

Modification proposal:	Distribution Code: Modification to the Distribution Code for the revision of Engineering Recommendation G59/1		
Decision:	The Authority directs that this proposal be made ¹		
Target audience:	Parties to the Distribution Code and other interested parties		
Date of publication:	28 July 2010	Implementation Date:	1 August 2010

Background to the change proposal

Electricity Distribution Licence holders² are required by Standard Licence Condition ("SLC") 20 to have in force and comply with the Distribution Code. SLC 21 requires that licensees take all steps within their power to ensure that the Distribution Code in force under the licence at 31 May 2008 remains a code approved by the Authority³ that complies with the requirements set out in that condition. This imposes, in effect, a duty on licence holders to review and, where appropriate, seek the Authority's approval for modification of the Distribution Code so as to better achieve the requirements of SLC 21.

The Energy Networks Association's ("ENA") Engineering Recommendation G59/1 ("ER G59/1") provides recommendations for the connection of generating plant to the distribution systems of electricity distribution licence holders. It is referenced in Annex 1 of the Distribution Code and is incorporated within the Distribution Code. Therefore, any change to ER G59/1 requires the approval of the Authority.

The Engineering Recommendation is the primary technical document relating to the connection of generating plant to a distribution network in Great Britain. The current version, ER G59/1, came into effect in 1995. It is supplemented by Engineering Technical Report ("ETR") 113, which provides further guidance for the protection of generating plant that operates in parallel with a distribution network. A further document, ER G75/1, is also currently available to provide additional guidance for the connection of generators that have a capacity greater than 5MW or are connected at a voltage greater than 20kV. All of these documents are governed by the Distribution Code Review Panel ("DCRP").

The review of ER G59/1, ER G75/1 and ETR 113

In June 2006, the DCRP decided to establish a Working Group to review ER G59/1, ER G75/1 and ETR 113 with the intention of producing a new document (or new documents) addressing the connection of all generators except those covered by ER G83⁴.

The terms of reference for the Working Group were agreed by the DCRP. This was a major project. In essence, the Working Group intended to introduce a single document, developed from ER G59/1, to replace that document as well as G75/1 and ETR 113. Additionally, it was decided that the provisions in these documents that are considered to be mandatory, rather than guidance, should be set out in the Distribution Code itself in the interest of clarity. The results of this work are significant revisions to the Distribution Code and a new version of ER G59 - ER G59/2. It is proposed to withdraw ER G75/1 and ETR 113.

¹This decision document includes the reasons for this decision as required by section 49A of the Electricity Act 1989.

² This includes the fourteen ex-PES licensees referred to as DNOs and all other licence holders referred to as IDNOs.

³ The terms 'the Authority', 'Ofgem' and 'we' are used interchangeably in this document. The Authority is the Gas and Electricity Markets Authority; the regulator of the gas and electricity industries in GB. Ofgem is the Office of the Gas and Electricity Markets which supports the Authority.

⁴ Currently version G83/1-1 - this addresses the connection of small-scale generators up to 16A per phase.

The consultation

The DCRP published a consultation document on the changes to the Distribution Code and ER G59/2 on its website on 29 January 2010. The consultation closed on 12 March 2010. 15 responses were received, including responses from all the Distribution Network Operators ("DNOs") and National Grid. The Working Group reviewed all the responses and made further changes to the documents where they considered them to be appropriate. Feedback was provided to all respondents at the point that the document was finalised.

At the DCRP meeting on 5 May 2010, the final documents were reviewed and the DCRP gave its unanimous approval for a submission to Ofgem requesting the approval of a revised version of the Distribution Code and ER G59/2. The Chair of the DCRP wrote to us on 5 May 2010, on behalf of the Electricity Distribution Licence holders, with a report to the Authority, as required by SLC 21.9, seeking approval to modify the Distribution Code to recognise the introduction of ER G59/2.

The modification proposal

As described above, the proposal is to replace ERs G59/1 and G75/1 and ETR 113 with ER G59/2. In addition, it is proposed to set out in the Code itself the mandatory requirements of ER G59/2.

Rather than being a limited code modification, this work has addressed a number of technical issues relating to the connection of generators to distribution networks. These include, for example, protection settings, the use of neutral voltage displacement protection, voltage step changes, fault ride through and the use of the DNO's circuit breaker. These were summarised in the consultation report published on the Distribution Code website⁵.

