ESO

Code Administrator Meeting Summary

Meeting name: GC0155 Clarification of Fault Ride Through Technical Requirements - Workgroup Meeting 8

Date: 05/04/2023

Contact Details

Chair: Milly Lewis, National Grid ESO Milly.Lewis@nationalgrideso.com
Proposer: Terry Baldwin, National Grid ESO Terry.Baldwin@nationalgrideso.com

Key areas of discussion

The Chair provided an introduction as the new Chair of GC0155 and outlined the objectives of the workgroup.

Review of Actions Log

The Workgroup reviewed open actions and discussed the following:

- The Workgroup agreed that actions 28, 31, 33 and 34 can be closed
- Action 29: Further clarity was sought on the action
- Action 30: CB advised that more time was required to understand what the network design equipment requirements are from SPN. CB will feedback in Workgroup 9.
- Action 32: BA advised that evidence from OEMs cannot be shared with the Workgroup, several Workgroup Members expressed concern over how the Workgroup would move forwards without this information as they believe that there is a discrepancy between information that ESO and manufactures hold. It was agreed that this could be solved by holding a discussion face to face with both developers and manufactures and JF took an action to arrange this (see actions below).
- Action 35: Further clarity was sought on the action and Workgroup members agreed that this was to understand what checks are carried out by ESO if there is an event on the network. BA will feedback on this at WG9.

Review of Timeline

Workgroup members agreed with the current timeline.

Terms of Reference

The Workgroup reviewed the Terms of Reference (ToR)

- The Workgroup agree that they were happy with the progress captured against Terms of Reference a), b), c), d), e) i, ii and f).
- The Workgroup discussed e) iii, and agreed that ECC should be included.
- An additional amendment was agreed by the majority of the Workgroup that the work ‘minor’ should be removed from e) and that this amendment should go to the April Grid Code Review Panel.

Draft Legal Text – Temporary Overvoltage Requirements

The Workgroup went on to discuss the Draft Legal Text presented by the ESO.

CC.6.1.11

- BA asked Workgroup members to provide feedback on three points:
  - How is the requirement structured,
  - Does this work for new connections moving forwards, and
  - What issues arise when applied to previous connections
- It was noted that feedback had been provided by some Workgroup Members and that further feedback was to be sought by TOs and manufacturers (see actions below). This work is required to ensure that there are no negative consequences on generators.
- Workgroup Members stated that there was a need to understand the obligation on the generator during fault ride though and what is expected when discussing active and reactive power. Concern was expressed that the two clauses relating to FFCI and voltage control were contradictory.
- Workgroup Members discussed the graph shown in the draft legal text (see meeting slides). Consideration was given to going back to nominal voltage to avoid misinterpretation.
- Deliberation was given to how these terms could be better split into other sections and made more specific to planned and unplanned events and it was suggested that this may fit into CC.6.1.7 to ensure that obligations are met.

CC.A.7.2.3.3

- Workgroup discussed the control reactions and proposed that it was unrealistic to expect an instantaneous response from the generator due to measurement and controller time delay There is a requirement for a defined profile. There is a period of time that reactive current is still being injected into the system when an overvoltage occurs due to controller delay.
- BA argued that the requirement to inject reactive current applies when the voltage falls outside of the normal operating range at CC.6.1.4. The injection happens below the level rather than above of it and that there is no requirement to inject reactive current if it is higher than the maximum system voltage. It was noted that there is a transition period between the minimum and the maximum voltage.
- Some Workgroup members disagreed with this and felt that this may cause technical issues on the system. Additionally, some members felt that the Grid Code would need to reflect that, during a fault and a voltage dip, reactive current needs to be injected. However, if it went above a certain level then it would need to switch to a different control mode to prevent overvoltage. This would need to be made clear in the Grid Code and further development would be required for all controllers.
- Members noted the design parameter in the existing Grid Code.
- Workgroup members were asked to send in their views on this via email for further review. The Chair confirmed that Workgroup members could raise an alternate if an agreement could not be reached.

CC.6.3.15.1

- Due to time constrains it was agreed that BA should review the Legal Text as discussed in Workgroup 3 and discuss this further with AF (see Actions)
- Workgroup members suggested that clarification was required and that the reactive current injection needs to be proportional with the maximum possible and the depth of the voltage dip.

Next Steps

- Feedback to be sought by BA (see actions) in readiness for Workgroup 9.
- Further review of the Legal Text will be required

Actions

Action number	Workgroup Raised	Owner	Action	Due by	Status
27	WG7	BJO	To share with the Workgroup an email sent from FW	WG8	Closed
28	WG7	AF/BA	To have a conversation offline re documents that are within the GC appendix	WG8	Closed
29	WG7	SS/BC	To have a conversation offline on understand GEP parameters.	WG8	Open
30	WG7	CB	To share with the Workgroup to network design equipment requirements from SPN	WG9	Open
31	WG7	AM	To provide evidence of problem with low level injection requirements	WG8	Closed
32	WG7	BA	To check that whether the evidence from OEMs can be shared with the Workgroup	ASAP	Open
33	WG7	BA	Comparison of international standards for HVRT	WG8	Closed
34	WG7	BA/TB	Provide a strawman/draft legal text on the requirements	WG8	Closed
35	WG7	BA	To check with the compliance team what checks they do in a FRT scenario	WG9	Open
36	WG7	JF	To provide where the document for ENTSO-E and clause has come from	WG8	Open
37	WG8	JF	Arrange meeting with developers and manufacturers	WG9	Open
38	WG8	BA	Discuss WG3 Legal Text draft with AF	WG9	Open
39	WG8	BA	Discuss CC.6.1.11 with TOs and manufactures and feedback to WG with strawman	WG9	Open
40	WG8	ALL	Provide feedback on CC.6.3.15.1 on draft legal text	WG9	Open

Attendees

Name	Initial	Company	Role
Milly Lewis	ML	National Grid ESO	Chair
Terri Puddefoot	TP	National Grid ESO	Technical secretary
Terry Baldwin	TB	National Grid ESO	Proposer
Bisheoy Awad	BA	National Grid ESO	Workgroup member
Alan Mason	AM	Oceanwinds	Workgroup member
Alastair Frew	AF	Northern Powergrid	Workgroup member
Andrew Vaudin	AV	EDF	Workgroup member
Forooz Ghassemi	FG	NGET	Workgroup member
Fraser Norris	FN	SSE	Workgroup member
Isaac Gutierrez	IG	Scottish Power	Workgroup member
John Fradley	JF	ESO	Workgroup member
Julie Richmond	JR	Scottish Power	Workgroup alternate
Mike Kay	MK	P2Analysis	Workgroup member
Sridhar Sahukari	SS	Orsted	Workgroup alternate

Priyanka Mohapatra	PM	Scottish Power	Workgroup member
Martin Aten	MA	Uniper	Workgroup alternate
Tim Ellingham	TE	RWE	Workgroup member
Shilen Shah	SSh	Ofgem	Authority Rep
Owen Curran	OC	Siemens	Observer
Cornel Brozio	CB	SP Energy Networks	Observer