MODIFICATION RECOMMENDATION FORM

RECOMMENDATION TO CER BY EIRGRID OF MODIFICATION TO GRID CODE.

ABSTRACT / TITLE OF MODIFICATION	**OC5 Demand Control**
MODIFICATION NUMBER	**MPID 204**
RECOMMENDED AT GCRP MEETING NUMBER	**27**
LIST OF GRID CODE SECTION(S) AFFECTED BY PROPOSED MODIFICATION:	**OC5.5.2** **OC5.5.3** **OC5.7.3**
CURRENT GRID CODE VERSION :	**3.5**

MODIFICATION DESCRIPTION Overview

SUMMARY DESCRIPTION OF:

a) THE REASON FOR THE RECOMMENDED MODIFICATION

b) HISTORY OF PROGRESSION THROUGH GCRPS, WORKING GROUP AND/OR CONSULTATION

c) SUMMARY NOTE OF ANY OBJECTIONS TO THE RECOMMENDED CHANGE FROM GCRP MEMBERS OR CONSULTATION RESPONSES

d) OUTCOME OF ANY GCRP MEETING ACTIONS RELATING TO THE RECOMMENDED MODIFICATION

OC5 states the automatic low frequency demand disconnection and automatic low voltage demand disconnection review are due to take place annually. These review periods are driven in part by the number of occurrences of operation. In that past, U-F relays would have operated up to 4 times per year. As the system has got bigger they operate much more rarely, the last significant operation was in 2006. Furthermore a full review process takes eighteen months to complete from beginning to end so an annual review is impractical.

As a result, the proposed changes to OC5 are to reflect realistic target for the review from annually to every three years.

The DSO concurs with the proposal (confirmation email from Derek Hynes and Cathal Hickey (31/01/2011)).

This modification was recommended for approval by the Grid Code Review Panel on the 23 Feb 2011 subject to one minor change to the text. This text change has been carried out by the TSO.

It is recommended to delete the text highlighted in red strikethrough and insert the text highlighted in blue.

OC5.1 INTRODUCTION

OC5.1.1 OC5 is concerned with the provisions to be made by the **DSO** and, by the **TSO** in relation to **Demand Customers**, to permit the reduction of **Demand** in the event of available **Generating Plant** and transfers from **External Interconnections** being insufficient to meet **Demand**, or in the event of breakdown or operating problems such as in respect of **System Frequency**, **Voltage** levels or **Thermal Overloads** on any part of the **Transmission System**. The **Demand Control** arrangements may also apply where there are insufficient **Generating Plant** or transfers to meet **Demand** in all or any part of the **Other Transmission System** and/or in the event of problems on the **Other Transmission System** in circumstances where the **TSO** is able to assist the **Other TSO** and where doing so would not have a detrimental effect on the security of the **Transmission System**.

	OC5.1.2	OC5 deals with the following: a) **Customer Demand** reduction instructed by the **TSO;** b) **Customer Demand** reconnection instructed by the **TSO**; c) Automatic low **Frequency Demand Disconnection**; d) Automatic low **Voltage Demand Disconnection**; and e) **Automatic Frequency Restoration**. The term "**Demand Control**" is used to describe any or all of these methods of achieving **Demand** reduction, or in the case of (b) and (e), a **Demand** increase.
	OC5.1.3	The procedures set out in OC5 includes a system of **Alerts**, issued to **Users**, to give advance notice of **Demand Control** that may be required by the **TSO** under this **OC5**.
	OC5.1.4	Data relating to **Demand Control** shall include details relating to MW.
	OC5.1.5	**Demand Control** shall not, so far as is possible, be exercised in respect of **Priority Customers**. OC5, therefore, applies subject to this exclusion.
	OC5.1.6	**Demand Control** shall be exercised equitably in respect of **Customers** connected to the **Distribution System** and **Demand Customers**.

OC5.1.7 Explanation

OC5.1.7.1 **Demand Control** is exercised through operation of the **Distribution System** or of the **Transmission System** (in the case of **Demand Customers**). **Demand Control** in relates to the physical organisation of the total **System**, and not to any contractual arrangements that may exist. Where **Demand Control** is needed in a particular area, the **TSO** would not know which **Supplier** to contact and (even if it were to) the resulting **Demand Control** implemented, because of the diversity of contracts, may not produce the required result.

