Distribution Code Review Panel
Meeting 67 – Thursday 4 January 2018

DC0079 - Frequency Changes during Large Disturbances and their impact on the Total System – Update.

Paper by Mike Kay (Chair of GC 0079 WG)

1. Recent Progress

The DNOs recommended to the Authority after the October Panel meeting that the Distribution and G59 should be changed to implement revised RoCoF protection settings for all new non-type-tested generation less than 5MW, ie to bring it into line with generation above 5MW, and to ban the use of vector shift protection.

The Authority approved this change on 15 December and it will come into effect on 1 February 2018. Following the consultation in July 2017 on these changes, there was no responses from manufacturers of type tested generation, ie inverter manufacturers. Since then the workgroup has had some interaction with manufacturers, who mainly say that they do not see any real problem in complying with type tests imposing the new RoCoF values and immunity to vector shift.

DC0079 is really concerned with the frequency events, and has got drawn into the behaviour of vector shift protection only because it had been seen as a viable alternative to RoCoF. It has been announced by National Grid at the December Grid Code Development Forum that National Grid is thinking about setting up a new working group charged with reviewing all the challenges of fault ride through for transmission faults and will include the effect on type tested generation. This will be a suitable home to develop the fault ride through and immunity issues that the DC0079 working group have started to identify.

However, in order to put type tested generation on the same footing as non-type-tested generation and to limit the increase in the number of type tested generating plant without the required RoCoF setting, the workgroup is proposing to consult immediately on applying the new RoCoF settings to type-tested generation, and to change the existing vector shift immunity test to 50°. From tests undertaken for the workgroup by the University of Strathclyde, there seems to be no problem with common brands of mass market domestic inverters passing a simply 50° immunity test.

2. Remaining Work

The workgroup is continuing to develop the cost benefit analysis to support retrospective application of revised RoCoF settings to existing non-type tested generation of less than 5MW. The workgroup expects to be in a position to consult on this in two or three months.

3. Recommendation

The Panel is asked to note this update and to endorse the workgroups intention to consult as soon as possible on the extension of new RoCoF settings and vector shift immunity to all new type tested generation plant**.**