Ofgem understands that the overall aim of this review has been to bring greater clarity and transparency to the Distribution Code in relation to the requirements on network users, in particular generation scheme developers.

In addition to these modifications, the report to the Authority proposes that an existing Engineering Recommendation, P18 ("ER P18"), should come under the governance of the DCRP by being included in Annex 1 of the Distribution Code. ER P18 sets out guidance relating to the complexity of 132kV networks and was published in 1978.

DCRP Panel recommendation

The DCRP considered this modification proposal at its meeting on 5 May 2010 and agreed unanimously to seek our approval to modify the Distribution Code and introduce ER G59/2. The report to the Authority from the Chair of the DCRP, also dated 5 May 2010, recommends approval.

The changes proposed by the DNOs are set out in the Report to the Authority by the Chair of the DCRP as required by SLC 21.9 of the Electricity Distribution Licence. This recommendation was unaffected by the changes made as a result of the HSE comments which were discussed by the DCRP on 3 June 2010 (see below).

Ofgem's consideration of the report to the Authority

⁵ <http://www.energynetworks.info/consultations/>

We have attended the Working Group meetings as an observing party, and we are represented on the DCRP. We are aware of the extent and complexity of the work carried out and of the steps taken, including consultation, to involve stakeholders in the process.

The report to the Authority noted that, although the HSE had been engaged in specific aspects of this work, they had not responded formally at the consultation stage. HSE expressed to Ofgem, however, a wish to review the final ER G59/2 document, which it subsequently did. As a result of this review, a small number of minor changes were made. These changes were discussed and agreed to at the DCRP meeting on 3 June 2010. We have published the HSE's letter to us with this decision letter on our website⁶.

In light of the scope and complexity of ER G59/2, we were assisted by external experts in carrying out a review of the document in accordance with our obligations under the Act⁷. This review concluded that ER G59/2 represents a considerable improvement on its predecessor documents. It found no substantial and material issues that needed to be addressed. However, it did identify a number of minor points which it recommended should be taken account of. We have discussed these proposed changes with our external experts and with the Chair of the DCRP. As a result of these discussions, we have decided to direct a number of additional changes to ER G59/2. These additional changes are set out in Attachment 1 to this letter.

The Authority's decision

SLC 21.10 of the Electricity Distribution Licence provides that modifications to the Distribution Code that are proposed by the licensees and sent to the Authority cannot be implemented without the Authority's approval.

The Authority has considered the Report to the Authority dated 5 May 2010 and the comments received during the consultation process. The Authority has also considered the results of the review carried out by external experts. The Authority has concluded that:

1. implementation of the modification proposal will better facilitate compliance with the requirements set out in SLC 21 of the Electricity Distribution Licence; and
2. the modification made is consistent with the Authority's principal objective and statutory duties⁸.

Regarding the governance of ER P18, the Authority agrees that it would be appropriate for it to be governed by the DCRP, as ER P18 can have material impacts on Users. However, the Authority has decided that it should be included as an Appendix 2 standard rather than included in Annex 1. This is explained below.

Reasons for the Authority's decision

Discussions at the DCRP and elsewhere demonstrated a clear need to review ERs G59/1 and G75/1, and we supported the DCRP's decision in 2006 to initiate this review.

As stated above, we have observed the process that the DCRP and the Working Group have followed in carrying out this review, in particular the steps taken to engage stakeholders in the process.

⁶ <http://www.ofgem.gov.uk/Networks/Techn/TechStanddds/Pages/TechStanddds.aspx>

⁷ The Electricity Act 1989.

⁸ The Authority's statutory duties are wider than matters which the Panel must take into consideration and are largely provided for in statute, principally in this case the Electricity Act 1989 (as amended most recently by the Energy Act 2010), as well as arising from directly effective European Union law.

While the consultation process did raise some issues, the proposals have generally been welcomed by stakeholders. Where parties proposed changes, these were considered by the Working Group before deciding whether they should be included or not.

SLC 21 requires that the Distribution Code should, amongst other things, set out all material technical aspects relating to connections to and the operation and use of the licensee's Distribution System through a Planning and Connection Code. We supported the DCRP's decision to update ER G59/1 and consider that ER G59/2 better meets this requirement. It does this by updating the guidance on a number of technical issues and stating clearly which connection requirements are mandatory.

