

DRAFT Minutes

Meeting Name	NETS SQSS Review Panel
Meeting Number	16
Date of Meeting	03 December 2014
Time	10:00 – 12:30
Location	B3.4, National Grid House, Warwick and Teleconference

Attendees

Name	Role	Initials	Representing
John West	Chair	JW	-
Nick Martin	Secretary	NM	-
Graham Stein	Member	GS	National Grid SO
Mark Perry	Member	MP	National Grid TO
Cornel Brozio	Member	CB	SPT
Diyar Kadar	Member	DK	SPT
Brian Punton	Member	BP	SHET
Sean Kelly	Member	SK	OFTO
David Lyon	Member	DL	OFTO
Simon Lord	Member	SL	Generators
Alan Creighton	Member	AC	Distributors
Aled Moses	Authority	AM	Ofgem

Invitees

Name	Role	Initials	Representing
Mike Lee	Invitee	ML	GSR014 Update
Biljana Stojkovska	Invitee	BS	GSR014 Update
Ben Marshall	Invitee	BM	GSR016 / 17 Update
Nigel Platt	Invitee	NP	Modification Proposal
Ahmed Shafiu	Invitee	AS	Modification Proposal

Apologies

Name	Role	Initials	Representing
Bless Kuri	Member	BK	SHET
David Phillips	Alternate	DP	OFTO
Stewart Whyte	Invitee	SW	GSR012 Update

1 Introductions & Apologies

John West opened the meeting by thanking all of those in attendance. Diyar Kadar was introduced as the new SPT Review Panel member. The apologies were also noted.

2 Approval of Minutes

The October 2014 NETS SQSS Review Panel Meeting Minutes were approved. One small change was required with respect to an incorrect Grid Code Review Panel (GCRP) modification reference number. This shall be rectified and the minutes subsequently published onto the National Grid NETS SQSS Website.

3 Review of Actions

a) New:

Action	Description	Action Owner	Due Date
16.1 (Dec 2014)	GSR020: NP, BS and NM to establish the GSR020 working-group, write the Terms of Reference and circulate an invite to industry for working-group participants.	NP / BS / NM	Next Meeting
16.2 (Dec 2014)	GSR014: Circulate a revised version of the GSR014: Offshore Transformer Requirements Modification Report to the NETS SQSS Review Panel in early January 2015 for any final comments. Subsequently bring a finalised version of the Modification Report to the February 2015 NETS SQSS Review Panel for their approval and, subject to this, submit the Modification Report to the Authority thereafter.	ML / NM	05/01/2015

b) Carried Over:

Action	Description	Action Owner	Due Date
9.4 (Oct 2013)	GSR010: JW and BM to finalise the GSR010: Review of Onshore Entry Criteria case studies.	JW / BM	TBC After Action 15.2
11.4 (Feb 2014)	GSR010: Each TO to identify the number of generation connections that GSR010: Review of Onshore Entry Criteria would impact upon.	JW / CB / BP	TBC After Action 15.2
11.5 (Feb 2014)	GSR010: JW and NM to prepare the GSR010: Review of Onshore Entry Criteria Modification Report for consideration at the next NETS SQSS Review Panel meeting.	JW / NM	TBC After Action 15.2
11.11 (Feb 2014)	GSR016: BM to present the GSR016: Application of Scaling Factors working-group report at the next NETS SQSS Review Panel meeting.	BM	Next Meeting
11.12 (Feb 2014)	GSR017: BM to present the GSR017: Treatment of Switch Faults in Operational Timescales working-group report at the next NETS SQSS Review Panel meeting and to provide some clear proposals on how the industry consultation may proceed. <i>Update: This was discussed at the October 2014 NETS SQSS Review Panel and it was agreed that the working-group report shall be delayed to Mid-2015 at the earliest.</i>	BM	2015
12.1 (April 2014)	Discussion Item: JW to investigate the potential Modification Proposal: "Lack of Reactive Compensation Redundancy in Offshore Transmission Networks" further and bring a paper to the NETS SQSS Review Panel to determine the best course of action. <i>Update: The current position has been reviewed for a number of connections. NGET is also waiting for the opportunity to assess this as part of a generation connection application before progressing. The action therefore remains ongoing.</i>	JW	Next Meeting
12.5 (April 2014)	GSR010: JW to further consider the consequential commercial and charging issues with National Grid's Charging and Capacity Development Team and to propose a way forward on these.	JW	TBC After Action 15.2

