DCode

DCRP_16_04_05

Consequential Changes to the Distribution Code on Entry into Force of the Transmission System Operation Guidelines EU Network Code

GB Distribution Code Review Panel

Meeting 62 – Thursday 8 December 2016

Paper by Code Administrator

Background

The EU Network Code "Transmission System Operation Guidelines" (TSOG) is expected to come into force ("entry into force" or EIF) in early 2017 (it has been voted on and accepted at the Cross Border Committee, and is now being translated into member state languages before being published in the EU Journal, when it passes into law twenty days later).

As with the connexion codes that have already entered into force, most of the TSOG has delayed implementation period, with different articles becoming active at 12 months 18 months or two years after EIF.

However there are a number of Articles that are immediately effective at EIF. There are about three dozen of the 192 articles that are immediately effective.

The TSOG is likely to have considerable effect on the drafting of the D Code. However these other effects are mainly associated with data transfer and outage co-ordination, and as stated above, will be developed over the next 12 to 18 months, and will result in further separate D Code modification proposals.

EIF Requirements

The GC0095 joint GCRP/DCRP WG has examined the articles that are effective immediately at EIF. In the main these reflect current GB practices and procedures, and no changes to the Grid Code have been identified. A list of the principal EIF Articles is attached as Appendix 1.

For the Distribution Code and its scope, there are two places where specific articles in the TSOG require activities that are probably implicit in the GB arrangements, but are infrequently (if ever) exercised and are not explicitly recognized in the D Code drafting.

Article 54.2 requires a User to notify the DNO if there is any "operational disturbance" which affects its ability to retain compliance. It is suggested that a simple amendment to the definition of "event" as used predominantly in DOC7 (and DOC9) of the D Code would cover off this requirement.

Article 54.3 requires the DNO to recognize a User initiated test plan so that the User can establish compliance (or for other reasons). The ability of a User to initiate such tests, separate from those jointly undertaken at commissioning etc, is only implicit in the D Code (and G59). A simple modification to DOC5 would make the testing provisions of DOC5 reciprocal in that they can be initiated formally by either DNO or the User.

The simple drafting modifications to effect these changes is attached to this paper as appendices 2 and 3.

Recommendation

As these proposed changes are consequential on the TSOG entering in UK law, and are simple in nature arguably only making explicit what is currently implicit, the Panel, if unanimous, can recommend that the DNOs recommend to the Authority that the changes are made without consultation.

It is recommended that the Panel direct the Code Administrator to submit a report to the Authority making the changes as shown in the change tracked attachments. The implementation date can be as soon as possible and it is suggested that 1 February should be the target.

TSOG EIF Mapping

Summary of mapping for articles marked as EIF in TSOG code mapping spreadsheet and the DNO and DNO customer compliance implications

Article	Distribution connected party implications
Article 18 System States	For TSO to publish. No obvious distribution implications
Article 19 Monitoring and determination of system states by TSOs	For TSO to perform. No obvious distribution implications
Article 20 Remedial actions in system operation	For TSO to perform. No obvious distribution implications
Article 21 Principles and criteria applicable to remedial actions	For TSO to perform. No obvious distribution implications
Article 22 Categories of remedial actions	Art 22 1 is a list of remedial actions that cannot all be activated for every occurrence when remedial action is required. Of particular interest to DNOs is Art 22 1 (c) (iv) which relates to instructions that the TSO can issue to DSOs (eg blocking automatic tap changer operation). DNOs don't necessarily have the means of acting upon such potential instructions as they are not currently required by the GCode. However NG has confirmed that they will not issues these instructions; there is no provision in the G Code to do so. Therefore DNOs and SGUs cannot respond to such a request as it can never be made, under current arrangements. If NG wishes to issue such instructions it will modify the GCode via the normal industry process.
Article 23 Preparation, activation and coordination of remedial actions	Art 23 3. - Requires DSOs to provide information to NG so that they can assess the impact or any remedial actions considered. NG have confirmed that they are not proposing to change the GCode and by implication that the present GCode obligations provide them with sufficient information to comply with TSOG. Art 23 4 - Requires NG to co-ordinate with DSOs or SGU to co-ordinate any remedial actions and for the DSO or SGU to implement any such instruction. NG have confirmed that they are not proposing to change the Grid Code and by implication that the present co-ordination obligations are sufficient

