nationalgridESO

CONTROL TELEPHONY ELECTRICAL STANDARD

Issue 3.0

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Version Control

Version	Date	Author	Rationale
Issue 1	17 September 2007	The Company	Base Document
Issue 2	4 September 2023	The Company	Updated to include requirements from implementation of the EU Emergency and Restoration Code through Grid Code Modification GC0148
Issue 3	March 2024	The Company	Updated to include requirements from implementation of the Electricity System Restoration Standard through Grid Code Modification GC0156. National Grid ESO changed to The Company

1. Purpose

The purpose of this document is to define the **Control Telephony** requirements applicable to **Users** of the **Transmission System** (such as **Generators**, **HVDC System Owners**, **Network Operators and Non-Embedded Customers**) and **The Company** who will implement these requirements in co-ordination with the **Relevant Transmission Licensees** where applicable.

The Grid Code and **Bilateral Agreement** specifies the need for a **User** to have **Control Telephony**. In general, **Control Telephony** is required from any **User** who owns and operates **Plant** which is directly connected to the **Transmission System**, any **User** who owns and operates an **Embedded Large Power Station** or any **Restoration Contractor** who is party to a **Local Joint Restoration Plan**. In the case of **Restoration Contractors** named in a **Distribution Restoration Zone Plan**, the requirements for telephony will be specified by the **Network Operator** and this **Electrical Standard** is not applicable.

Control Telephony and **Automatic Logging Devices** such as EDL (Electronic Despatch Logging) or API (Application Protocol Interface) are the two principal tools used by **The Company** in instructing **Users** to control the **Total System**.

This document only covers the requirements for **Control Telephony**. The requirements for other communications standards are covered in **The Company**'s Communications Standards which are available on **The Company's** website under the Grid Code Electrical Standards documents page.

As defined in Grid Code CC.6.5.2.1 and ECC.6.5.2.1, **Control Telephony** is the principal method by which a **User's Responsible Engineer / Operator**, the **Relevant Transmission Licensee's Control Engineers** and **The Companys' Control Engineers** speak to one another for the purposes of controlling the **Total System** under both normal and emergency operating conditions. **Control Telephony** provides secure point to point telephony for routine **Control Calls** and emergency **Control Calls**.

This document covers the technical requirements for **Control Telephony** between **The Company** and **Users** of the **Transmission System**. The communication requirements between **The Company** and the **Relevant Transmission Licensees** fall under the **System Operator Transmission Owner Code** (STC) and in particular STCP 04-5 (Operational Telephony), but the communication system equipment provided by **The Company** (in co-ordination with the **Relevant Transmission Licensees**) conforms to the requirements of this document.

It should be noted that **Relevant Transmission Licensees** in co-ordination with **The Company** will need to liaise with **User's** in order to facilitate the installation and co-ordination of the **Control Telephony** system. The **Relevant Transmission Licensees'** obligations are defined in the **STC** and any relevant **TO Construction Agreement**.

System Telephony is an alternative tool used by **The Company** and **Relevant Transmission Licensee's** in instructing **Users** to control the **Total System**.

2. Introduction

The Grid Code requirements and the high level functionality for **Control Telephony** across Great Britain are described in CC.6.5.2 to CC.6.5.5 and ECC.6.5.2 to ECC.6.5.5, in addition to the requirements of CC.7.10 and ECC.7.10. This **Electrical Standard** describes in more detail the technical interfaces and support requirements for **Control Telephony** between **Users**, **The Company** and **Relevant Transmission Licensees**.

This **Electrical Standard** gives **Users** background and technical information regarding the **Control Telephony System** that **The Company** in co-ordination with **Relevant Transmission Licensees** provides at **Control Points** and **Control Centres**.

This **Electrical Standard** also allows **Users** to understand the requirements of the **Control Telephony System** should a **User** decide to integrate the provided **Control Telephony System** with its own telephony system.

This **Electrical Standard** only contains generic information for **Control Telephony**. There may be situations where additional obligations relating to **Control Telephony** or the **Control Telephony System** may be required on a site-specific basis, for example at **Grid Supply Points**. Such site-specific details for **Control Telephony** will be specified in the **Bilateral Agreement**.

