Minutes

Meeting name : GC0087: Frequency Response Provisions

Meeting number: 4

Date of meeting : Friday 18 December

Time : 10:00 – 13:00

Location : Warwick Hilton
Stratford Rd, Warwick, CV34 6RE

Attendees

Graham Stein	GS	National Grid (Chair)
Fiona Williams	FW	National Grid
Joe Duddy	JD	RES
Peter Woodcock	PW	RWE
Clement Amerigo	CA	EdF - Energy
Phillip Jenner	PJ	Horizon
Amir Dahresobh	AD	Nordex
Alistair Frew	AF	Scottish Power
Damian Jackman	DJ	SSE (by telephone)
Peter Christensen	PC	Vestas (by telephone)
Ian Nuttall	IN	National Grid
Richard Woodward	RW	National Grid (Technical Secretary)

Apologies

Konstantinos Pierros	KP	Enercon
Jawad Al-Tayie	JAT	Cummins
Niall Duncan	ND	Senvion
Chris Marsland	CM	Energ
Stephen Perry	SP	Ofgem
Guy Nicholson	GN	Element Power
Andrejs Svalov	AS	Alstom
Ben Turner	BT	ESB Carrington Power
Maxime Buquet	MB	General Electric

Introduction

1. GS welcomed everyone to the meeting. GS explained that the purpose of the meeting was to discuss and agree whether a GC modification or policy change is required for implementation of workstream 6 GC0048 Requirement for Generators which covers the frequency response issues.

Minutes of last meeting

2. FW discussed the draft minutes from the previous meeting on 13 November. The comments were agreed and will be revised and published. The Terms of Reference were also agreed and are to be uploaded to the NG website.
3. **Action 15 – FW to issue minutes from last meeting and RW to ensure the ToR are uploaded to the website**

Review of actions

4. **Action 6 –** FW to provide inertia duration curves and also following a discussion on frequency monitoring rates, FW to look at what monitoring related work is being done at National Grid. FW did provide inertia duration curves, but FW to provide more clarity as to why the graphs are as they are – eg was there a flip in coal/gas prices, compare with the demand curves, impact of renewable generation, diff between 2011/12 etc.
5. **Action 7 -** FW to liaise with voltage and reactive group and also to add an interaction column to the parameter table. The interaction column has been added, but the GC0048 voltage reactive group has not yet been formed.
6. **Action 8 –** FW to liaise with GC0048 workgroup and clarify the cumulative/concurrent with ENTSOE – see action 17.
7. **Action 9 –** FW to check other Grid Code references with ambient conditions (completed)
8. **Action 10 -** FW to check figures relating to frequency fall with ENTSOE. It was agreed that this was not required but that the power reduction "line" needs to be set within the grey area in Figure 2 of Article 13.5
9. **Action 11 –** FW to establish whether the requirement for LFSM-U is a capability with ENTSOE - see action 17.
10. **Action 12 –** FW to confirm with ENTSOE the exact meaning of "justify to the TSO". RfG are looking into this from a process point of view. RW to collate all instances within the frequency area.
11. **Action 13 –** FW to confirm compliance is to be included in the terms of reference (completed).
12. **Action 14 –** GS to present updated Terms of Reference at the November GCRP (completed)

RfG Frequency Parameter Discussion

Frequency Ranges

13. Although there is interaction with the voltage and reactive group, it was felt that there was no change required due to the frequency ranges in RfG.

14. **Action 7 – FW to liaise with voltage and reactive group when it forms.**

Limited Frequency Sensitivity Mode – Overfrequency (LFSM-O)

15. RfG clearly states that "LFSM-O setpoint will prevail over any other active power setpoint". Also Article 13.2 is consistent with BC.3.7.2 in all but activation time in the Grid Code. However, several issues arose and have been added to the parameter table: 13.2(a) – how is it instructed? 13.2(b) will the option for automatic disconnection for type A be utilised? We need to define the minimum regulating level.
16. It was agreed that within the policy statement activation time will need to be stated.

17. **Action 16 – IN to provide GC clause which explains why LFSM-O kicks in at 50.4Hz when range is 49.5 – 50.5 Hz (post-meeting note – BC3.5.2 states CC.6.3.3 up to 50.4Hz)**

Maintenance of Constant Active Power

18. RfG requirement Article 13.3 is consistent with Grid Code CC.6.3.3 but there may need to be a code change to make it work.

Power Output with Falling Frequency

19. As with Maintenance of Constant Active Power, there may need to be a code change and selection of a specific characteristic within the boundaries specified.
    NB: Current CC.6.3.3 requirement falls within these boundaries.

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Limited Frequency Sensitivity Mode – Underfrequency (LFSM-U)

20. This is a new requirement for Grid Code, so a new policy and a code change are required. It was agreed that the workgroup would carefully word our interpretation/understanding of the concurrent/cumulative obligations of this and FSM and then seek clarification of our understanding from ENTSOE.
21. There is a need for NG to explain what fast/slow response would look like and whether this is activated or subject to an instruction.

22. **Action 17 – FW/RW to carefully word our interpretation/understanding of the concurrent/cumulative obligations of LFSM-U and FSM and then seek clarification of our understanding from ENTSOE.**

23. **Action 18 – FW to define what fast/slow response would look like and how it would be instructed.**

Frequency Sensitive Mode (FSM)

24. In order to apply the RfG requirements, Insensitivity needs to be defined instead of deadband for new plant. IN to suggest new definitions for “insensitivity” and “deadband” which achieves this.

25. There is a need to specify what is required for FSM and provide guidance. NG need to draft a note on the FSM issues and circulate for comment. Suggestions were made for an enhanced response requirement and a maximum droop setting of 10%.

26. **Action 19 – IN to define insensitivity and deadband.**

27. **Action 20 – FW to produce a note describing FSM choices/options.**

Ancillary Services Business Monitoring (ASBMON)

28. This was not covered at this meeting.

AOB

None discussed

Actions

29. **Action 6 – FW provided inertia duration curves but more clarity is required as to why the graphs are as they are – eg was there a flip in coal/gas prices, compare with the demand curves, impact of renewable generation, diff between 2011/12 etc.**
30. **Action 7 - FW to liaise with voltage and reactive group when it is formed**
31. **Action 15 – FW to issue minutes from last meeting and RW to ensure the ToR area uploaded to the website**
32. **Action 16 – IN to provide GC clause which explains why LFSM-O kicks in at 50.4Hz when range is 49.5 – 50.5 Hz**
33. **Action 17 – FW/RW to carefully word our interpretation/understanding of the concurrent/cumulative obligations of LFSM-U and FSM and then seek clarification of our understanding from ENTSOE.**
34. **Action 18 – FW to define what fast/slow response would look like and how it would be instructed.**
35. **Action 19 – IN to define insensitivity and deadband.**
36. **Action 20 – FW to produce a note describing FSM choices/options.**

Date and Time of Next Meeting

37. **Doodle poll to be sent out to select date for next meeting (mid-Feb)**