	to comply with TSOG. There is therefore no prospect of DNOs or embedded parties without a direct NG contract (ie BMUs or BEGA) being given instructions that are outside of the current arrangements.
Article 24 Availability of TSO's means, tools and facilities	Art 24 2 requires DSOs or SGU to work with NG to specify the availability of the means, tools and facilities to operate the transmission system. NG have confirmed that they do not see any DNO or SGU involvement as envisaged by Art 24 2. There are no current Grid Code or other obligations on DNOs or SGUs related to this article, and therefore nothing required by DNOs to ensure compliance.
Article 25 Operation security limits	For TSO to perform. No obvious distribution implications
Article 26 Security plan for critical infrastructure protection	For TSO to perform. No obvious distribution implications
Article 27 Obligation of all TSOs regarding voltage limits	Art 27 4 requires that NG are required to ensure that voltages remain within wider limits in some operational scenarios, where wider limits are agreed. NG has confirmed that they do intend to utilise wider voltage ranges, hence no agreement is required and no action is required for compliance. Art 27.5 requires that NG agree voltage ranges for sub 110kV networks where relevant for maintaining operational security. NG has confirmed that sub 110kV voltage ranges are not relevant for maintaining operational security, hence no agreement is required and no action is required for compliance.
Article 28 Obligations of SGUs concerning voltage and reactive power management	Art 28 2 only applies to D connected demand SGUs when the DCC comes into force in September 2019. No change is required for EIF.
Article 29 Obligations of all TSOs concerning voltage and reactive power management in system operation	Art 29 5 requires NG and DSO to agree reactive power exchange / voltage etc at the GSP. Art 29.5 only applies to new distribution systems or facilities – ie post Sep 2019 at the earliest. No change is required for EIF. Art 29 7 relates to instructions that the TSO can issue to DSOs (e.g. blocking automatic tap changer operation). NG has confirmed that they will not introduce any new G Code requirements as their approach is already TSOG compliant. Therefore no change to current arrangements for DNOs and

	nothing for DNOs to do for EIF. See Art 22 1 (c) (iv). Art 29 9 requires an embedded SGU to follow a voltage control instruction issues by NG. NG has confirmed that this functionality will not be used by NG except for embedded SGUs with which it has a contract. Hence no DNO action required for compliance.
Article 30 Short circuit current	For TSO to perform. No obvious distribution implications
Article 31 Short circuit current calculation and related measures	For TSO to perform. No obvious distribution implications - the present WK24 data submission should provide NGET with the information needed from the DNOs for relevant DNO networks to be included in NG's fault level assessments.
Article 32 Power flow limits	For TSO to perform. No obvious distribution implications
Article 36 General requirements on protection	For TSO to perform. No obvious distribution implications
Article 37 Special protection schemes	Art 37 7 requires NG to co-ordinate with DSOs and SGUs where there is a special protection scheme. NG will circulate a list of such schemes to DNOs. An issue which can be considered in future is codifying a data exchange to keep records of such schemes up to date with all parties..
Article 38 Dynamic stability monitoring and assessment	For TSO to perform. No obvious distribution implications
Article 39 Dynamic stability management	Art 39 1 states that NG actions to maintain dynamic stability may involve SGUs. NG has confirmed that this will only be applied to embedded SGUs where NG has a direct contract with the SGU, ie current arrangements will apply Hence no DNO action required for compliance.
Article 54 Responsibility of SGUs	Art54 1 relating to planned users modifications is covered in standard industry arrangements – CUSC, bilateral contracts and the NTC. No further action required for compliance. Art 54.2 would benefit from a clarificatory amendment to DOC7. DNO action to progress a change to the DCode. Art 54.3 would benefit from a clarificatory amendment to DOC5. DNO action to progress a change to the DCode.