For the purposes of this document, any reference to **The Company** also includes any person orparty nominated by **The Company** (which may include the co-ordination role provided by a **Relevant Transmission Licensee** under the **STC**) to fulfil its obligations described in this document.

3. Scope

This **Electrical Standard** applies to **The Company** (in co-ordination with the **Relevant Transmission Licensees** as provided for in **System Operating Code Transmission Owner Code** Procedure STCP 04-5 and to **Users** (in the **GB Synchronous Area** only), who are required to have **Control Telephony**. For the avoidance of doubt, it also applies to **Users** connected to **Offshore Transmission Systems** even if those **Offshore Transmission Systems** comprise **HVDC Systems**.

For the purposes of this **Electrical Standard**, **Users** include:

(a) **Generators** (other than those which only own and operate either **Embedded Medium Power Stations** who do not have a **BEGA** agreement with **The Company** or **Embedded Small Power Stations** who do not have a **BEGA agreement** with **The Company**);

(b) **Network Operators** ;

(c) **Non-Embedded Customers**;

(d) **DC Converter Stations** owners and **HVDC System Owners**; and

(e) **BM Participants** and **Externally Interconnected System Operators**.

The provisions of this **Electrical Standard**, in the case of **Network Operators**, apply to their **Control Centres**, and in the case of all other **Users** listed above, apply at the relevant **Control Points** or **Control Centres**.

The provisions of this **Electrical Standard**, in the case of **The Company** apply to the **ENCC**.

4. Definitions

In this document, any emboldened words are defined below, some of which are Grid Code terms.

Automatic Logging Devices	As defined in the Glossary and Definitions of the Grid Code.
Bilateral Agreement	As defined in the Glossary and Definitions of the Grid Code.
Bilateral Embedded Generation Agreement or **BEGA**	As defined in Section 11.3 (Definitions) of the Connection and Use of System Code (CUSC).
Bilateral Embedded Licence exemptable Large power station Agreement" or "BELLA"	As defined in Section 11.3 (Definitions) of the Connection and Use of System Code (CUSC).
BM Participant	As defined in the Glossary and Definitions of the Grid Code.
Control Calls	As defined in the Glossary and Definitions of the Grid Code.
Control Centre	As defined in the Glossary and Definitions of the Grid Code.

Control Engineer	As defined in the Glossary and Definitions of the Grid Code.
Control Phone	A conventional telephone handset which is connected to the **Control Telephony System** and which has a capability as defined in CC.6.5.5 or ECC.6.5.5 of the Grid Code.
Control Point	As defined in the Glossary and Definitions of the Grid Code.
Control Telephony	As defined in the Glossary and Definitions of the Grid Code.
Control Telephony System	The system provided by **Relevant Transmission Licensees** in co-ordination with **The Company** to carry **Control Telephony** communications.
CUSC Party	As defined in the Glossary and Definitions of the Grid Code.
DC Converter Stations	As defined in the Glossary and Definitions of the Grid Code.
Defence Service Provider	As defined in the Glossary and Definitions of the Grid Code.
Demand	As defined in the Glossary and Definitions of the Grid Code.
Disaster Recovery	As defined in section 8 of this document.
Distribution Restoration Zone Plan	As defined in the Glossary and Definitions of the Grid Code.
Electrical Standard	As defined in the Glossary and Definitions of the Grid Code.
Embedded	As defined in the Glossary and Definitions of the Grid Code.
Embedded Large Power Station	As defined in the Glossary and Definitions of the Grid Code.