13.3 (June 2014)	AOB: AM to advise NM how best to submit the italicised text housekeeping change to the Authority for it to be actioned. NM to do as advised thereafter. <i>Update: This shall ideally be incorporated into the next Modification Report submitted to the Authority. This is now likely to be sometime in 2015.</i>	AM / NM	2015
15.2 (Oct 2014)	GSR010: GS to progress discussions with SPT and SHET on how to progress GSR010: Review of Onshore Entry Criteria and to invite SL. To be reviewed at February 2015 NETS SQSS Review Panel.	GS	Next Meeting
15.3 (Oct 2014)	GSR012: SW to draft progress note, circulate to working-group members for comment and agreement and circulate to NETS SQSS Review Panel Members thereafter. <i>Update: Due to ETYS commitments this action has not been completed as yet. However, broader discussions have been held at the recent Joint Planning Committee (JPC) Meeting.</i>	SW	05/01/2015

c) Completed:

Action	Description	Action Owner	Due Date
14.1 (Aug 2014)	GSR014: JW and NM to identify the number of existing connections that would become non-compliant as a result of the introduction of GSR014: Offshore Transformer Requirements and release GSR014: Offshore Transformer Requirements for industry consultation as soon as possible thereafter.	JW / NM	End Oct
15.1 (Oct 2014)	GSR010: DL to circulate Crown Estate paper to NETS SQSS Review Panel Members.	DL	ASAP
15.4 (Oct 2014)	GSR008: JW to send note to AM with respect to GSR008: Regional Variations and Wider Issues.	JW	ASAP
15.5 (Oct 2014)	Authority Decisions: AM to discuss adding NETS SQSS Modifications to the published Ofgem timetable. <i>Update: This is unlikely to happen at this time since the NETS SQSS is treated differently to the other codes / code review panels. However, Ofgem still aim to be as open and transparent as possible so shall investigate possible alternatives.</i>	AM	Dec Review Panel Meeting
15.6 (Oct 2014)	NETS SQSS Website: NM to provide summary of website changes to the December 2014 NETS SQSS Review Panel.	NM	Dec Review Panel Meeting

4 Discussion Items

None

5 Modification Proposals

a) Siemens Offshore Transformer Modules: Modification Proposal:

Nigel Platt (NP) and Ahmed Shafiu (AS) from Siemens presented proposals that could reduce the costs of offshore wind farm developments. However, their current interpretation is that these designs do not presently comply with the NETS SQSS and that this may deter some of the developers they work with. Rather than trying to agree individual design variations for each potential project, Siemens would rather propose changes to the standards. As such, they requested that the NETS SQSS Review Panel appraise clauses 7.8.1.1; 7.13.1.1 and the defined term Offshore Grid Entry Point Capacity.

It should be noted that Siemens and the NETS SQSS Review Panel are aware of other developers working on similar proposals. Siemens are not planning on publically releasing their designs until March 2015. The NETS SQSS Review Panel was therefore asked not to circulate or discuss this material any further outside of the meeting.

In summary, the Siemens presentation explained that typically two thirds of the cost of an offshore platform is in the transport, installation and structure of the topside and foundations. Siemens suggest that by splitting the current topside designs into separate modules would allow them to save significant amounts of steel and also enable them to share foundations with a turbine, saving significant amounts of money in the process.

Siemens argued that whichever analysis approach is taken, there continues to be a significant cost benefit advantage for their new designs, despite possibly increased MWh curtailment. They continued that the NETS SQSS should not prevent developers from introducing new, innovative designs and technology. Siemens also explained how that they had already submitted a design variation with respect to Beatrice Offshore Wind Farm and how that some of their other customers were requesting Siemens provide assurances that these new, innovative designs are NETS SQSS compliant, which they currently are unable to do.

