

Change proposal:	<b>Grid Code C/12: Safety Management of Three Position GIS Earth Switches</b>		
Decision:	The Authority <sup>1</sup> directs that the proposed change to the Grid Code <sup>2</sup> be made		
Target audience:	National Grid Electricity Transmission PLC (NGET), Grid Code users and other interested parties		
Date of publication:	23 October 2012	Implementation Date:	6 November 2012

## Background to the change proposal

The procedures for ensuring that work is carried out safely on the National Electricity Transmission System (NETS) and/or a user's system which is connected to the NETS are set out in Operating Code (OC) 8 of the Grid Code. The procedures specify the safety precautions that must be undertaken when work is carried out and establish the roles and responsibilities of the Requesting and Implementing Safety Coordinators for this work. OC8A sets out the safety coordination procedures applicable to the England and Wales Transmission System and to the systems of England and Wales transmission users. OC8B sets out these procedures for Scottish Transmission Systems and Scottish users' systems.

OC8A.5 sets out the safety precautions that apply when work takes place across a control boundary on High Voltage (HV) apparatus (where the transmission system and user's system are connected). OC8A.5 requires initially isolating the system to be worked on and then earthing<sup>3</sup> the system. This process of Isolation and Earthing requires that Points of Isolation are established before earthing commences. It prevents the possible earthing of another user's system through an isolator that could close or become closed.

The equipment used to undertake Isolation and Earthing (switchgear) may consist of two separate mechanisms, one for each activity, and Points of Isolation would be established before earthing takes place. However, certain types of switchgear, known as Three Position Gas Insulated Switchgear (GIS) Isolators and Earth Switches, are designed to combine Isolation and Earthing through a single mechanism. One consequence is that Isolation and Earthing may take place in a single operation. The designs of Three Position GIS Isolators and Earth Switches do not allow for inadvertent earthing of another user's system. Therefore, earthing across a control boundary can be carried out in a safe and controlled manner before establishing Points of Isolation.

A recent review of National Grid Electricity Transmission (NGET)'s Safety Rules<sup>4</sup> and National Safety Instructions resulted in a change to permit NGET's safety coordinators to instruct the closing of switchgear to the earth position before Points of Isolation are established. This change recognises that this should be an additional option where Three Position GIS Isolators and Earth Switches are used when work takes place on the England and Wales (E&W) Transmission System. However, the change to the Safety Rules does not allow all users to undertake this safety activity where a control boundary exists and safety coordination is to be managed between the user and NGET.

<sup>1</sup> The terms 'the Authority', 'Ofgem' and 'we' are used interchangeably in this document. Ofgem is the Office of the Gas and Electricity Markets Authority.

<sup>2</sup> This document is notice of the reasons for this decision as required by section 49A of the Electricity Act 1989.

<sup>3</sup> A definition of 'Earthing' is provided in the Operating Code, for example, in OC8A.1.6.2(4).

<sup>4</sup> The latest version of the Safety Rules (April 2012) are available on the National Grid website:

<http://www.nationalgrid.com/uk/Electricity/Safety/SR/>

NGET proposed a change to OC8 in order to reflect in the Grid Code the additional option set out in the revised Safety Rules when Three Position GIS Isolators and Earth Switches are used.

### **The change proposal**

NGET raised change proposal C/12 in March 2012. The proposal seeks to amend the Grid Code (specifically OC8A.5.3) to provide for the additional option for safety coordinators to earth their circuits before Points of Isolation are established, where work is taking place across a control boundary and Three Position GIS Isolators and Earth Switches are in use. In NGET's view, this is a procedural change and does not amend the position for other types of switchgear which will still require that Points of Isolation are established prior to earthing.

The Grid Code Review Panel (GCRP) agreed that the proposal should proceed to industry consultation and a consultation was issued in June 2012 (closing in July 2012). Three consultation responses were received, all supporting the proposal. Following comments in the responses that the change should also extend to the safety procedures applicable to work on the Scottish Transmission Systems, NGET decided to extend the scope of C/12 to include OC8B (specifically OC8B.5.3).

