**OPERATING CODE NO. 6B**

**(OC6B)**

**EMBEDDED GENERATION CONTROL**

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| OC6B.1 | | INTRODUCTION | |
| OC6B.1.1 | | **Operating Code No.6B** ("**OC6B**") is concerned with the provisions to be made by **Network**  **Operators** to reduce the **Active Power** output from **Embedded Power Stations;**  a) at times when there is a large amount of **Active Power** on the **System** from generation plant that has low (or no) inertia, to secure against the largest loss of **Load**, as determined under BC1.5.5; and  b) in emergency circumstances including in the event of breakdown or operating problems (such as in respect of **System Frequency**, **System** voltage levels or **System** thermal overloads) on any part of the **National Electricity Transmission System**. | |
| OC6B.1.2 | | **OC6B** deals with **Embedded Generation Control** instructed by **The Company**. | |
|  | | The term **"Embedded Generation Control**" is used to describe a reduction in the **Active**  **Power** output of **Embedded Power Stations**. **Embedded Power Stations** that may be subject to **Embedded Generation Control** include **Embedded Power Stations** connected to a **Network Operator’s System** and whose owners or operators are not **BM Participants**. | |
| OC6B.1.3 | | The procedure set out in **OC6B** includes a system of warnings to give advance notice, where possible, of **Embedded Generation Control** that may be required by **The Company** under this **OC6B**. | |
| OC6B.1.4 | | Data relating to **Embedded Generation Control** should include details relating to **Active Power** measured in Megawatts (MW). | |
| OC6B.1.5 | | The Electricity Supply Emergency Code, as reviewed and published from time to time by the appropriate government department for energy emergencies, provides that in certain circumstances consumers are given a certain degree of "protection" when rota disconnections are implemented pursuant to a direction under the Energy Act 1976. Where relevant in terms of the incidental disconnection of demand as part of **Embedded Generation Control**, no such protection can be given in relation to **Embedded Generation Control** under the **Grid Code**. | |
| OC6B.2 | | OBJECTIVE | |
| OC6B.2.1 | | The overall objective of **OC6B** is concerned with the provisions to be made by **Network Operators** to reduce the **Active Power** output from **Embedded Power Stations** that will either avoid or relieve operational issues, in whole or in part, and thereby to enable **The Company** to instruct **Embedded Generation Control** in a manner that does not unduly discriminate against, or unduly prefer, any one or any group of **Generators** or **Suppliers** or **Network Operators**. | |
| OC6B.3 | | SCOPE | |
| OC6B.3.1 | | **OC6B** applies to **The Company** and to **Users** which in **OC6B** means:   1. **Generators**; and 2. **Network Operators**. | |
| OC6B.3.2 | | Explanation | |
| OC6B.3.2.1 | | 1. In all situations envisaged in **OC6B**, **Embedded Generation** **Control** will be implemented by one or more **Network Operators**; and 2. **Embedded Generation Control** in all situations relates to the physical organisation of the **Total System**, and not to any contractual arrangements that may exist. | |
| OC6B.3.2.2 | | Where **Embedded Generation Control** instructions are issued by **The Company** these may: | |
|  | | 1. require the **Network Operator** to achieve a reduction in **Active Power** output at specified **Embedded Power Station(s)**; 2. be for the **Network Operator** to achieve a reduction in **Active Power** output of **Embedded Power Stations**, supplied via one or more specified   **Grid Supply Point(s)**, of a specified value; or   1. be for the **Network Operator** to achieve a reduction in **Active Power** output of **Embedded Power Stations**, supplied via one or more specified   **Grid Supply Point(s)**, of a specified proportion of the aggregate **Active Power** output compared to the **Active Power** output before such an instruction was issued.  In any case, reasonable endeavours shall be employed by the **Network Operator** to ensure that the reduction in **Active Power** output specified in the instruction is achieved, considering also the principles relating to prioritisation set out in OC6B.5.1 where appropriate. Even when instructed to do so by **The Company**, the **Network Operator** will not be required to reduce the **Active Power** output from one or more **Embedded Power Stations** by more than the **Active Power** output from those **Embedded Power Stations** supplied via the specified **Grid Supply Point(s**). | |
| OC6B.3.2.3 | | **Network Operators** may where necessary (for example where timescales do not allow otherwise) implement **Embedded Generation Control** instructions by **Embedded Generation De-energisation** based on **Registered Capacity** so long as reasonable endeavours are employed by the **Network Operator** to ensure that the reduction in **Active Power** output specified in the instruction from **The Company** is achieved. | |
| OC6B.3.2.4 | | An instruction from **The Company** to the **Network Operator** will be given to allow the **Network Operator** to arrange with **Embedded Power Stations** subject to **Embedded Generation Control** to resume normal operation. Such arrangements shall not commence until such an instruction has been received. | |
| OC6B.3.2.5 | | The existence of any other arrangements for the management of **Embedded Power** | |

**Stations** by a **Network Operator** will not relieve a **Network Operator** from the **Embedded Generation Control** provisions of this **OC6B**.

