

## Grid Code Review Panel

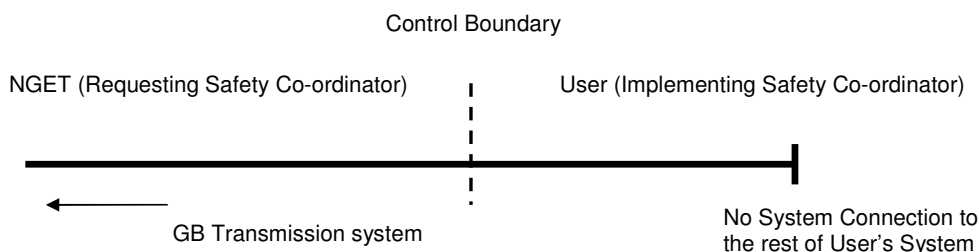
### Management of 'No System Connections' Prepared by National Grid, Scottish Power & Scottish Hydro Electric

#### Introduction

1. This paper proposes to amend OC8A and OC8B to address two issues. The first amendment proposes to include a new term "no system connection" to be used by a Safety Co-ordinator when implementing on a Users system which is either not built or connected when works are undertaken. The second amendment to provide a new provision for the Requesting Safety Co-ordinator (RSC) and the Implementing Safety Co-ordinator (ISC) to record the cancellation of a Record of Inter-System Safety Precautions RISSP in their respective Safety Logs.

#### Background

2. OC8 specifies the procedures to be used to provide Safety Precautions between Transmission Licensees on the GB Transmission System and between the GB Transmission System and a User's System. The Record of Inter-System Safety Precautions RISSP process is defined within OC8 and is used to manage Safety Precautions. As stated in OC8B Relevant Transmission Licensees in Scotland, may also use other site specific Operational Procedures that are agreed with individual Users, to manage Safety Precautions across such an interface.
3. The Electricity at Work Regulations requires that when systems are readily connectable, they shall be considered to be one system. There are instances during the construction of new assets where the GB Transmission System and a User's System are not readily connectable at the time when one party requires Safety Precautions. OC8 is designed to cover the procedures to be applied when work is carried out on or near the GB Transmission System or a User System, however the procedures assume that there is already a connection between the two Systems. Therefore the current OC8 provisions do not sufficiently cover the scenario where there is no system connection at the time Safety Precautions are requested, even though the two systems could become connected if construction work continues. .
4. During the construction of new assets either on User's Systems or the GB Transmission System scenarios have arisen where adequate Safety Precautions can be applied which are not currently envisaged by OC8. In particular an additional method of Isolation can be used (without the requirement for any Earthing). Consider the scenario below where there is a HV equipment boundary between NGET and a



User. NGET will request Safety Precautions from the User. The equipment on the User side of the boundary has no provision to apply a Caution Notice and / or Earthing because such equipment is not fully constructed. With the advent of gas insulated connections to Users this circumstance is not uncommon.

5. The Requesting Safety Co-ordinator (RSC) rightly requires confidence that the Implementing Safety Co-ordinator (ISC) has control measures in place to ensure that the conditions of Safety Precautions quoted on a RISSP shall not change.

### **Problem overview**

6. There are currently two identified issues with OC8A and OC8B, firstly under the current governance arrangements Safety Precautions as defined within the Grid Code can only be quoted on a RISSP. In the above example, it is not possible for the ISC to quote Safety Precautions on his side of the boundary. While a sufficient air gap, with a Caution Notice applied, can be utilised as a Point of Isolation in this particular scenario there is no physical location to attach a Caution Notice to. This would then result in no ability to apply required Earthing to achieve Safety from the System.
7. There is no Grid Code guidance on how Safety Co-ordinators shall record how to give or receive instructions from Users where it is not possible to apply Caution Notices and / or Earthing.
8. A “No System Connection” is where two systems are completely disconnected from each other and can be regarded from the management of Safety Precautions as independent from each other. The term “No System Connection” is not currently defined within the Grid Code.
9. As the ISC apparatus is not substantially built there is no means of providing any Isolation / Earthing across the control boundary. As there is currently no method in OC 8 to deal with this, the current RISSP process has been used to record a “No System Connection” when another party has equipment which has not been substantially built.
10. To provide sufficient confidence to the RSC, if the “No System Connection” is to be preserved by the ISC using a RISSP the form should require a statement of the control measures the ISC has in place to prevent the equipment quoted on the RISSP from becoming connected to the rest of the ISC’s System
11. A mechanism is required to allow section 1.2 of the RISSP to quote a ‘No System Connection’ and to detail the control measures the ISC has in place to prevent the equipment quoted in the RISSP becoming connected to the rest of the ISC’s System.
12. Secondly, there is currently no requirement in the Grid Code for the ISC and RSC to record the cancellation of a RISSP in their respective Safety Logs. It is proposed that this should be included.

