

Northern Ireland Electricity Ltd

Distribution Code Amendments Consultation Paper: Rate of Change of Frequency

APPENDIX: Proposed Distribution Code Modifications (Redline)

11th September 2015

It is proposed to amend the Distribution Code (D-Code) by adding in the text in red and deleting the text in blue.

CONNECTION CONDITIONS

7.12 Variations in System Frequency

7.12.1 In order to comply with its **Grid Code** obligations, the **DNO** requires that, apart from those circumstances set out in sub-paragraph ~~7.12.2~~~~7.7.2~~, all existing and new Independent Generating Plant ~~with an Output of 100kW or more~~ shall stay connected and operate:

- (a) continuously where the **Distribution System Frequency** varies within the range 49.5 to 52.0 Hz;
- (b) for a period of up to one hour where the **Distribution System Frequency** varies within the range 48.0 to 49.5 Hz; and
- (c) for a period of up to 5 minutes where the **Distribution System Frequency** varies within the range 47.0 to 48.0 Hz.

7.12.2 The requirements of paragraph 7.12.1 do not apply where:

- (a) the G59 relay has operated correctly, consistent with the settings agreed pursuant to paragraph ~~7.13~~~~7.8~~; or
- (b) The **Distribution System Frequency** has changed at a rate greater than 2.0Hz/s~~1.0 Hz/s~~ measured over a rolling 500 ms
- ~~(b)~~(c) in exceptional circumstances, voltage dips may cause the **Distribution System Frequency** to change at a rate in excess of 2 Hz/s for short time periods; or
- ~~(c)~~(d) there is manual intervention by the **Generator**.

7.13 Agreement of rate-of-change-of-frequency settings

7.13.1 Where **Power Stations** are equipped with rate-of-change-of-frequency relays or other devices which measure and operate in relation to a rate-of-change-of frequency the procedure in paragraphs 7.13.2 to 7.13.5 below will be followed to ensure satisfactory operation of the **Power Station**.

7.13.2 At a reasonable time prior to a **Power Station** being connected to the **Distribution System**, and prior to any relevant modification to a **Power Station** or any relevant

Power Station Equipment, the **Generator** shall contact the **DNO** with details of the proposed rate-of-change-of-frequency setting.

- 7.13.3 The **DNO** shall, within a reasonable period and in any case no more than 28 days after being contacted pursuant to paragraph [7.13.27-8-2](#), discuss with the **Generator** whether the proposed settings are satisfactory. The agreed settings shall be specified in the **Connection Agreement**.
- 7.13.4 In relation to any **Generator** which has agreed the settings with the **DNO** under these provisions, the **DNO** shall notify that **Generator** of any change of which it is aware in the expected rate-of-change-of-frequency on the **Distribution System** which may require new settings to be agreed.
- 7.13.5 Each **Generator** shall be responsible for protecting the **Generating Unit** owned or operated by it against the risk of damage which might result from any **Frequency** excursion outside the range 52 Hz to 47 Hz and for deciding whether or not to interrupt the connection between its **Plant** and/or **Apparatus** and the **Distribution System** in the event of such a **Frequency** excursion.