SLC 21 also requires the Distribution Code to permit the development, maintenance, and operation of an efficient, co-ordinated, and economical system for the distribution of electricity. We consider that this requirement is better met by updating and clarifying the connection and operating requirements for distributed generators which this proposal furthers.

Finally, SLC 21 requires the Distribution Code to facilitate competition in the generation and supply of electricity. We consider that the rationalisation of the existing guidance documents is likely to make the connection process more efficient, which may contribute to the development of distributed generation, and facilitate competition in the generation market. In particular, it is expected that changes to the requirement for NVD protection should reduce the cost of connection for smaller generators in some DNO areas.

Regarding the governance of ER P18, we have considered the definitions of "Annex 1 standards"⁹ and "Appendix 2 standards"¹⁰ in the Distribution Code and concluded that designation as an "Appendix 2 standard" is more appropriate, as ER P18 does not directly implement any Distribution Code requirements. Any changes to ER P18 will still require Authority approval unless they receive unanimous support at the DCRP.

Ofgem considers that, having regard to the DNOs' obligations set out in SLC 21 of the Electricity Distribution Licence and the Authority's wider statutory duties, the Authority should approve the proposed change to the Distribution Code.

Decision notice

In accordance with SLC 21.10 of the Electricity Distribution Licence, the Authority, hereby directs that:

- (i) the changes to ER G59/2 in Attachment 1 have effect; and subject to those changes**
- (ii) the modifications to the Distribution Code set out in the Report to the Authority of 5 May 2010 be made;**
- (iii) ER G59/2 replaces ER G59/1, ER G75/1 and ETR 113; and**
- (iv) ER P18 be included as an Appendix 2 Standard.**

Rachel Fletcher



Partner Distribution

Signed on behalf of the Authority and authorised for that purpose.

⁹ Annex 1 Standard - an electricity industry national standard that implements Distribution Code requirements and which is listed in Annex 1 of the Distribution Code, and forms part of the Distribution Code.

¹⁰ Appendix 2 Standard - an electricity industry national standard that has a material effect on Users but does not implement any Distribution Code requirements and does not form part of the Distribution Code technical requirements. A list of these standards is maintained by the Distribution Code Review Panel as Appendix 2 to the Guide to the Distribution Code.

G59/2: Changes directed by the Authority

Section	Comment	Direction
Figure 8.8	<p>CB contact in DNO cut out not correctly positioned.</p> <p>Metering equipment has a contact instead of a link.</p> <p>Thin neutral connection shown from metering equipment to the earth connection.</p>	<p>Amend diagram.</p> <p>Amend diagram.</p> <p>Amend diagram to delete connection.</p>
Figure 8.9	Switch in generator earth, contact sense and interlock should be explained (open when CB closed).	Add the following to Note 3 – “This switch should also close the generator neutral and earth switches during independent operation.”
10.3.1	Earthing is not an objective of LoM: “This LoM protection is required to ensure that the requirements for Distribution System earthing, and out-of- Synchronism closure are complied with and that Customers are not supplied with voltage and frequencies outside statutory limits.”	<p>Clarify why LoM protection is required for earthing and out of synch protection. The LoM protection is intended to trip on fault detection, not provide check synch protection before a CB is closed.</p> <p>Make the following change: “This LoM protection is required to ensure that <u>the Generating Plant is disconnected to ensure that the requirements for Distribution System earthing, and out-of-Synchronism closure are complied with and that Customers are not supplied with voltage and frequencies outside statutory limits.”</u>”</p>
10.3.12	‘... insensitive to slow changes and rates of change of frequency.’	Modify to read ‘...slow rates of change of frequency.’
10.3.14, 10.5.2	<p>‘In those cases where the DNO requires LoM...’ clause. LoM is always required.</p> <p>Clarify the last sentence as LoM protection is always required as stated in 10.3.1. This sentence implies that LoM must be provided by</p>	<p>Insert a new 10.3.2 as follows: <u>“LoM is mandatory for all Small Power Stations. For Medium and Large Power Stations the DNO will advise if LoM is required. The requirements of 10.5.2 apply to LoM protection for all power stations”.</u></p>

	<p>intertripping.</p> <p>The document would benefit from the addition of words of clarification.</p>	
Figure 10.2	Trip signals from LOM etc missing.	Amend diagram to add signals