### **NGET's recommendation**

NGET supports the change proposal as better facilitating Applicable Grid Code Objectives (i) and (iii). In its view, providing the additional option in the OC8 safety coordination rules when Three Position GIS Isolators and Earth Switches are in use during safety work removes the need to request additional specifications for this switchgear type. It considers that this approach permits more efficient operation of the transmission system. It also considers that it promotes greater security and efficiency in the operation of the transmission system. NGET's recommendation is set out in full in the final Report.<sup>5</sup>

### **The Authority's decision**

We have considered the change proposal and NGET's final Report submitted on 18 September 2012. We have also considered the responses to NGET's consultation on the change proposal which are included in the final Report. We have concluded that:

1. implementation of the change proposal will better facilitate the achievement of the objectives of the Grid Code<sup>6</sup>; and
2. approving the change is consistent with our principal objective and statutory duties<sup>7</sup>.

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<sup>5</sup> Grid Code proposals, final reports and representations can be viewed on NGET's website at:

<http://www.nationalgrid.com/uk/Electricity/Codes/gridcode/consultationpapers/>

<sup>6</sup> As set out in Standard Condition C14(1)(b) of NGET's Transmission Licence, see: [http://epr.ofgem.gov.uk/document\\_fetch.php?documentid=14343](http://epr.ofgem.gov.uk/document_fetch.php?documentid=14343)

<sup>7</sup> The Authority's statutory duties are wider than matters which NGET must take into consideration and are detailed mainly in the Electricity Act 1989 as amended.

## **Reasons for the Authority's decision**

In our view, the change proposal better facilitates both Applicable Grid Code Objectives (i) and (iii) and is neutral when assessed against the other Objectives.

*Grid Code Objective (i) 'to permit the development, maintenance and operation of an efficient, coordinated and economical system for the transmission of electricity'*

We agree that the change proposal is an improvement on the current Grid Code requirements on safety precautions where work is carried out across control boundaries involving different users' systems. The proposed solution recognises that there may be different types of switchgear used in safety work and that each type of equipment places its own requirements on safety coordination due to its design.

The use of Three Position GIS Isolators and Earth Switches offers users and NGET a different option when undertaking safety work on the Transmission System and on connected users' systems. When this switchgear type is used, the requirement under the Operating Code to establish Points of Isolation before earthing may create inefficiencies when undertaking safety work. Additional requirements would be placed on this type of switchgear that does not apply to other types in use. This could lead to less coordinated and less efficient operation of the Transmission System overall.

We agree that providing an additional option that would apply to Three Position GIS Isolators and Earth Switches (where they are in use) does not affect the use of other switchgear equipment. This equipment would still need to comply with the NGET Safety Rules and with the Operating Code. We therefore support the increased flexibility that the proposed solution provides to safety coordination procedures.

We also agree that the scope of the proposal should extend to include safety works on the Scottish Transmission Systems to ensure uniform and coordinated application of the solution across the NETS. This approach should avoid potentially inefficient regional differences developing regarding safety coordination practice.

For these reasons, we agree that change proposal C/12 better facilitates Applicable Grid Code Objective (i).

*Grid Code Objective (iii) 'to promote the security and efficiency of the electricity generation, transmission and distribution systems in the national electricity transmission system operator area taken as a whole'*

We note that the proposed solution applies not just to safety coordination for work carried out on the NETS but when work affects users' systems. The greater flexibility offered by the proposed solution and the improvements to safety and efficiency therefore should have a beneficial effect not just for the NETS but also for those user systems connected to it, including those of generators and distributors.

For this reason, we agree that change proposal C/12 also better facilitates Applicable Grid Code Objective (iii).

## **Decision notice**

In accordance with Standard Condition C14 of NGET's Transmission Licence, the Authority hereby directs that change proposal Grid Code C/12: '*Safety Management of Three Position GIS Earth Switches*' be made.

**Andrew Burgess**

**Associate Partner, Transmission and Distribution Policy**

Signed on behalf of the Authority and authorised for that purpose