It was agreed that these proposals should be assessed further and that a working-group should therefore be established, Terms of Reference written and an invite for participants circulated to the industry. Siemens confirmed that they would like other manufacturers and project developers to be involved in the working-group. In the interest of speed and efficiency, it is proposed to keep the scope of the working-group quite narrow. GS warned that changing the definition of Offshore Grid Entry Point Capacity could be much more difficult than initially intended due to the far reaching impacts this could have throughout the NETS SQSS. It should be noted that this Modification Proposal shall be named GSR020.

ACTION: NP, BS and NM to establish the GSR020 working-group, write the Terms of Reference and circulate an invite to industry for working-group participants.

SK explained how that in his opinion there is a danger that we are beginning to treat the NETS SQSS too prescriptively with every single word needing to be adhered to. He questioned this approach. BS added that National Grid is regularly being challenged on the NETS SQSS with respect to Chapter 7. It was agreed that a wider discussion of Chapter 7 should be an agenda item at the next meeting.

6 Work-Groups

a) GSR010: Review of Onshore Entry Criteria:

This modification has not progressed substantially since the previous NETS SQSS Review Panel. There are five current actions relating to GSR010: Review of Onshore Entry Criteria. These are noted below:

ACTION: GS to arrange discussion with SPT and SHET on how to progress GSR010: Review of Onshore Entry Criteria and to invite SL.

National Grid has started a piece of work to better articulate the main issues around the implementation of GSR010: Review of Onshore Entry Criteria. National Grid has also previously spoken to customers about their concerns with respect to GSR010: Review of Onshore Entry Criteria and there appears to be difficulties at a number of levels. The proposal is not favoured by some generation customers, it could prove difficult and complicated to implement and there are also commercial and Connection and Use of System Code (CUSC) issues to resolve.

Before pushing forward with this proposal, options for progressing GSR010: Review of Onshore Entry Criteria are being reviewed. As such, National Grid is considering further options for progressing GSR010: Review of Onshore Entry Criteria with SPT, SHET and any other interested parties. Initial discussions have taken place around this. These will be progressed and reviewed at the February 2015 NETS SQSS Review Panel.

The remaining four actions will be reconsidered following the discussion of the above action.

ACTION: JW and BM to finalise the GSR010: Review of Onshore Entry Criteria case studies.

Case studies have been identified but not yet reviewed against GSR010: Review of Onshore Entry Criteria.

ACTION: Each TO to identify the number of generation connections that GSR010: Review of Onshore Entry Criteria would impact upon.

BP has previously confirmed that the population of generators that would be impacted by GSR010: Review of Onshore Entry Criteria in the SHE transmission area would be large, possibly into the hundreds. BP has also confirmed that he will look into the numbers and sizes of generators impacted by these proposals. National Grid has also reviewed the TEC Register to categorise recent and agreed generation connections against the GSR010: Review of Onshore Entry Criteria connection matrix. This was discussed at the October 2014 NETS SQSS Review Panel.

ACTION: JW to further consider the consequential commercial and charging issues with National Grid's Charging and Capacity Development Team and to propose a way forward.

No further feedback has been received following recent presentations at industry forums.

ACTION: JW and NM to prepare the GSR010: Review of Onshore Entry Criteria Modification Report for consideration at the next NETS SQSS Review Panel meeting.

This has not yet been progressed and is reliant on the other actions being completed beforehand.

b) GSR012: Interconnectors:

The NETS SQSS does not currently clarify how you treat interconnectors for transmission security assessments. The GSR012: Interconnectors working-group has therefore been tasked with reviewing local and wider connection criteria, whilst also considering what is happening in Europe and any other changes that might impact interconnectors.