Embedded Small Power Station	As defined in the Glossary and Definitions of the Grid Code.
Emergency Control Call	A **Control Call** initiated by dialling the emergency code. On encountering network congestion, an emergency call will automatically disconnect non-emergency calls. These calls are announced distinctively to the recipient.
ENCC	**The Company's** Electricity National Control Centre.
Externally Interconnected System Operator	As defined in the Glossary and Definitions of the Grid Code.
GB Synchronous Area	As defined in the Glossary and Definitions of the Grid Code.
Generator	As defined in the Glossary and Definitions of the Grid Code.
Grid Supply Point	As defined in the Glossary and Definitions of the Grid Code.
HVDC System	As defined in the Glossary and Definitions of the Grid Code.
HVDC System Owner	As defined in the Glossary and Definitions of the Grid Code.
Leased Line	A telecommunications circuit provided by a public telecommunications operator for the sole use of **Control Telephony**.
Local Joint Restoration Plan	As defined in the Glossary and Definitions of the Grid Code.
Mains Independence	In the event of loss of external electrical energy supplies, the capability to ensure that there shall be no loss of, or disruption to **Control Telephony** for at least the duration specified in section 11 of this **Electrical Standard**. To comply with this requirement an alternative power source is required that is

	independent of external electrical energy supplies and is automatically switched into service without manual intervention.
Network Operator	As defined in the Glossary and Definitions of the Grid Code.
MPLS	Multiprotocol Label Switching (a routing technique in telecommunications networks that directs data from one node to the next based on labels).
Non-Embedded Customer	As defined in the Glossary and Definitions of the Grid Code.
Operational Telephony System	A term used in the **STC** which has the same meaning as the **Control Telephony System**.
Pilot Cable	Privately owned telecommunications circuit provided on a dedicated cable within a site or between sites in close proximity to each other.
Plant	As defined in the Glossary and Definitions of the Grid Code.
Registered Capacity	As defined in the Glossary and Definitions of the Grid Code.
Relevant Transmission Licensee	As defined in the Glossary and Definitions of the Grid Code.
Responsible Engineer / Operator	As defined in the Glossary and Definitions of the Grid Code.
Restoration Contractor	As defined in the Glossary and Definitions of the Grid Code.
Routine Control Call	A **Control Call** with normal (i.e. non-emergency) status.
SLA	Service Level Agreement.
System Operator Transmission Owner Code or **STC**	As defined in the Glossary and Definitions of the Grid Code.
System Restoration	As defined in the Glossary and Definitions of the Grid Code.

System Telephony	As defined in the Glossary and Definitions of the Grid Code.
The Company	As defined in the Glossary and Definitions of the Grid Code.
TO Construction Agreement	As defined in Section J of the **System Operator Transmission Owner Code** or **STC**.
Top Up Restoration Contract	As defined in the Glossary and Definitions of the Grid Code.
Total System	As defined in the Glossary and Definitions of the Grid Code.
Transmission Network Control Centre or **TNCC**	A **Transmission Licensee's** Transmission Network Control Centre.
Transmission Licensee	As defined in the Glossary and Definitions of the Grid Code.
Transmission System	As defined in the Glossary and Definitions of the Grid Code.
Trunk Line	A telecommunications line to the **Control Telephony System** for the purpose of carrying telephone calls. A **Trunk Line** is provided over a **Mains Independent** communications bearer which may include a **Leased Line** or a **Pilot Cable** or other appropriate medium (eg private radio, microwave etc). For **BM Participants**, other than **Restoration Contractors**, with a total aggregated **Registered Capacity** or **Demand** capacity of less than 100MW an **MPLS** communications service may be used for the **Control Telephony System**.
User	As defined in the Glossary and Definitions of the Grid Code.
User Site	As defined in the Glossary and Definitions of the Grid Code.

5. Overview of Control Telephony Network

The **Control Telephony System** is a highly resilient private telephony network used to carry **Control Calls** for both the day-to-day management of the **GB System** and for emergency management. This extends to **System Restoration**

requirements where **The Company** contact with **Restoration Contractors** directly where required by a **Local Joint Restoration Plan**.

The entire **Control Telephony System** is resilient to a complete loss of mains electricity and will continue to operate normally following a mains power loss as required by Section 11. The **Control Telephony System** has no reliance on the public communications network which may suffer congestion during power blackouts or other events affecting the general public.

The Company in coordination with the **Relevant Transmission Licensee** is responsible for the installation and maintenance of the **Control Telephony System** (and **Control Phones** where required) unless otherwise stated in the **Bilateral Agreement** with the **User**.

