Minutes of Distribution Code Review Panel Meeting – 8th December 2017

Present:

	Ellen Diskin (ED)	Chair
	Stephen O'Sullivan (SOS)	Secretary
	Lisa McMullan (LMcM)	TSO Representative
	Mantas Vencius (MV)	CRU Representative
	Jim Wynne (JW)	PES Representative/ Independent Suppliers Representative
	Ray Eustace (RE)	ESB Newtorks
	Derek Hynes (DH)	DSO Representative
	Ger Beatty (GB)	Synchronous Generators Ireland
	Tony Hearne (TH)	DSO Representative
	Stephen Walsh (SW)	ESB Networks
	Ciaran Donnelly (CD)	Embedded Generators
Apologies:	Robert O'Rourke (ROR)	CER Representative
	Michael O'Hara (MOH)	ETCI Representative
	Conor Minogue (CM) (Alternate not present)	Major Customers Representative
	Peter Kavanagh (PK) (Alternate not present)	ISEA Representative
	Sean Doolin (SD)	PES Representative/ Independent Suppliers Representative

1. Review of Previous Minutes

ED presented minutes of the last DCRP meeting (28th October 2017). All changes were accepted by the panel and agreed as final for publication.

These minutes will be published on the ESB Networks website - https://esbnetworks.ie/who-we-are/distribution-code, ED explained that they are in a queue to be posted.

ED introduced SOS as the new DCRP secretary.

Action:

- ED to put minutes onto website

2. SOs Updates on Derogations: Temporary & Permanent

LMcM explained that there are 70 temporary derogations to be approved and there are 3 permanent derogations to be approved, with a few outstanding. LMcM expressed that if applicants are in urgency with regards to banks then the TSO would do their best to finalise. Met mast guidelines – TSO is working through temporary and permanent derogations. There is

one already submitted. TH believes that a few temporary derogations will run out and may roll over.

3. Modification Proposal #36 – Power Park Modules:

- **Presentation on proposed signals list,**
- **Discussion of the re-circulated proposed Modification #36.**

TH and LMcM discussed the proposed modification #36 which seeks the Extension of WFPS requirements to PV and other Non-Synchronous generation. This would allow for the introduction of more large scale solar energy production at a time of growth in the industry, using a 1 MW threshold for solar plus PPMs. In order to do so the mod proposes changes to section 11 of the Distribution Code for solar. Therwe will also be additional requirements for wind. LMcM will be removing DSO RTU from the mod. TH is to get the mod together and recirculate it as a new mod before the next DCRP meeting in March, ED asked if we could circulate comment by email and LMcM recommended to do it all via email, ED will check the time limit for comment. LMcM gave a presentation on controllability for all generation. TSO wants controllability for all types of generation. She stated that the TSO will request Mods under the Network Codes and that Mods for controllability will be non-retrospective adding that one doesn't have to be a market participant to be controllable. ED asked if PPMs are not retrospective do we need to state this in the Distribution Code. LMcM replied that we need to be very careful how we word thisTH indicated that it would provide a good dry run for the structural mod to be proposed for the upcoming EU Network Code mods which are not retrospective. Only the applicability matrix change of this mod is intended to be non-retrospectiveTSO will be very specific and existing 5MW wind farms that are not controllable will remain uncontrollable.

4. Controllability below 1 MW for all generation:

- **Recommendation on hardware for controllability,**
- **Update on whether SO jointly agreed solution can be recommended to the Panel.**

TH informed the panel of the meetings and engagements to date on the issue of 1MW controllability solution. A meeting has been held with TSO/DSO technical experts. There was a consensus that use of DSO RTU was a technically feasible way to proceed. Meetings were held with TSO/DSO technical experts on 30th Nov to discuss new proposal tabled by EirGrid. At this 30th November meeting implementations that do not involve a RTU or other physical device at the IPP-DSO interface were explored. However there was consensus that whilst there is potential in the future for this, is not realisable in the short term and assumes the Operational IP network can reach the IPP. DSO RTU now restored as the most realisable option. In addition some technical details were discussed at the November 30th meeting around such things as; 101 vs 104?; Hard wired vs serial connection between IPP and RTU?; Security implications – firewalls; and Signal routing. TH expressed that currently there is agreement that use of the DSO RTU is the preferred solution for MW controllability of generators >1MW to a threshold to be determined. He added that two signal routing options are technically available with the TSO proffering the latter option.;

- DSO RTU to NDCC and then to NCC via ICCP
- Signal splitting at DSO RTU

TH also stated that hard wired signals are the only immediately implementable solution and that serial connection technically preferable but needs some further work. ESBN are to revert in Q1 2018 with specified protocol.

Next steps include:

- ESB Telecoms to determine if proposed signal list from TSO can be accommodated in DSO RTU,

- Assuming yes then; Post meeting note: Confirmed
- ESBN to consider reduction of EGIP threshold to 1MW to align,
- ESBN to determine cost of universal DSO RTU that can accommodate:
  - TSO MW controllability
  - DSO EGIP requirements
  - DSO Nodal Controller requirements
- ESBN to consider charging implications, if any
- EirGrid to determine threshold for use of full "TSO RTU" – if any
- DSO RTU solution becomes available – initially hard wired signals only
- Option for serial connection to follow

5. NSAI completion certificate. Due Jan 2018:

- **Update on progress,**
- **Update on ESB Networks work on interface arrangements.**

