

DISTRIBUTION CODE MODIFICATION PROPOSAL FORM

Modification Proposal submitted By: Stephen Walsh	DATE OF SUBMISSION OF PROPOSAL: Feb 2015	Modification Proposal Number: <i>(to be assigned by Review Panel Secretary)</i> #34a
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CONTACT DETAILS FOR MODIFICATION PROPOSAL ORIGINATOR: (IF NOT DISTRIBUTION CODE REVIEW PANEL

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MODIFICATION PROPOSAL TITLE:	Higher and Lower Frequency limits for fault ride-through for all generators.
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DISTRIBUTION CODE SECTION(S) AFFECTED BY PROPOSAL

1. **DCC10.5 – Add 3 moved sections from 10.10.1.1 as (g) to (i)**
2. **DCC10.10.1.1 – Move section (a) to (c)**

MODIFICATION PROPOSAL DESCRIPTION *(Clearly state the desired amendment and all text changes. Attach further information if necessary)*

The requirement for generators to remain connected during system disturbances will apply to all generators at any connection level. This is to ensure overall system stability when a significant proportion of the total generation may be delivered by Embedded Generators. The existing connected embedded generation should be exempt from this as there are a large number of small customers that would find mandatory compliance onerous.

These requirements had previously been specified for 110kV connections >2MW. This requirement will be applied to all generators by moving those clauses from the 110kV section (10.10.1.1) to the common generator section 10.5.1 This will include small wind generators not covered by DCC11 and all non-wind below 2 MW 110kV connected generators except for **Automatic Mains Failure Mode** or **Lopping Mode** connections in the fault ride through requirement.

Proposed new text;

DCC10.5 After Table 5 in 10.5.1 f)

- g. Each Generation Unit shall, as a minimum, operate continuously at normal rated output at the **Distribution System** Frequencies in the range of 49.5Hz to 50.5Hz. This requirement does not apply for **Automatic Mains Failure Mode** or **Lopping Mode** connections;;
- h. Each Generation Unit shall, as a minimum, remain synchronised to the **Distribution System** at **Distribution System** Frequencies within the range of 47.5Hz and 52.0Hz for a duration of 60 minutes. This requirement does not apply for **Automatic Mains Failure Mode** or **Lopping Mode** connections;;
- i. Each Generation Unit shall, as a minimum, remain synchronised to the **Distribution System** at **Distribution System** Frequencies within the range of 47.0Hz and 47.5Hz for a duration of 20 seconds required each time the Frequency is below 47.5Hz. This requirement does not apply for **Automatic Mains Failure Mode** or **Lopping Mode** connections;;

Proposed Deleted Text;

DCC10.10.1.1 Each Generation Unit shall, as a minimum, have the following capabilities:

- (a) Operate continuously at normal rated output at the **Distribution System** Frequencies in the range of 49.5Hz to 50.5Hz;
- (b) Remain synchronised to the **Distribution System** at **Distribution System** Frequencies within the range of 47.5Hz and 52.0Hz for a duration of 60 minutes;
- (c) Remain synchronised to the **Distribution System** at **Distribution System** Frequencies within the range of 47.0Hz and 47.5Hz for a duration of 20 seconds required each time the Frequency is below 47.5Hz;

MODIFICATION PROPOSAL JUSTIFICATION (*Clearly state the reason for the modification. Attach further information if necessary*)

The purpose of this modification is to ensure that Users of the Distribution System have the capability to stay connected during faults where the Frequency may vary within a wide range. This will facilitate having greater amounts of embedded generation on the Network. To avoid cascade tripping Users must stay connected during a fault elsewhere on the system. The existing small embedded generation comprises of a large number of small customers that would find mandatory compliance onerous.

IMPLICATIONS OF NOT IMPLEMENTING THIS MODIFICATION

The implication of not having Distribution Users compliant is that there will be limits on the amount of embedded generation to prevent cascade tripping during faults. Alternatively expensive constraints will have to be incurred keeping sufficient spinning reserve to replace generators which trip during a system disturbance.

PLEASE SUBMIT MODIFICATION PROPOSALS TO THE PANEL SECRETARY BY E-MAIL TO: DistCodePanel@mail.esb.ie