6. Provision of Services at Control Points and Control Centres

Where **The Company** specifies that **Control Telephony** is required at a **Control Point** or **Control Centre**, the **Relevant Transmission Licensee** in co-ordination with **The Company** will normally provide a **Trunk Line** to the **Control Point** or **Control Centre** for the **User** to terminate at their own **Control Point** or **Control Centre** telephony system.

By agreement as an alternative to the above arrangement, the **Relevant Transmission Licensee** in co-ordination with **The Company** will provide one **Control Phone** which will be connected to form part of the **Control Telephony System** via a **Trunk Line**. In general, the **Trunk Line** equipment will be provided by the **Relevant Transmission Licensee** in co-ordination with **The Company** at the **Control Point** or **Control Centre**. The **Relevant Transmission Licensee** in co-ordination with **The Company** may also install a second **Control Phone** for **System Restoration**. This is described in further detail in section 10.

A combination of the above service provisions may also be employed.

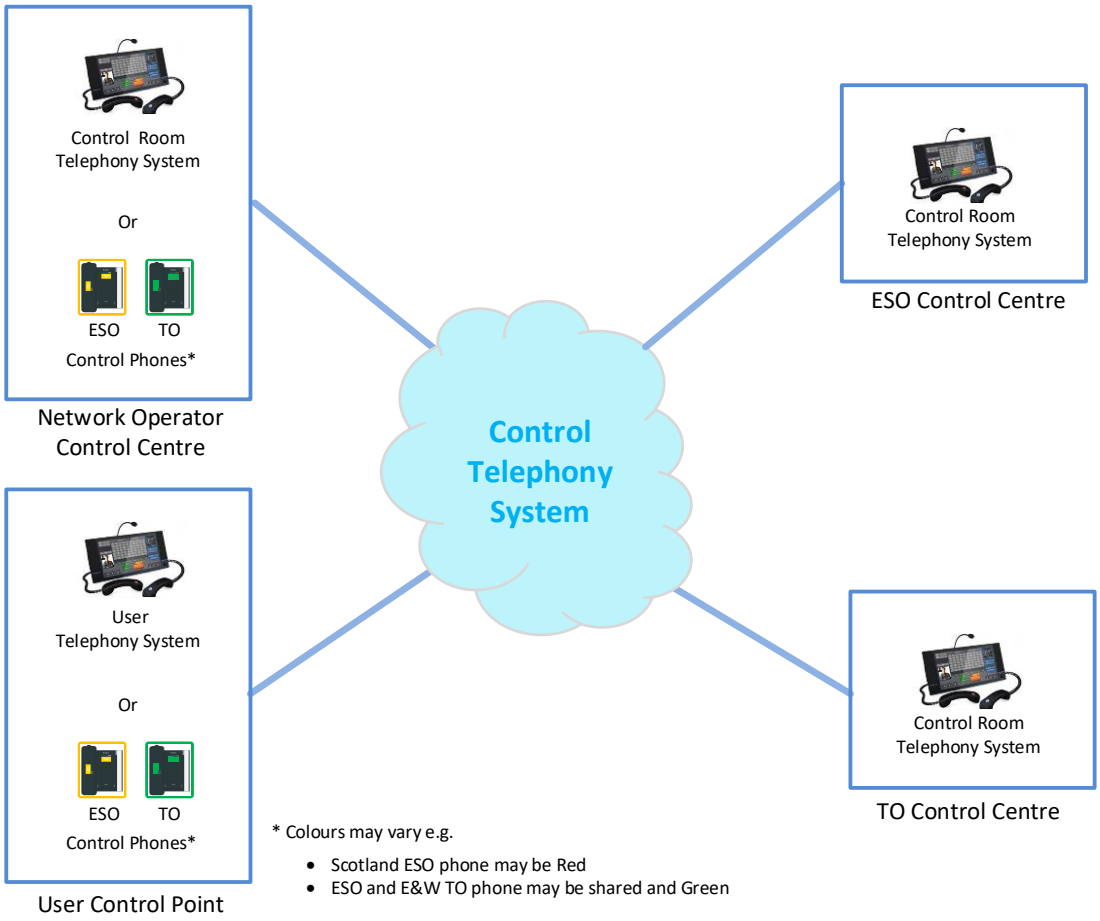

Figure 1 General Control Telephony Arrangements

The general arrangement is shown in Figure 1.

