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Engineering Recommendation G81 Part 7

Issue 2 2016

Framework for contestable diversionary and reinforcement works not exceeding 33 kV

Part 7 Contestable diversionary and reinforcement works

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PUBLISHING AND COPYRIGHT INFORMATION

Operations Directorate
Energy Networks Association
6th Floor, Dean Bradley House
52 Horseferry Rd
London
SW1P 2AF

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Amendments since publication

Issue	Date	Amendment
1	2007	First issue
1 + A1	2008	Amendment 1: Reference to ENA Engineering Recommendation G70 replaced with ENA Technical Report 136. Reference to ENA Engineering Recommendation L38/1 replaced with L38. Reference to Electricity and Pipe Line Works (assessment of environmental effects) Regulations removed. Reference to Electricity Works (Environmental Impact Assessment) (England and Wales) Regulations, changed to refer to the document amended in 2007. Reference to Electricity Safety Quality and Continuity Regulations 2002, changed to refer to document amended in 2006.
2	2016	Minor revision to reflect changes in the Ofgem Competition in Connections regime and updating of reference publications and legislation. This issue includes the following principal technical changes. Clause 2: Deleted those publications already stated in EREC G81 Parts 1-6 and added statement that: “These references supplement those already set out in EREC G81 Parts 1-6, which must also be applied.” Added reference to ENA TS 43-122, ER G80, ER L44. Deleted HSE, Pooling & Settlement and Ofgem agreed publications not mentioned in main body of document.

		Clause 4 Legislation: Deleted legislation already stated in EREC G81 Parts 1-6 and added statement that: “These Acts and Regulations supplement those already set out in EREC G81 Parts 1-6, which must also be met.” Added equivalent Control of Pollution (Oil Storage) Regulations for Northern Ireland and Scotland and Conservation of Habitats and Species Regulations 2010. Clause 5.1 General: Added variations caused by “…network design and impact on fault levels”. Clause 7 Overhead line Works – Specific requirements: Reworded heading and requirements to make reference to specific requirements. Reworded requirement to “shall” in relation to information required to be submitted by the Applicant prior to the start of construction activity. Changed “closing” energising connection to “final”. Clause 8 Design and planning: Rewording such that ratings of diverted OHL match the rating of the newly installed contested circuit to which it is directly connected, where the rating is greater than that of the existing circuit. Clause 9 Provision of materials: Deleted requirements that are already stated in Parts 2 and 5 (to avoid duplication). Incorrect reference to Part 4 changed to Part 5. Clause 10: Installation and records: New clause added requiring compliance with EREC G81 Parts 3 and 6 for installation and records. Reference to CDM Regulations changed from “2007” to “2015”. Details of all other technical, general and editorial amendments are included in the associated Document Amendment Summary for this Issue (available on request from the Operations Directorate of ENA).

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Foreword

This Engineering Recommendation (EREC) is published by the Energy Networks Association (ENA) and comes into effect from date of publication. It has been prepared under the authority of the ENA Engineering Policy and Standards Manager and has been approved for publication by the ENA Electricity Networks and Futures Group (ENFG). The approved abbreviated title of this engineering document is "EREC G81 Part 7".

This EREC replaces and supersedes ER G81 Part 7 2008 (as amended).

This document is a "qualifying standard", being listed in Appendix 2 of The Distribution Code, and has been revised under the governance of the Distribution Code Review Panel and in association with the Ofgem Electricity Connections Steering Group.

EREC G81 is a suite of engineering documents that sets out a national framework to facilitate competition in new connections. EREC G81 Parts 1-3 are associated with low voltage (LV) housing development installations and associated new HV/LV distribution substations. EREC G81 Parts 4-6 are associated with commercial and industrial connections and associated new HV and HV/LV distribution substations. This part is associated with contestable diversionary and reinforcement works on underground cables and overhead lines not exceeding 33 kV and on HV/LV distribution substations.

Since ER G81 was last amended in 2008 the contestability of connection work has been extended to include jointing of metered and unmetered supplies to existing low voltage mains cables and to jointing of high voltage mains cables[1]. In addition, a significant number of references in the documents have been superseded and new references relevant to EREC G81 have been published. These changes and resultant changes to requirements are captured in this revision. The opportunity has been taken to align the document with the current ENA engineering document template and ER G0 governing the rules for structure, drafting and presentation of ENA engineering documents.

This document is intended to be used by Independent Connection Providers (ICPs) and Independent Distribution Network Operators (IDNOs) that undertake new connections under the Ofgem Competition in Connections regime.

Where the term "shall" or "must" is used in this document it means the requirement is mandatory. The term "may" is used to express permission.

NOTE: Commentary, explanation and general informative material is presented in smaller type, and does not constitute a requirement.

If there are queries about this document please discuss them with the Host Distribution Licence Holder (Host DLH) in whose area it is proposed that work is to be undertaken. In the event that it is not possible to resolve the question with the Host DLH, please seek advice from the Connections Policy Team, Ofgem, 9 Millbank, London SW1P 3GE.

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[1] See Ofgem decision letter dated 8 May 2012 [1].

1 Scope

This document sets out design and planning, materials specification requirements, and installation and records requirements for contestable diversionary and reinforcement works on underground cables and overhead lines not exceeding 33 kV and associated distribution substations undertaken under the Ofgem Competition in Connections regime.

The following suite of documents set out requirements that also apply to elements of contestable diversionary and reinforcement work.