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| OC6B.4 | PROCEDURE FOR THE IMPLEMENTATION OF EMBEDDED GENERATION CONTROL ON THE INSTRUCTIONS OF THE COMPANY |
| OC6B.4.1 | A **National Electricity Transmission System Warning - High Risk of Embedded Generation Reduction** will, where possible, be issued by **The Company**, as more particularly set out in OC7.4.8 and BC1.5.5when **The Company** anticipates that it will or may issue **Embedded Generation Control** instruction(s). |
| OC6B.4.2 | When **The Company** anticipates that it will or may issue **Embedded Generation Control** instruction(s) within the following 30 minutes, **The Company** will, where possible, issue a **National Electricity Transmission System Warning ~~-~~ Embedded Generation Control** **Imminent** in accordance with OC7.4.8.2 and OC7.4.8.11. |
| OC6B.4.3 | 1. Whether a **National Electricity Transmission System Warning - High Risk of**   **Embedded Generation Reduction** or **National Electricity Transmission System Warning – Embedded Generation Control Imminent** has been issued or not, each **Network Operator** will abide by the instructions of **The Company** and will implement the instructions received in the timescales specified and without delay.   1. Unless specified otherwise, **Embedded Generation Control** instructions shall be fulfilled within 30 minutes of an instruction being received from **The Company**. |
| OC6B.4.4 | Once an **Embedded Generation Control** instruction has been implemented by a **Network Operator**, the **Network Operator** may interchange the **Embedded Generators** who have been subject to **Embedded Generation Control** provided that the percentage or volume of **Active Power** reduction achieved at all times within the **Network Operator's System** does not change. |
| OC6B.4.5 | An instruction from **The Company** to the **Network Operator** will be given to allow the **Network Operator** to arrange with a **Generator** owning or operating an **Embedded Power Stations** subject to **Embedded Generation Control** to resume normal operation. Such arrangements shall not commence until such an instruction has been received. |
| OC6B.4.6 | Where **Embedded Generation Control** to manage events within the scope of **OC6B** is envisaged by **The Company** to be a prolonged requirement, **The Company** will notify the **Network Operator** of the expected duration. |
| OC6B.4.7 | Each **Network Operator** will notify **The Company** in writing that it has complied with **The Company's** instructions under **OC6B.5**, within five minutes of so doing, together with an estimation of the **Active Power** output reduction achieved, in MWs, by the **Embedded Generation Control**. |
| OC6B.4.8 | Each **Network Operator** will supply to **The Company** a revised estimate of the **Active Power** output reduction achieved, in MW, by the use of **Embedded Generation Control** within 30 minutes of complying with the instruction. |
| OC6B.5 | PRIORITIES FOR IMPLEMENTATION OF EMBEDDED GENERATION CONTROL INSTRUCTIONS |
| OC6B.5.1 | The implementation of an **Embedded Generation Control** instruction is at the reasonable discretion of each **Network Operator** to whom an instruction is given by **The Company**.In implementing an instruction and determining the order in which **Embedded Power Stations** are affected by it, it is expected that a **Network Operator** would respect the priority order set out in the table below unless it could be reasonably expected to be aware of other issues that would influence the implementation order including: |
|  | a) whether the **Embedded Generation Control** has been issued following a **National Electricity Transmission System Warning** – **System NRAPM** or a **National Electricity Transmission System Warning** – **Localised NRAPM**, and therefore any specific local circumstances that it is a requirement to address; |
|  | b) the effectiveness of **Embedded Generation Control** actions to address the issues to be resolved;  c) Interactions with other network considerations such as the participation of **Embedded Power Stations** in Active Network Management (ANM) or other automatic switching schemes, or in the provision of other **Ancillary Services**; and  d) any other wider system issues and the potential consequences for **Users**, including environmental and safety concerns, and where applicable taking account of the incidence of such instructions.  All implementation decisions should be reasonable and based on the information available to the **Network Operator** at the time taking into account the leadtime available in the instruction issued by **The Company** |

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| ORDER | CATEGORY OF GENERATION | COMMENT |
| 1 | Non-synchronous generation | Non-synchronous plant typically does not contribute towards system inertia hence is higher up the list due to the need to maintain system inertia, particularly in the scenario applicable to **Embedded Generation Control** where a very low demand situation coincides with high availability of non-synchronous generation.  In the event that any alternatives to system inertia are available this should also be taken into account. |
| 2 | Synchronous generators without any associated demand | Lower down the list due to the need to maintain system inertia, particularly in a very low demand situation. |
| 3 | Generation with associated demand | For example, CHP installations, waste management facilities, and other industrial facilities with substantial on-site demand. |
| 4 | Generation associated with critical national infrastructure sites | Never envisaged to be selected. |

# OC6B.6 OPERATION OF THE BALANCING MECHANISM DURING EMBEDDED GENERATION CONTROL

Instructions issued by **The Company** to carry out **Embedded Generation Control** will constitute **Emergency Instructions** in accordance with BC2.9 and it may be necessary to depart from normal **Balancing Mechanism** operation in accordance with BC2 in issuing **Bid-Offer Acceptances**. **The Company** will inform affected **BM Participants** in accordance with the provisions of **OC7**.