	Art 54 4 is covered already – but only applies to RfG and DCC compliance – so not for three years. No change is required for EIF.
Article 55 Tasks of TSOs regarding system operation	For TSO to perform. No obvious distribution implications
Article 56 Purpose and responsibilities	Art 56 1 relates to operational testing but only applies to T connected SGUs. However although Art 56 1 is unclear in application, the drafting suggestion for DOC5 proposed to implement Art 54 3 above also covers off the application of Art 56.1 to embedded SGUs. Art 56 2 (b) relates to the use of the test results to ensure the correct functioning of the DSO or SGU. This is largely implicit with all the activities already taking place under the existing GCode/DCode (DOC5) and their governance arrangements, so no further clarity is required for EIF Art 56 2 (c)requires the DSO and SGU to maintain and develop existing practices Art 56 2 (e) Covered in DOC 12 already. Art 56 3 and 4 relate to managing the potential impact arising from conducting a test and can only be read sensibly with the interpretation that the SGUs referred to are T connected hence no DNO action required for compliance.
Article 57 Performing operational tests and analysis	Art 57.2 requires the DNO to publish testing documentation. For generation SGUs this is covered in the proposed compliance processes in G98 and G99. Guidance may be required for demand SGUs prior to DCC being implemented. No change is required for EIF.
Article 62 Common language for communication between the system operator employees in charge of real time operation	For TSO to perform. No obvious distribution implications
Article 63 Cooperation between TSOs on training	For TSO to perform. No obvious distribution implications
Article 81 Regional adequacy assessment	For TSO to perform. No obvious distribution implications
Article 82 Outage coordination objective	For TSO to perform. No obvious distribution implications

Article 108 Ancillary Services	For TSO to perform. No obvious distribution implications
Article 109 Reactive Power Ancillary Services	Art 109 2 (c) requires that the TSO shall monitor the reactive power capability of the DNOs. There is currently no GCode obligation for DNOs to provide such information and NG have confirmed that they are not proposing to change the GCode and by implication that the present GCode obligations provide them with sufficient information to comply with TSOG
Article 110 Establishment of scheduling process	For Art 110 if embedded SGUs are in scope it will be only those with a direct contract with NG. NGET have confirmed that the only generators that are required to be scheduled are BM units including embedded BM units where they already have a contractual agreement with the generator. Hence no DNO action required for compliance.
Article 111 Notification of schedules within scheduling areas	For Art 111 if embedded SGUs are in scope it will be only those with a direct contract with NG.
Article 112 Coherence of schedules	For Art 112 if embedded SGUs are in scope it will be only those with a direct contract with NG.
Article 113 Provision of information to other TSOs	For TSO to perform. No obvious distribution implications
Article 114 General provisions for ENTSO for Electricity operational planning data environment	For TSO to perform. No obvious distribution implications
Article 118+ LFC&R	For TSO to perform. No obvious distribution implications

DISTRIBUTION OPERATING CODE (DOC)

DISTRIBUTION OPERATING CODE 5

DOC5 TESTING AND MONITORING

DOC5.1 Introduction

DOC5.1.1 To ensure that the **DNO's Distribution System** is operated efficiently and within its licence standards and to meet statutory actions the **DNO** will organise and carry out testing and/or monitoring of the effect of **Users**' electrical apparatus on the **DNO's Distribution System**.

DOC5.1.2 The testing and/or monitoring procedures will be specifically related to the technical criteria detailed in the **Distribution Planning and Connection Code**. They will also relate to the parameters submitted by **Users** in the **Distribution Data Registration Code.** Such testing can also be initiated on request from the **User** for the purpose of the **User** ensuring compliance with the above technical criteria.

DOC5.1.3 This DOC5 also covers the testing requirements that might be imposed from time to time on **Embedded Medium Power Stations** owned by a **Generator** who is not party to the **CUSC**

DOC5.1.4 The testing carried out under this **Distribution Operating Code** (DOC5) should not be confused with the more extensive **System Test** outlined in DOC12.

DOC5.2 Objective

DOC5.2.1 The objective of this **Distribution Operating Code** is to specify the **DNO's** requirement to test and/or monitor its **DNO's Distribution System** to ensure that **Users** are not operating outside the technical parameters required by the **Distribution Planning and Connection Code** and/or the **Distribution Operating Codes**.

DOC5.3 Scope

DOC5.3.1 This Distribution Operating Code applies to the following **Users** of the **DNO's Distribution System**:-

(a) **Customers** (it is not intended that the **Distribution Code** will necessarily apply to small **Customers** individually - their obligations will generally be dealt with on their behalf by their **Supplier**).

(b) **Embedded Generators.**

(c) **Other Authorised Distributor** connected to the **DNO's Distribution System.**

(d) **Suppliers**.

(e) **Meter Operators.**

DOC5.4 Procedure Related to Quality of Supply

DOC5.4.1 The **DNO** will from time to time determine the need to test and/or monitor the quality of supply at various points on its **DNO's Distribution System**.