- Adoption Agreement[2].
- Design and planning framework (EREC G81 Parts 1 & 4).
- Materials specifications framework (EREC G81 Parts 2 & 5).
- Installation and records framework (EREC G81 Parts 3 & 6).
- Underground unmetered connections framework.

This Part of EREC G81 serves to amplify and extend requirements in these documents to contestable diversionary and reinforcement works that fall within the scope of EREC G81 Part 7. As such, this Part must be read in conjunction with EREC G81 Parts 1 to 6, as their content is not duplicated here.

NOTE: This suite of documents applies only to new installations and is not to be applied retrospectively.

This document set outs and makes reference to requirements which have to be met for a Host DLH to adopt contestable diversionary or reinforcement works.

Within the scope of this document, the dismantlement of existing Host DLH assets and the design of reinforcement works are non-contestable.

This document supplements but not amend, abridge or override any statutory legislation referred to within this document.

2 Normative references

The following referenced documents, in whole or part, are indispensable for the application of this document and must be complied with unless otherwise agreed in writing with the Host DLH. The latest editions of these documents including all addenda and revisions shall apply unless otherwise agreed with the Host DLH. These references supplement those already set out in EREC G81 Parts 1-6, which must also be applied.

NOTE: It is not appropriate to cross-reference all relevant requirements from the following publications in this document. Where a publication is not specifically cross-referenced in the main clauses of this document then all relevant requirements are deemed to apply.

Standards publications

BS 7870-5, *LV and MV polymeric insulated cables for use by distribution and generation utilities. Polymeric insulated aerial bundled conductors (ABC) of rated voltage 0.6/1 kV for overhead distribution*[3]

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[2] Also known as “Agreement to Adopt”.

[3] BS 7870-5 to be applied subject to certain amendments/additions/deletions in ENA TS 43-13.

BS 7884, *Specification for copper and copper-cadmium stranded conductors for overhead electric traction and power transmission systems*

BS EN 50182, *Conductors for overhead lines. Round wire concentric lay conductors*

Energy Networks Association publications[4]

ENA TS 09-20, *Single core cables having cross linked polyethylene insulation and lead sheath for rated voltage 19 000/33 000 volts (Um = 36 000 volts)*

ENA TS 43-8, *Overhead line clearances*

ENA TS 43-12, *Insulated aerial bundled conductors erection requirements for LV overhead distribution systems*

ENA TS 43-13, *Aerial bundled conductors (ABC) insulated with cross-linked polyethylene for low voltage overhead distribution[5]*

ENA TS 43-14, *Conductor fittings and associated apparatus for use with LV aerial bundled conductors*

ENA TS 43-15, *Insulator binds and equivalent helical fittings for overhead lines*

ENA TS 43-30, *Low voltage overhead lines on wood poles*

ENA TS 43-40, *Specification for single circuit overhead lines on wood poles for use at high voltage up to and including 33 kV*

ENA TS 43-88, *Selection and treatment of wood poles and associated timber for overhead lines*

NOTE: ENA TS 43-88 Parts 1 and 2 have now been superseded by ENA TS 43-88 Issue 5.

ENA TS 43-90, *Anti-climbing measures and safety signs for high voltage overhead lines*

ENA TS 43-91, *Stay strands and stay fittings for overhead lines*

ENA TS 43-92, *Overhead line fittings*

ENA TS 43-93, *Line insulators*

ENA TS 43-95, *Steelwork for overhead lines*

ENA TS 43-103, *Low voltage overhead line temporary shrouding materials*

ENA TS 43-117, *Installation of aluminium current carrying overhead line conductor fittings*

ENA TS 43-119, *Design and use of temporary scaffold guards*

ENA TS 43-120, *Fittings for covered conductors for overhead lines (having rated voltages Uo/U greater than 0.6/1 kV up to and including 19/33 kV)*

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[4] ENA documents can be obtained via the ENA web site: www.energynetworks.org.

[5] ENA TS 43-13 to be read in conjunction with BS 7870-5.

ENA TS 43-121, *Specification for single circuit overhead lines of compact covered construction on wood poles for use at high voltage up to and including 33 kV*

ENA TS 43-122, *XLPE covered-conductors for overhead lines (having rated voltages Uo/U greater than 0.6/1 kV up to and including 19/33 kV)*

ENA TS 43-123, *Performance criteria for fall prevention/fall arrest devices for use on poles whilst ascending and descending*

ENA TS 43-125, *Design guide and technical specification for overhead lines above 45 kV*

ER G55/2, *Safe tree working in proximity to overhead lines*

ER G80*, Recommendations for the safe working of utilities' staff and other parties near light rapid transit systems*

ER L38, *Overhead line conductors – Protection against corrosion by the application of anti-corrosion grease during manufacture*

ER L44, *Separation between wind turbines and overhead lines: Principles of good practice*

ETR 132, *Improving network performance under abnormal weather conditions by use of a risk based approach to vegetation management near electric overhead lines*

ETR 136, *Vegetation management near electricity equipment – principles of good practice*

Health & Safety Executive (HSE) publications

GS 6, *Avoiding danger from overhead power lines*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
Applicant
company wishing to undertake the contestable work

3.2
BS
British Standard

3.3
BS EN
European Standard adopted as a British Standard

3.4
BSI
British Standards Institution

3.5
CDM
Construction (Design and Management) Regulations 2015

3.6
Distribution Licence Holder (DLH)
Holder of an Electricity Distribution Licence defined in Electricity Act 1989 Standard conditions of the Electricity Distribution Licence