

Modification	At what stage is this document in the process?
<p><b>DCRP/MP/18/04/Report to Authority</b>  <b>Revision of Engineering Recommendations (EREC) G98 and G99</b></p> <p>Requirements for the connection of generation equipment in parallel with public distribution networks on or after 27 April 2019.</p>	<div style="display: flex; flex-direction: column; align-items: flex-start;"> <div style="margin-bottom: 5px;"><span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">01</span> Modification</div> <div style="margin-bottom: 5px;"><span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">02</span> DCRP report</div> <div style="margin-bottom: 5px;"><span style="border: 1px solid black; border-radius: 50%; padding: 2px 5px;">03</span> Public Consultation</div> <div style="margin-bottom: 5px;"><span style="border: 2px solid black; border-radius: 50%; padding: 2px 5px;">04</span> Final Modification Report</div> </div>
<p>The purpose of this document is to assist the Authority in its decision to implement the proposed modifications to Engineering Recommendations G98 and G99. The proposed modifications deal with two issues with the recently approved EREC G98 and EREC G99: incorrect implementation date and the interaction of DC0079, approved by the Authority on 04 May 2018. A small number of typographical errors are also corrected.</p> <p><b>Date of publication: 11 June 2018</b></p>	
<p><b>Recommendation</b></p> <p>The Distribution Code Review Panel (DCRP) unanimously recommends that the proposed modifications are made to the Engineering Recommendations G98 and G99 and the Distribution Code.</p>	
	<p>The Proposer recommends that this modification should be: Submitted to the Authority for approval</p>
	<p>High Impact: None</p>
	<p>Medium Impact: None</p>
	<p>Low Impact: All Users of the Distribution System</p>

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Final Modification Report available for Panel	7 June 2018	
Final Modification Report submitted to Authority	11 June 2018	

## Purpose of the Modification

The implementation of the EU Network Codes is creating a substantial amount of modifications to the GB documentation, and has resulted in the creation of two new Engineering Recommendations for the connexion of generation to distribution networks, EREC G98 and G99.

These have recently (15 May) been approved by the Authority. In common with the modifications to the Grid Code approved at the same time, an erroneous implementation date of 17 May 2019 was used in the drafting. The correct date should be 27 April 2019. In approving ERECs G98 and G99 the Authority asked that this mistake was corrected.

In parallel with the development of EREC G98 and G99, modifications have recently been approved by the Authority that change the requirements for loss of mains protection fitted to distributed generation. These changes now need to be applied to G98 and G99.

A number of typographical errors have come to light in G98 and G99, all of which are inconsequential, but the opportunity can now be taken to correct them.

## Details of the Proposal

### Incorrect Implementation Date

Throughout the development of the Grid and Distribution Code modifications for the Requirements for Generations EU Network Code (RfG), the industry has misread the implementation date as 17 May 2019 instead of April 27 2019 (ie three years after entry into force instead of the correct three years after publication). This mistake was only realized towards the end of the period that the Authority had to approve the Grid and Distribution Code modifications.

The drafting of the D Code, G98 and G99 uses the implementation date a number of times to explain when compliance with G98/G99 is required, and when generation can still be connected under the previous G59/G83 requirements. Implementing this correction is simply to replace every instance of 17 May 2019 with 27 April 2019. Note that 17 May **2018** is used correctly within the documents – this is the date by which contracts must be signed if, for a connexion that occurs after 27 April 2019, the pre RfG requirements are to apply.

### DC0079 – Loss of Mains Requirements.

During the September 2017 DC0079<sup>1</sup> industry consultation, two options were put forward in section 4.36 of that consultation document. Option 1 was only aimed at plant whose LoM is implemented in discrete protection relays. This option required that plant commissioning on or after 1 February 2018 must not use vector shift protection and to use a RoCoF relay set to  $1\text{Hzs}^{-1}$  with a 500 ms time delay. This was approved by the Authority on 15 December 2017.

The second option required type tested embedded generators to demonstrate immunity to vector shift and RoCoF disturbances. The Workgroup proposed that plant should be able to ride through faults whose vector shift could be up to  $50^\circ$  or RoCoF of up to  $1\text{Hzs}^{-1}$  with a 500 ms time delay.

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<sup>1</sup><https://www.nationalgrid.com/sites/default/files/documents/GC0079%20%20Industry%20Consultation%20Document.pdf>

No responses were received to the September 2017 consultation from manufacturers of type tested embedded generators on these immunity requirements. The workgroup concluded that there was need to further engage with these manufacturers. As part of this engagement process, the DCRP wrote an open letter to manufacturers<sup>2</sup> of type-tested plant in an effort to inform and engage them.

A second public consultation<sup>3</sup> targeting manufacturers of type-tested plant was undertaken in February 2018. Following that consultation the authority approved changes to G83 and G59 in relation to type tested equipment, bringing the loss or mains requirements into line with those for non type-tested generation in G59.

