and will become law April 2014. BV stated that this code is not intended to be a replacement for the BSC.
3069. BV noted that the vision document from ENTSO-E has not been signed off yet. She added that in this suite of codes they all deal with some things, and there have been discussions about whether they could be merged to make one giant code, similar to the gas UNC. The group also talked about governance, BV noted that in GB we are inclusive and have the industry represented. The group have questioned whether it would be a good idea to tell ENTSO-E about our governance structure is to make sure the industry is included.
3070. Drafting of HVDC code starts soon, this has quite a range of impacts on participants with commercial interests.
3071. BV noted that ACER has highlighted some issues with CACM and ENTSO-E are going to write to Phillip Lowe lodging a complaint with the response.
3072. BV confirmed that KEMA are currently carrying out technical translation of the RfG code, and, in the future it may be combined with the DCC. BV noted that JL gave a presentation on transparency guidelines and recommended Panel members look at it. .
3073. CMD noted that the balancing code adds new definitions including coordinated balancing areas and the change of definition for interconnectors left Moyle out, as it is not cross border. He added that Transparency may have impacts on the Grid Code.
3074. BV part of the debate was that we have been really inclusive and developed a format which works. She asked panel to work as ambassadors promoting the work being done. IP noted that the Irish are doing their European group.
3075. Upcoming meetings on CACM and the Balancing Network code were highlighted. For further information panel are requested to check the JESG website. .

## **11 Impact of Other Code Modification or Developments**

3076. A codes summary, pp13/22, was circulated to the Panel.

## **12 Any Other Business**

3077. SB noted that Ofgem are expecting to publish final proposals and statutory consultation for Code Governance Review 2 next week. For this Grid Code this includes Significant Code Review and Code Administrator principles but Ofgem are not proceeding with a more fundamental review.
3078. IP provided an update on the current status of implementation of National Grid's revised Operating Model.
3079. CMD queried whether the Membership of Panel, particularly with regards to Wind representation, should be looked at. JB noted that this may occur as a result of a paper from Shijun Yi and RJ asked if this can be discussed when the paper is submitted.
3080. The Panel discussed recording and publishing workgroup members. RJ noted that a list of member is included in the minutes for each workgroup.

3081. GS noted that for anyone interested in SQSS development, National Grid are happy to conduct some information sessions. Anyone interested should get in touch with GS or TD. AF noted that he has spoken to wind farm operators who were not happy with some SQSS requirements and were not sure who to contact about the SQSS. GS indicated they should contact him.
3082. GN mentioned the issue on Automatic Generator Control (AGC) which he circulated via email. IP noted that this has been removed from the agenda for the operational forum in April where it had been due to be discussed. GN noted that he wanted to raise awareness around the Panel. IP noted that there will be a time when it needs to be discussed at GCRP but discussions may need to take place outside the panel and then noted at the panel meeting. IP noted that an update will be provided at an appropriate time.
3083. GK noted that at the DCRP, RISSP had been discussed and he asked whether the guidance note can be included as an annex to the report. TD agreed this was a good idea and he will circulate and updated report to the industry before implementation.
3084. **ACTION: TD** Update the report and circulate.

## 13 Next Meeting

3085. The next meeting is planned for 15 May 2013 at National Grid House, Warwick.