OC5.1.7.2 Therefore, in most instances of **Demand Control**, **Demand Control** will be exercisable by the **DSO**. **Suppliers** should note, however, that, although implementation of **Demand Control** in respect of their **Customers** may not be exercisable by them, their **Customers** may be affected by **Demand Control**.

OC5.2 OBJECTIVE

OC5.2.1 The overall objective of OC5 is to require the provision of facilities by **DSO** and **Demand Customers** to enable the **TSO** to achieve the reduction in **Demand** that will either avoid or relieve operating problems on the **Transmission System**, and subject to the circumstances set out in OC5.1.1, the **Other Transmission System**, in whole or in part, and thereby to enable the **TSO** to instruct **Demand Control** in a manner that does not unduly discriminate against, or unduly prefer, any one or any group of **Users**. It is also to ensure that the **TSO** is notified of any **Demand Control** utilised by **Users** other than following an instruction from the **TSO**.

OC5.3 SCOPE

OC5 applies to the **TSO** and to all **Users**, which term in this OC5 means:

(a) The **Distribution System Operator;**
(b) **Suppliers**; and
(c) **Demand Customers**.

OC5.4 PROCEDURE FOR THE IMPLEMENTATION OF DEMAND CONTROL ON THE INSTRUCTIONS OF THE TSO

OC5.4.1 Where a shortage of generation capacity or other reason for the exercising of **Demand Control** is foreseen, the **TSO** will alert the **DSO** by means of a **Demand Control Alert**.

OC5.4.2 Where reasonable notice of the need for **Demand Control** is available, the **TSO** will initiate the **Rota Load Shedding Plan** and **Demand Control** will be implemented in accordance with the **Rota Load Shedding Plan**. The **TSO** and the **DSO** will each be responsible for maintaining procedures and will co-operate with each other so as to provide for the implementation of **Demand Control** in accordance with the **Rota Load Shedding Plan**.

	OC5.4.3	Where the requirement for **Demand Control** arises at short notice, it may be necessary for practical reasons to implement **Demand Control** other than in accordance with the **Rota Load Shedding Plan**. The **TSO** and the **DSO** will each maintain procedures (and will co-operate in forming such procedures) to provide that **Demand Control** can be exercised rapidly when required, in accordance with the **TSO's** instructions.
	OC5.4.4	In the event of **Demand Control** being exercised other than in accordance with the **Rota Load Shedding Plan** (due to reasons of short notice or otherwise), and if the **Demand Control** is expected to be sustained, then the **TSO** will arrange for the **Rota Load Shedding Plan** to be implemented as soon as practicable. The **TSO** may instruct certain modifications in the application of **the Rota Load Shedding Plan** to provide for those **Customers** which have been subject to shedding in the initial phase prior to the initiation of **Planned Rota Load Shedding**.
	OC5.4.5	The **Rota Load Shedding Plan** provides for disconnection and reconnection of defined blocks of demand on instruction from the **TSO**, In this way the **TSO** can instruct the necessary level of disconnection (and reconnection) required by the circumstances at the time. The **DSO** shall comply with instructions issued by the **TSO** in accordance with the **Rota Load Shedding Plan**, and in particular will not reconnect **Demand** other than in accordance with the **TSO's** instructions.

	OC5.4.6	The **Rota Load Shedding Plan** shall also provide for the issue of information to **Customers** through the media of the expected duration of **Demand Control**, and which blocks of **Customers** are at most risk of disconnection at which times.
	OC5.4.7	Both the **TSO** and the **DSO** will maintain records of the disconnection and reconnection of customers exercised under the **Rota Load Shedding Plan**, (and, for the avoidance of doubt, of any **Demand Control** exercised in accordance with OC5.4.3**).**
	OC5.5	**AUTOMATIC LOW FREQUENCY DEMAND DISCONNECTION**
	OC5.5.1	The **DSO** shall make arrangements that will enable automatic low **Frequency Disconnection** of a percentage of its total peak **Customer Demand** (based on **Annual SLR Conditions**) as specified by the **TSO**, in order to seek to limit the consequences of a major loss of **Generation** or an event on the total system which leaves part of the total system with a **Generation** deficit, provided that, so far as possible, **Demand** of **Generation Units** which is required to enable the **Generation Units** to start-up shall not be subject to automatic low **Frequency Disconnection**. The **TSO** retains the right to specify the **Frequency** settings on percentages of **Demand** subject to automatic low **Frequency Disconnection**.