DOC5.4.2 The requirement for specific testing and/or monitoring may be initiated by the receipt of complaints as to the quality of supply on the **DNO's Distribution System**.

DISTRIBUTION OPERATING CODE (DOC)

DISTRIBUTION OPERATING CODE 7

DOC7 OPERATIONAL LIAISON

DOC7.1 Introduction

DOC7.1.1 This **Distribution Operating Code** DOC7 sets out the requirements for the exchange of information in relation to **Operation**s and/or **Events** on the **DNO's Distribution System** and on the immediately adjacent parts of adjoining **Systems** which have had (or may have had), or will have (or may have) an **Operational Effect**.

(a) on the **DNO's Distribution System** or on the **System** of any other **User** in the case of an **Operation** and/or **Event** occurring on the **System** of a **User**, and

(b) on the **System** of a **User** in the case of an **Operation** and/or **Event** occurring on the **DNO's Distribution System** or the **National Electricity Transmission System,**

where no requirement for liaison is specified in any other section of the **Distribution Code.**

DOC7.1.2 The requirement to notify in DOC7 relates generally to communicating what has happened or what is to happen and not the reasons why. However, DOC7 provides, when an **Event** has occurred on the **DNO's Distribution System** which itself has been caused by (or exacerbated by) an **Operation** or **Event** on a **User's System**, the **DNO** in reporting the **Event** on the **DNO's Distribution System** to a **User** can pass on what it has been told by the **User** in relation to the **Operation** on that **User's System**.

DOC7.2 Objective

To provide for the exchange of information so that the implications of the **Operation** and/or **Event** can be considered and the possible risks arising from it can be assessed and appropriate action taken by the relevant party in order to maintain the integrity of the **Total System** and the **User's System**. This **Distribution Operating Code** does not seek to deal with any actions arising from the exchange of information, but merely with that exchange.

DOC7.3 Scope

This Distribution Operating Code applies to the **DNO** and to **User**s, which in this Distribution Operating Code means:-

(a) ~~**High Voltage**~~ **Customers.**

(b) **Embedded Generators** connected to the **DNO's Distribution System** at **HV.**

(c) **Other Authorised Distributors** connected to the **DNO's Distribution System** at **HV.**

(d) **Suppliers** on behalf of their **Customers** where appropriate

DISTRIBUTION GLOSSARY AND DEFINITIONS (DGD)

Distribution Operating Code (DOC)	That portion of the **Distribution Code** which is identified as the **Distribution Operating Code.**
Distribution Planning and Connection Code (DPC)	That portion of the **Distribution Code** which is identified as the **Distribution Planning and Connection Code.**
Distribution System	The electrical network operated by an **Other Authorised Distributor.**
Distribution Use of System Agreement	The standard form of agreement of that name, as amended from time to time.
Earthing Device	A means of providing a connection between an **Isolated** conductor and earth.
Electricity Safety, Quality and Continuity Regulations (ESQCR)	The statutory instrument entitled The Electricity Safety, Quality and Continuity Regulations 2002 as amended from time to time and including any further statutory instruments issued under the **Act** in relation to the distribution of electricity.
Embedded	Having a direct electrical connection to a **Distribution System.**
Embedded Generator	A **Generator** including a **Customer With Own Generation** whose **Generation Sets** are directly connected to the **DNO's Distribution System** or to an **Other Authorised Distributor** connected to the **DNO's Distribution System.** The definition of **Embedded Generator** also includes the **OTSO** in relation to any **Embedded Transmission System**
Embedded Transmisison Licensee	**Offshore Transmission Licensee** for an **Embedded Transmission System**
Embedded Transmission System	An **Offshore Transmission System** directly connected to the **DNO's Distribution System** or to an **Other Authorised Distributor** connected to the **DNO's Distribution System.**
Entry Point	The point at which an **Embedded Generator** or other **Users** connect to the **DNO's Distribution System** where power flows into the **DNO's Distribution System** under normal circumstances**.**
Equipment	**Plant** and/or **Apparatus.**
Electricity Supply Industry (ESI)	Electricity Supply Industry.
Event	An unscheduled or unplanned (although it may be anticipated) occurrence on or relating to a **System** including, without limiting that general description, faults, incidents and breakdowns and adverse weather conditions being experienced. It includes an occurrence where the compliance of **Customer**'s **Equipment** with this **Distribution Code**, or where relevant the **Grid Code**, is, or might be, compromised.