

Draft Proposed Changes to the EREC G59 Issue 3 Amendment 4 July 2018
Resulting from Revision of
Engineering Recommendation P28

Background

The following changes to the legal text of Engineering Recommendation G59 Issue 3 Amendment 4 - July 2018, are proposed where:

- original legal text is shown black coloured font;
- proposed deletions to legal text are shown in red with strikethrough;
- proposed additions to legal text are shown in red.

Table 1 – Proposed EREC G59 Modifications

Item	Reference in EREC G59	Page	Legal Text
1	Clause 3.2 Standards publications	11	ENA Engineering Recommendation P28 Planning limits for Voltage fluctuations caused by industrial, commercial and domestic and the connection of disturbing equipment in the United Kingdom.
2	Clause 7.3.4 d.	25	Voltage rise / Step Voltage Change - Connections should be designed such that the operation of a Generating Plant does not produce voltage rise in excess of statutory limits. In general this should not be an issue with most Short-Term Parallel Operation as at the time of synchronising with the mains most sites will normally be generating only sufficient output to match the site load. Therefore the power transfer on synchronising should be small, with the Generating Unit ramping down to transfer site load to the mains. If the Generating Unit tripped at this point it could introduce a larger Step Voltage Change than would normally be acceptable for loss of Generating Plant operating under a long-term parallel arrangement but in this event it could be regarded as an infrequent event and a step change of up to 10% as explained in Section 9.5 would be acceptable.
3	Clause 9.5.7	47	Typical The general limits for Step Voltage Change caused by the connection and disconnection of any Customers equipment to the Distribution System should be $\pm 3\%$ for infrequent planned switching events or outages in accordance with EREC P28. For unplanned outages such faults it will generally be acceptable to design to a Step Voltage Change of up to $\pm 10\%$. The Distribution Code makes allowances for these events in DPC4.

Draft Proposed Changes to the EREC G59 Issue 3 Amendment 4 July 2018
Resulting from Revision of
Engineering Recommendation P28

Item	Reference in EREC G59	Page	Legal Text
4	Clause 9.5.9	47	Customer Installations should be designed such that transformer magnetising inrush current associated with normal routine switching operations does not cause voltage fluctuations outside those in EREC P28 (ie a maximum of $\pm 3\%$) . To achieve this it may be necessary to install switchgear so that sites containing multiple transformers can be energised in stages.
5	Clause 9.5.10	47	Situations will arise from time to time For very infrequent events that result in rapid voltage change type characteristics, such as when complete sites including a significant presence of transformers are energised as a result of post fault switching, post fault maintenance switching, carrying out commissioning tests on Distribution System or on the Customer's system, In these situations it will generally be acceptable to design to an expected depression of around 10% recognising that a worst case energisation might be a larger depression, on the basis that such events are considered to be rare and it is difficult to predict the exact depression because of the point on wave switching uncertainty. Notwithstanding, such voltage changes should conform with the absolute limits for rapid voltage change stated in 5.3.2 of EREC P28. Should these switching events become more frequent than once per year then the design should revert to aiming to limit depressions to less than 3%.
6	Clause 13.6.3	116	Voltage fluctuations resulting from inadequate damping of control systems require study at the Point of Common Coupling (PCC) and must be compliant with EREC P28.