The working-group has largely addressed the local issues and is finalising the proposed changes to the NETS SQSS in this respect. Wider issues shall be addressed in subsequent working-group meetings. At this time, it is not believed the working-group report will be completed until March 2015 at the earliest. It has previously been discussed whether there was any merit in reporting on the two issues separately. However, it was agreed that any proposals should be treated as a single consultation, unless there is going to be a long delay before the completion of the wider works assessment. SW is to circulate a short note on the working-group's discussions to date.

c) GSR016: Application of Scaling Factors and the Inclusion of Embedded Wind in GSR009 Chapter 4 Studies:

GSR016 was originally raised in 2013 with respect to small and medium embedded power stations and the impact that these may have on transmission system planning to determine whether we are able to provide sufficient transmission capability at specific locations. To date, the working-group, which has membership from all three TOs and a DNO, has assessed which areas of the NETS SQSS will be potentially impacted and have concluded that Chapter 2 and Chapter 4 may require revision.

With respect to Chapter 2 criteria, it is reasonable to assume that small and medium embedded power stations shall provide a significant output that shall affect the transmission system. Currently we use net demand data only. However, moving forward we shall be able to accurately model these small and medium embedded power stations and shall therefore treat them similarly to transmission connected generation. This shall not require additional information to be provided.

With respect to Chapter 4 criteria, the generation scaling factors currently used in the NETS SQSS only apply to large power stations. The GSR016 working-group proposes that the scaling factors should be applied to small and medium embedded power stations also to improve the accuracy of boundary transfer studies. Following the Grid Code modification GC042, further data will be available to transmission planners on such generation from Engineering Week 24 next year. The GSR016 working-group shall therefore recommend some changes to the NETS SQSS text, whilst other associated issues shall be captured within the System Operator – Transmission Owner Code (STC).

The use of scaling factors with embedded power stations is likely to result in increased boundary transfers and could affect the timescales for boundary reinforcement in some cases. There was some concern as to whether the impacts of embedded generation on transmission investment raised commercial impacts. AC explained how that from a DNO perspective they are very concerned and recognise that these issues need to be addressed but questioned whether the NETS SQSS was the most appropriate place. AC proposed that the Connection and Use of System Code (CUSC) may be more appropriate. MP agreed with this and explained how that previously these issues had been attempted to be addressed together but had not succeeded.

BP also raised a number of concerns including the need to be extra careful with respect to the scaling factors on the smaller boundaries. In such cases, it is proposed that historic contributions would also be reviewed and a different generation contribution assumed if this is supported by the information available. BP was happy to proceed, considering that BK was an active member of the working-group.

BM summarised that the scope of this exercise excluded a fundamental review but did not disagree that there is potentially a much larger piece of work to be done. However, the working-group is trying to progress this as quickly as possible to be able to effectively consider what is being seen on the transmission system already. The working-group report is mostly complete but further review of the document is planned. The working-group is also considering the consequences of their conclusions.

d) GSR017: Treatment of Switch Faults in Operational Timescales:

The Terms of Reference have been approved by the NETS SQSS Review Panel and a working-group is now in place. This working-group is working with National Grid's Market Operation function over the appropriate NETS SQSS text revision. BM shall continue to provide working-group updates. However, a finalised working-group report is not anticipated until Mid-2015 at the earliest.

e) GSR018: Sub-Synchronous Oscillations (SSO):

This was brought to the NETS SQSS Review Panel because SSO risks need to be managed in the deployment of series compensation and HVDC technology, both of which are within scope of the transmission companies' future plans. There have now been three working-group meetings. It should also be noted that this NETS SQSS working-group is also addressing issues raised through the Grid Code Review Panel (GCRP). The updated working-group Terms of Reference to reflect this were agreed at the October 2014 NETS SQSS Review Panel. The GSR018 working-group is due to report back to the NETS SQSS Review Panel by March 2015.

f) GSR019: Review of Chapter 7 Double Busbar Requirements:

At the April 2014 NETS SQSS Review Panel, Gareth Parker (DONG Energy) explained how a current requirement in Chapter 7 of the NETS SQSS to be able to remove a single section of busbar without losing any power infeed effectively translates to the need for a double busbar substation design. He went on to explain that this may not be the most cost effective and efficient solution and provided a cost benefit analysis (CBA) to support his argument. A working-group was subsequently established to further investigate these conclusions.