In regard of loss of mains protection both G98 and G99 follow G83 and G59 exactly. Therefore G98 and G99 need amending with the exact same changes that have just been approved by the Authority. It was not possible to submit G98 and G99 for modification as part of DC0079 as G98 and G99 had not at that stage been formally approved as Distribution Code documents at that stage.

The changes necessary in G98 and G99 relate to changing instances of RoCoF settings from 0.2 Hzs<sup>-1</sup> to 1.0 Hzs<sup>-1</sup> and stability values of 0.19 Hzs<sup>-1</sup> to 0.95 Hzs<sup>-1</sup>, and also changing instances of 9° as a vector shift stability criterion to 50°. These changes are marked up in Appendix 1 and Appendix 2 to this report.

As these changes to G59 and G83 have already been publicly consulted on, and as these are therefore simply consequential changes to G98 and G99 there is no need to subject these changes to further consultation.

### **Housekeeping Issues**

A number of typographical errors have been identified in both G98 and G99 since submission to the Authority back in February. In G99 there are small number of internal references to paragraph numbers that were incorrect – these have now been corrected, along with other typos, in the current draft in appendix 2.

All the proposed typographical corrections are change tracked in the versions of G98 and G99 attached as appendices 1 and 2.

## **Impacts on Total System and the DNOs' Systems**

There is no impact on the Total System. Implementing the DC0079 loss of mains changes to G98 and G99 will avoid adverse future impact on the Total System.

## **Impacts on the Users of DNOs' Systems**

There are no new impacts on Users of DNOs' systems.

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<sup>2</sup> [http://www.dcode.org.uk/assets/uploads/171014\\_open\\_letter\\_VS\\_301017.pdf](http://www.dcode.org.uk/assets/uploads/171014_open_letter_VS_301017.pdf)

<sup>3</sup> <http://www.dcode.org.uk/consultations/open-consultations/>

## Governance

Given that the proposed modifications here are of a housekeeping nature (ie the date correction and the typographical errors) or have already been extensively consulted on in the DC0079 consultations, the Panel can elect to make use of, subject to the assent of the Authority, paragraph 21(e) of the Panel's Constitution and Rules:

*When agreed by a majority resolution of the Panel a proposed modification will normally go out to public consultation. In certain cases where minor modifications have been approved unanimously, the Panel may decide not to go out to public consultation, subject to the agreement of the Authority.*

At the Panel meeting on 7 June the Panel unanimously agreed that the report should be submitted to the Authority without further consultation.

## Assessment against Distribution Code Objectives

*(i) To permit the development, maintenance and operation of an efficient, coordinated and economical system for the distribution of electricity;*

The proposed amendments better facilitate the Distribution Code objective (i); this objective is improved by ensuring the already approved DC0079 changes are carried forward beyond April 27 2019.

*(ii) To facilitate competition in the generation and supply of electricity*

The proposal has a neutral impact on this objective.

*(iii) Efficiently discharge the obligations imposed upon DNOs by the Distribution Licence and comply with the Regulation (where Regulation has the meaning defined in the Distribution Licence) and any relevant legally binding decision of the European Commission and/or Agency for the Co-operation of Energy Regulators.*

The proposal maintains the full implementation of the RfG and is therefore a positive contribution against this objective.

*(iv) Promote efficiency in the implementation and administration of the Distribution Code.*

It is clearly inefficient to have formal legal text in published documents with incorrect dates and typographical errors. Correcting these will avoid inefficient misunderstandings by all parties.

## Impact on other Industry documents

There are no impacts on other industry documents .

## Environmental Impact Assessment

There are no environmental impacts associated with this proposed modification.

## Distribution Code Review Panel Recommendation

At the meeting of the Distribution Code Review Panel (the Panel) held on 7 June 2018, the Panel unanimously agreed to the submission of the Report to Authority as the Panel agreed that the Modification proposal better facilitated the objectives of the Distribution Code.

## Recommendation

The Licenced Distribution Network Operators and the DCRP recommend that this modification report should;

- be submitted to the Authority for approval; and
- subject to the agreement of the Authority the modification should be implemented from the date the revised Distribution Code is published. This date is recommended as 23 July 2018.

## Appendices

Appendix 1	Proposed EREC G98 Issue 1 Amendment 1
Appendix 2	Proposed EREC G99 Issue 1 Amendment 1
Appendix 3-1	Proposed Distribution Code version 32 (assuming Ofgem do not approve the P2 and P28 mods currently with them for approval)
Appendix 3-2	Proposed Distribution Code version 33 (assuming Ofgem do not approve the P28 mods currently with them for approval, but do approve the P2 mod)
Appendix 3-3	Proposed Distribution Code version 34 (assuming Ofgem approve both the P2 and P28 mods currently with them for approval)