RE gave a presentation on ESB Networks work on interface arrangements covering smart metres, electric vehicle charging and HV interface. He spoke about the CRU funded programme to replace ESB meters with smart meters, explaining that there are 2.25 million meters to be replaced within a 5 year programme between 2019 – 2024. It will be towards the end of the project that customers will be able to see their usage on a live basis. Communication with the smart meters will be done through the 3G network with a modem most likely within the units. There may be scenarios that will require an antenna for this to work such as apartment buildings where the meter may be underground. The smart meter will send 48 readings a day either every half hour or together at the end of the day. It has yet to be conformed if the meters will be import/export meters. There will be difficulties in dealing with domestic interfaces especially with inside boxes, with safety being a major concern and the process may be very labour intensive. In relation to electric vehicles RE explained that the Department of Communications, Climate Action & Environment have a number of working groups debating the issues surrounding the topics of home, location, on street and rapid EV charging. **Home charging** is a slow process and somewhat restricted by the issue of private driveways versus public foot paths, with leads posing a safety risk when placed across public or communal footpaths. At present 3kW standard chargers are in use, with 7kW likely to become a standard technology in the future which could lead to an increase in household MIC. TH added that principles are being formed to inform the design of safe charging arrangements at private homes. **Location charging** which can include workplaces, supermarkets or any business providing the service is also a slow process with a minimum charge time of 1 hour. **On-street or public chargers** are semi-fast chargers up to 22kW and are free to use with the majority of chargers being 22kW AC on the kerbside. It is considered to be the principle method of charging for EV users with no access to a home charger. In addition there could be issues around street furniture especially over 2kW. They can also result in broken neutrals being a greater risk due to larger loads. The Government is looking at the possibility of Local authorities getting involved in the provision of on-street charging. **Rapid chargers** have a much higher power of up to 40kW, and are capable of charging most EVs to 80% in 20/30 minutes. They are located mainly on interurban routes and are key to enabling longer journeys to be made. An issue that arises is that different connectors are required for different EV models. Tesla have signed a deal with applegreen and are installing 6 rapid charging stations round the country. RE also discussed **HV Interface and Existing Connections.** He informed the panel that there is a new document underway that contains procedures for operating across the Interface between ESBN and customers at HV level (>1,000V), titled Field Procedure – Operating across HV Interface between ESB Networks and the customer. The document covers both import and export

customers, and offers step by step procedures covering both customer work and ESBN work. The new document also fulfils the requirement contained in the;

- "Distribution Code" – DOC 11.5 – Safety at the DSO/User Interface.
- "Gird Code" – OC 11.5 - Safety at the Interface between the Transmission System and the User System.

He added that contractors appear to be happy with it and it will need to be delivered to both ESBN and the HV contracting industry. RE then moved onto **HV Interface – New Connections,** and explained that all new connections are >500kVA, and that at present a No. 2 Wiring Cert covers all connections greater than 50kVA. He added that ECTI TC3 produced a "Code of Practice" ET103:2015 titled national Rules for Electrical Installations, Power Installations Exceeding 1kV a.c. (1.5kV d.c). This also contains Wiring Certs for greater than 1kV. MV requested that this presentation to be circulated as he wants to share it with the CRU safety team.

6. Update on RfG consultation.

TH is working in the RfG consultation process and should have a final version ready by December 22nd 2017 with a draft to be submitted to CRU before then.

Actions:

- LMcM will update the panel for a date for a workshop to held in January on the RfG consultation.

7. Update on under voltage requirements in Generation Conditions Governing Connection to the Distribution System

SW gave a presentation on the Conditions Governing Connection to the Distribution System. The current version which was published in 2012 introduced EGIP and Fault ride-through settings to avoid cascade tripping, and ESBN own and control breaker at interface protecting public network for >2MW generation. There is a new edition planned for 2018. SW stated that ESBN are being transparent on clarifications and amendments that are already current practice. He discussed actual RoCoF settings, explaining that heavy machines have a RoCoF of 0.6 Hz/sec, or for trickle feed a setting of 0.4 Hz/sec applies, small and light machines have a RoCoF of 1 Hz/sec, , or for trickle feed a setting of 0.4 Hz/sec applies, and inertia-less machines have a RoCoF of 2Hz/sec. Finally he added that Under Voltage setting has been revised in line with the Distribution Code. Modifications to the Distribution Code on under voltage mean non-wind generators must now stay connected for voltage dips as follows;

- 95% of nominal voltage (5% retained) for a duration of 150 milliseconds
- 50% of nominal voltage (50% retained) for a duration of 450 milliseconds
- Wind still follows ramp from 15% to 90%

This aligns with fault clearing times on the Transmission System. On the Distribution system voltage dips can be less severe but last for longer. To avoid the risk of cascade failure on the Grid it is important to have settings outside the Transmission Fault clearing times (as they cover a larger area). SW also state that ESBN are asking legacy generators when they have an outage to take the opportunity to update. GB requested to see the Conditions Governing Connection to Distribution System document before it is published. SW explained that it is internal at the moment and it must be ESB approved before it gets sent out for comment and it can also be sent to CRU, ED sought clarification from SW once it is internally approved can it go out as an unapproved draft, to which SW confirmed yes.

Actions:

- Document to be sent out once internally approved.

8. Any Other Business

- GB says it is unclear what effect the Enduring Connection Policy may have on DS3. He requested an update for the next meeting. A presentation on the topic of the Enduring Connection Policy, including how it interacts with DS3, will be presented at the March meeting
- LMcM is receiving a lot of questions from TSO customers, she will circulate these in the New Year.
- TH reminded the members to look out for and respond to the RfG non-exhaustive parameters consultation. In particular, it was asked if the members present gave permission for their emails to be used to advise when the consultation issued. The members agreed to this.

9. Next Meeting Dates:

To be advised when meeting minutes issue

Ellen Diskin,

Chair,

DCRP

8th December 2017