More recently there have been a couple of changes in personnel in the working-group. The main issues yet to be resolved include the use of the mean time to repair (MTTR) data and an appropriate cost benefit assessment of a 220kV AIS substation sensitivity. Further work is also required to update the working-group report to provide a clear comparison of the different options and to consider what changes to the NETS SQSS text may be required in Section 7.13.3.1 and in Appendix A.

7 Industry Consultations

a) GSR014: Offshore Transformer Requirements:

ML explained that GSR014: Offshore Transformer Requirements was formally released for industry consultation on 13th October 2014 for a period of twenty five working days, closing on 14th November 2014. Responses were received from five parties: Blue Transmission, DONG Energy, Scottish Power Renewables, Statkraft and National Grid Electricity Transmission. The responses varied in their support of GSR014: Offshore Transformer Requirements. One respondent supported the change provided it was not applied retrospectively to existing connections. The four other respondents did not support the change and identified a number of points for further consideration.

ML summarised the main points raised during the industry consultation and how these had been addressed in the draft Modification Report circulated to the NETS SQSS Review Panel:

- (i) Some respondents stated that they would prefer that a standard requirement for two switch bays was not included in the NETS SQSS. They would prefer a cost benefit assessment be carried out on each individual design. However, the working-group still believes that the proposed approach would provide additional clarity to the NETS SQSS.

- (ii) Some respondents were concerned as to whether the cost benefit analysis had been sufficiently broad. Additional cases were identified including generation entry capacities below 250MW, longer cable lengths and the connection to 275kV substations. Therefore the working-group has undertaken further sensitivity analysis and considered 120MW capacities; different voltage levels and different cable lengths up to 700m and the conclusions of the working-group remain valid and robust.
- (iii) One respondent was concerned as to whether other equipment such as reactive compensation and overhead lines should be factored into the assessment. However, the working-group considered this to be downstream equipment and would therefore not change the cost benefit analysis. With respect to overhead lines, the working-group was unaware of these having been used in the past and believed these would not be used in the future.
- (iv) One respondent was concerned that the costs assumed for curtailed energy were incorrect as constraint payments or ROCs would not be paid to offshore generation. However, the working-group considers its analysis to be reasonable. It has used the same cost benefit analysis methodology as was used for the original NETS SQSS Chapter 7 assessment. Although the value of ROCs was lower when the original analysis was run, updated values have subsequently been used and the conclusions remain valid and robust.
- (v) One respondent was concerned that the capital costs of a two switch bay connection could be much higher than those assumed in the analysis. The working-group considered that such cases could be addressed through a design variation.
- (vi) One respondent suggested a potentially less expensive design option based on disconnectors. However, the working-group considered the cost difference between this option and a circuit breaker option to be small. In addition, a disconnector option could lead to greater curtailment of generation.
- (vii) Some respondents agreed that, if implemented, the change should not be made retrospective. The working-group agrees and this approach was originally included within the working-group report. Greater clarity shall be established on as to when the proposed requirement would apply and whether projects that are being developed but are not yet completed would be impacted.
- (viii) Some respondents were against the requirement for derogation in the event of a single switch bay option being pursued. Respondents were concerned about the project risks that the requirement for derogation would introduce. The working-group is of the opinion that if a customer would prefer a single switch bay design they can apply for one under Section 7.21 and request a design variation.
- (ix) Some respondents felt that the wording of the proposed NETS SQSS change should be clearer. Therefore the working-group has subsequently updated the proposed legal text.

MP queried the necessity of the change imposed by GSR014: Offshore Transformer Requirements, explaining how that in the past we have had designs with one switch bay and designs with two switch bays and have arrived at the right solution. BS counter-argued that every connection is becoming a design variation and we need clarity on how best to proceed. JW agreed that greater clarity is a good thing to provide.