The **User** will be responsible for ensuring **Mains Independence** of the **Control Telephony** equipment at their site.

The Company in coordination with the **Relevant Transmission Licensee** will be responsible for installing the **Control Telephony System** to the **User's Control Point** or **Control Centre**. The **User** will be responsible for the internal site wiring from the **Control Telephony System** to the control room desk(s).

The Table in Appendix 1 lists the requirements for **CUSC Parties**, **Non-CUSC Parties** and **Restoration Contractors** in respect of their obligations in respect of 72 hour **Mains Independence**, staffed **Control Points** / **Control Centres** and staffing at an operational site such as a **Power Station**.

7. Presentation of Calls and making Routine and Emergency Control Calls at Control Points and Control Centres

At locations where the **Control Telephony System** is connected to a **Control Point** or **Control Centre** telephony system, that telephony system shall have pre-programmed facilities to allow rapid initiation of **Routine Control Calls** and **Emergency Control Calls** and shall present incoming calls from the **ENCC** and from the **Relevant Transmission Licensee's Control Centre** in a way that distinguishes them from other calls received.

At locations where a **Control Phone(s)** is provided it shall be installed in a prominent position at the **Control Point** suitable for use by operational staff. The **Control Phone** has pre-programmed settings to allow rapid dialling. This feature is provided for making **Routine Control Calls** and **Emergency Control Calls**. An incoming **Routine Control Call** is indicated by a continuous ringing signal.

In both the above cases, **Emergency Control Calls** automatically override network congestion by disconnecting lower priority calls and are presented with a distinctive ringing signal at **Control Points** and **Control Centres**.

On receipt of an incoming **Control Call**, operational staff must be made aware that the **ENCC** or the **Relevant Transmission Licensee's Control Centre** is making either a **Routine Control Call** or **Emergency Control Call** to the **User**. Incoming **Emergency Control Calls** from the **ENCC** or the **Relevant Transmission Licensee's Control Centre** shall be presented in a way that distinguishes them from **Routine Control Calls** and gives them the appropriate priority. Facilities must be provided to allow for the rapid initiation of **Routine** and **Emergency Control Calls** to the **ENCC** or the **Relevant Transmission Licensee's Control Centre**.

If incoming calls are queued by the **User's** telephony system, **Control Calls** must be given priority over other calls at the **User's** site, as if they were presented on a separate **Control Phone**.

If calls from separate desks at the **User's Control Point** or **Control Centre** are required to be identified uniquely at the **ENCC** or the **Relevant Transmission Licensee**s **Control Centre** e.g. if a **Network Operator** manages more than one electricity licence area, then separate numbers will be allocated by **The Company** for each area.

8. Control Telephony Disaster Recovery Arrangements for Network Operator Control Centres

Network Operators must have arrangements in place to transfer **Control Telephony** calls from their main **Control Centre** to their contingency **Control Centre** when the contingency site is operational. For each **Network Operator**, actual provision of services and changeover arrangements may require separate technical and operational agreement between **The Company**, the **Relevant Transmission Licensee** and the **Network Operator**.

9. Costs associated with the Control Telephony Service

Relevant Transmission Licensees in co-ordination with **The Company** shall be responsible for the service up-to the **Control Telephony** interface on the **User's Control Point** or **Control Centre** telephony system.

Where **The Company** in co-ordination with the **Relevant Transmission Licensee** provides the **Control Phone(s)** the **Relevant Transmission Licensee** in co-ordination with **The Company** is responsible for providing and supporting the **Control Telephony** service at **Control Points** and **Control Centres**.

Where the **User** requires existing **Control Telephony System** equipment to be moved to an alternative location (e.g. due to site relocation) the **User** will be expected to pay all reasonable costs incurred by the **Relevant Transmission Licensee** and/or **The Company** to move the equipment and maintain the power resilience required for the extended circuit.