	OC5.5.2	The **Demand** of the **DSO** which is subject to automatic low **Frequency Disconnection** will be split into discrete MW blocks. The number, location, size and the associated low **Frequency** settings of these blocks, will be as specified by the **TSO** by week 39 in ~~each~~ every three calendar years following discussion with the **DSO** and will be reviewed ~~annually~~ every three years by the **TSO**. The distribution of the blocks will be such as to give reasonably uniform **Disconnection** within the **Distribution System** across all **Grid Supply Points**.
	OC5.5.3	**Demand Customers** shall provide automatic low **Frequency Disconnection**, which will be split into discrete blocks. The number and size of blocks and the associated low **Frequency** settings will be as specified by the **TSO** by week 39 ~~each~~ every three calendar years following discussion with the **Demand Customers**. In the case of a **User**, it is not necessary for it to provide automatic low **Frequency Disconnection** under OC5.5 if it is providing low **Frequency Disconnection** at a higher level of **Frequency** as an **Ancillary Service**.
	OC5.6	**AUTOMATIC FREQUENCY RESTORATION**
	OC5.6.1	The **DSO** will make arrangements that will enable automatic **Frequency** restoration of **Demand** that is subject to automatic low **Frequency Demand Disconnection**. The **TSO** retain the right to specify the **Frequency** settings on blocks of **Demand** subject to automatic **Frequency** restoration.
	OC5.6.2	Once an automatic low **Frequency Demand Disconnection** has taken place, the **DSO** shall not reconnect **Customers** until instructed by the **TSO**, or otherwise in accordance with agreed procedures.

		Where conditions are such that, following automatic low **Frequency Demand Disconnection**, it is not possible to restore a large proportion of the total **Demand** so **Disconnected** within a reasonable period of time, the **TSO** may instruct the **DSO** to implement additional **Demand Disconnection** manually, and restore an equivalent amount of the **Demand** that had been **Disconnected** automatically. The purpose of such action is to ensure that a subsequent fall in **Frequency** will again be contained by the operation of automatic low **Frequency Demand Disconnection**. If the requirement for **Demand Control** is expected to continue for a sustained period of time, then the **TSO** will initiate the implementation of the **Rota Load Shedding Plan** in accordance with OC5.4.
	OC5.6.4	Once the **Frequency** has recovered, the **DSO** will abide by the instructions of the **TSO** with regard to reconnection, and/or shall implement agreed procedures for **Demand** reconnection, without undue delay.

	OC5.7 AUTOMATIC LOW VOLTAGE DEMAND DISCONNECTION OC5.7.1 The **TSO** may from time to time determine that there is a requirement for automatic low **Voltage Disconnection** of **Customer Demand**, in order to limit the consequences of the loss of a **Generation Unit(s)**, or an event on the **Total System**, which otherwise would result in part of the **Total System** with **Voltages** outside the levels specified in CC.8.3. OC5.7.2 The **TSO** may exercise the required **Automatic Low Voltage Demand Disconnection** (**ALVDD**) at the level of the **Transmission System**. However, depending on the extent of **ALVDD** required, and in order not to disconnect more **Customer Demand** than reasonably required in response to a specific incident or set or circumstances, it may be preferable that **ALVDD** is carried out at the level of the **Distribution System**. OC5.7.3 On request by the **TSO**, the **DSO** will co-operate with the **TSO** as to the design and implementation of **ALVDD** at locations on the **Distribution System**, where the requirement is indicated in accordance with OC5.7.2. The **TSO** will retain full control over the enabling/disabling of the **ALVDD**, and the **Voltage** settings at which **ALVDD** will be initiated in each circumstance. In general, the settings will be specified by the **TSO** by week 39 in ~~each~~ every three calendar years following discussion with the **DSO**, but the specification of settings may be altered by the **TSO** at other times to address specific circumstances pertaining at the time. The **DSO** shall respond to any change in specification by altering the settings without undue delay.
IMPLICATION OF NOT IMPLEMENTING THE MODIFICATION	Grid Code does not reflect what is currently being practised.