MP went on to explain how that typically you have a deterministic requirement within the NETS SQSS and you vary to go above and beyond this. Whereas with GSR014: Offshore Transformer Requirements, this differs in that we appear to need to vary to go below the deterministic requirement and this is what is causing the issues.

AM confirmed that it is perfectly acceptable for there to be disagreement within the industry consultation responses on submitted Modification Proposals. However, the responses should be addressed as far as possible before the Modification Proposal is formally submitted to the Authority.

It was agreed that the NETS SQSS Review Panel required more time to read and properly digest the draft Modification Report that had been circulated. In addition, the GSR014: Offshore Transformer Requirements working-group would address each of the respondent's views. Other steps to complete the work include seeking views from all previous working-group members, adding the working-group Terms of Reference to the Modification Report, checking the editing and italics within the legal text and doing some further checks on the numbers produced during the further sensitivity analysis. NETS SQSS Review Panel approval to submit the GSR014: Offshore Transformer Requirements Modification Report to the Authority shall therefore be delayed until the February 2015 meeting. However, a revised version of the GSR014: Offshore Transformer Requirements Modification Report shall be circulated for final comments in early January 2015, well in advance of the next NETS SQSS Review Panel.

ACTION: Circulate a revised version of the GSR014: Offshore Transformer Requirements Modification Report to the NETS SQSS Review Panel in early January 2015 for any final comments. Subsequently bring a finalised version of the Modification Report to the February 2015 NETS SQSS Review Panel for their approval and subject to this submit the Modification Report to the Authority thereafter.

8 Modification Reports

None

9 Authority Decisions

a) GSR008: Regional Variations and Wider Issues:

AM explained that a number of queries with respect to GSR008: Regional Variations and Wider Issues had been submitted to National Grid, to which National Grid had already responded to. AM confirmed that Ofgem's technical support will continue to look at these to help determine how best to proceed. JW thanked BP, BK and AC for helping to compile information to send to Ofgem on aspects of the GSR008: Regional Variations and Wider Issues Modification Proposal.

b) GSR011: Review of Offshore Networks:

GSR011: Review of Offshore Networks was formally submitted to the Authority for a decision on 18th August 2014. Ofgem have recently responded with a number of questions. National Grid is addressing these and shall respond in due course.

c) GSR015: Normal Infeed Loss Risk:

GSR015: Normal Infeed Loss Risk, which proposed to remove ambiguity in the level of infeed risk to be secured operationally, has been approved by the Authority. Their decision letter will be available on the Ofgem website from 3rd December 2014 onwards. It should be noted that in the decision letter it is stated that frequency response information should be reported to the NETS SQSS Review Panel after 12 months to ensure that there has been no material change as a consequence of the implementation of GSR015: Normal Infeed Loss Risk.

10 Standing Items

a) Review of Modification Register:

The updated (November 2014) Modification Register was noted. This shall be available on the NETS SQSS Website also. It was explained how moving forward we intend to use this to track progress on all of our current modifications. It has previously been suggested that further milestones or indicative dates could be added to the Modification Register to allow NETS SQSS Review Panel members to better track progress. Any further comments are welcomed and should subsequently be sent to NM.

11 Any Other Business

a) NETS SQSS Website:

The National Grid NETS SQSS Website is being redeveloped and updated. In addition, new material produced for / provided by the NETS SQSS Review Panel or working-groups is being published more quickly. The only outstanding page to be updated is the NETS SQSS Review Panel Members page with contact details and photographs. This is hoped to be completed week commencing 15th December 2014. Any comments and further suggestions for improvement would be welcomed and should be sent to NM.

12 Next Meeting

The next meeting is scheduled for Wednesday 4th February 2015 from 10:00 – 12:00. This is scheduled to be at National Grid House, Warwick and via teleconference. It was discussed that due to the volume of work the NETS SQSS Review Panel is currently considering, the length of these meetings should be extended to 2.5 hours.