Where a **User** chooses to locate its **Control Point** or **Control Centre** outside GB, **The Company** will charge the **User** for any overseas element (including installation and ongoing maintenance) of the **Control Telephony System** which would be pursuant to the terms of the **Bilateral Agreement**.

10. System Restoration Assured Service

Where a **Restoration Contractor** is party to a **Local Joint Restoration Plan**, the **Relevant Transmission Licensee** in co-ordination with **The Company** will provide sufficient capacity (and **Control Phones** if appropriate) to enable the **Local Joint Restoration Plan** to be implemented without encountering congestion.

In the case where **The Company** in coordination with the **Relevant Transmission Licensee** has provided a **Control Phone** and where a **Restoration Contractor** is required to communicate with a **Network Operator** and the **ENCC**, two separate **Control Phones** shall be installed at the **Restoration Contractors Control Point**.

11. Technical Standards and Service Levels

The following service levels apply to the **Control Telephony System** including those parts of the **Control Telephone System** located at **Users' Control Points, Network Operators Control Centres** and via **Users'** telephony systems. The **User** is responsible for providing site access for **The Company** and the **Relevant Transmission Licensee** so they can meet the **SLAs** quoted.

Description	Standard/SLA
Control Telephony System	Equipment: • **Control Telephony System** equipment • **Trunk Line**

	At **Restoration Contractors' Control Points**: 5hr fix, 24 hrs/day, 365/6 days/yr At the **Control Points** of **Users** who are not **Restoration Contractors**: 5hr fix 8am-6pm normal business days At **Network Operators' Control Centres**: 5hr fix, 24 hrs/day, 365/6 days/yr
Mains Independence duration	**Network Operators' Control Centres** shall comply with the endurance timescales of CC7.10 or ECC7.10 as appropriate. **Control Centres** of other **Users** shall comply with the endurance timescales of CC7.10 or ECC7.10 as appropriate and the requirements of CC.7.9 or ECC.7.9. All **Control Points** shall comply with the endurance timescales of CC.7.10 or ECC.7.10 as appropriate and the requirements of CC.7.9 and ECC.7.9.

Appendix 1

The table below details the obligations on different types of **User** (in terms of whether they are a **CUSC Party**, **Non-CUSC Party** or **Restoration Contractor** and the obligations they have to meet. This table should also be read in conjunction with the Communications Standard which is available from the following link.

https://www.nationalgrideso.com/document/33331/download

	Communication from **The Company** to **User's Control Point** or **Control Centre**	**Control Point** or **Control Centre** Staffing	Operational Site Staffing (eg at a **Power Station**)
CUSC Party (whether or not **Embedded**) without an **Anchor Restoration Contract** or **Top Up Restoration Contract**	72 hours resilience (**Control Telephony**)	24x7 (unless relieved under the **Bilateral Agreement** through CC/ECC 7.9)	Not specified
CUSC Party (whether or not **Embedded**) with an **Anchor Restoration Contract** or **Top Up Restoration Contract**	72 hours resilience (**Control Telephony**)	24x7	Contractual
Non-CUSC Embedded party with an **Anchor Restoration Contract** or **Top Up Restoration Contract**	72 hours resilience (**Control Telephony**)	24x7	Contractual
CUSC Parties who are not active in the **Balancing Mechanism** (BELLA Agreements) and without an **Anchor Restoration Contract** or **Top Up**	**System Telephony** unless otherwise specified in the **Bilateral Agreement**	Staffed between 08:00 – 18:00 unless otherwise specified in the **Bilateral Agreement**	Only required between 08:00 – 18:00 unless otherwise specified in the **Bilateral Agreement**

	Communication from **The Company** to **User's Control Point** or **Control Centre**	**Control Point** or **Control Centre** Staffing	Operational Site Staffing (eg at a **Power Station**)
Restoration Contract			
Non-CUSC Embedded party without an **Anchor Restoration Contract** or **Top Up Restoration Contract**	No requirement	No requirement	No requirement