### **Proposed solution**

13. To include in OC8 (and not in the Glossary and Definitions) a new definition ‘No System Connection’ and amend the definition of Isolation to make reference to No System Connection being a method of achieving Isolation. To clarify that the change

in the definition of Isolation only applies to its use in OC8. Amendments to OC8A.5.2.2 and OC8B.5.2.2, please refer to the draft legal text attached to this paper.

14. The intention is that the term No System Connection is only to be used as a further method of Isolation such that the RISSP process can be utilised in the situation where the two relevant systems are not connected [because the assets which would effect the connection are still being constructed] but could become so. As such the definition of Isolation to include reference to No System Connection has only been amended in OC8 and the definition for Isolation as it applies to the rest of the Grid Code remains unchanged.
15. To address the issue regarding the recording of the cancellation of the RISSP in Safety Logs an amendment to OC8A.5.5.3 and to OC8B5.5.3 is required.

### **Recommendation**

16. The Grid Code Review Panel are invited to approve the issuing of a consultation paper on the above proposals by National Grid, please refer to the draft legal text attached to this paper.

## Annex - Proposed Grid Code Legal Text

### OC8A.1.6 Defined terms

OC8A.1.6.1 **Users** should bear in mind that in **OC8** only, in order that **OC8** reads more easily with the terminology used in certain **Safety Rules**, the term "**HV Apparatus**" is defined more restrictively and is used accordingly in **OC8A**. **Users** should, therefore, exercise caution in relation to this term when reading and using **OC8A**. In addition in **OC8A** only, the term "**Isolation**" includes reference to "**No System Connection**".

OC8A.1.6.2 In **OC8A** only the following terms shall have the following meanings:

- (1) "**HV Apparatus**" means **High Voltage** electrical circuits forming part of a **System**, on which **Safety From The System** may be required or on which **Safety Precautions** may be applied to allow work to be carried out on a **System**.
- (2) "**Isolation**" means the disconnection of **Apparatus** from the remainder of the **System** in which that **Apparatus** is situated:

(A) by either of the following:

- (a) an **Isolating Device** maintained in an isolating position. The isolating position must either be:
  - (i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be, where reasonably practicable, given to the authorised site representative of the **Requesting Safety Co-Ordinator** and is to be retained in safe custody. Where not reasonably practicable the **Key Safe Key** must be retained by the authorised site representative of the **Implementing Safety Co-Ordinator** in safe custody; or
  - (ii) maintained and/or secured by such other method which must be in accordance with the **Local Safety Instructions** of **NGET** or that **User**, as the case may be; or
- (b) an adequate physical separation which must be in accordance with, and maintained by, the method set out in the **Local Safety Instructions** of **NGET** or that **User**, as the case may be, and, if it is a part of that method, a **Caution Notice** must be placed at the point of separation,

Or

(B) for the purposes only of the **RISSP** procedure, as a result of **No System Connection** due to the configuration of the **Implementing Safety Co-ordinators System**. In such circumstances there will be no requirement to provide **Earthing**.

- (3) "**Earthing**" means a way of providing a connection between conductors and earth by an **Earthing Device** which is either:
  - (i) immobilised and **Locked** in the earthing position. Where the **Earthing Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be, where reasonably practicable, given to the authorised site representative of the **Requesting Safety Co-**

**Ordinator** and is to be retained in safe custody. Where not reasonably practicable the **Key Safe Key** must be retained by the authorised site representative of the **Implementing Safety Co-Ordinator** in safe custody; or

- (ii) maintained and/or secured in position by such other method which must be in accordance with the **Local Safety Instructions** of **NGET** or that **User** as the case may be.

(4) “No System Connection” means an Implementing Safety Co-ordinators System which is connected to the Requesting Safety Co-ordinators System and is not connected to, and will not, for the duration of the Safety Precaution, be connected to a source of electrical energy or to any other part of the Implementing Safety Co-ordinators System.

OC8A.1.6.3 For the purpose of the co-ordination of safety relating to **HV Apparatus** the term “**Safety Precautions**” means **Isolation** and/or **Earthing**.

OC8A.5.2.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Isolation** has been established, and identify the **Requesting Safety Co-ordinator’s HV Apparatus** up to the **Connection Point**, for which the **Isolation** has been provided. The confirmation shall specify:

- (a) for each **Location**, the identity (by means of **HV Apparatus** name, nomenclature and numbering or position, as applicable) of each point of **Isolation**;
- (b) whether **Isolation** has been achieved by an **Isolating Device** in the isolating position or by an adequate physical separation or as a result of No System Connection;
- (c) where an **Isolating Device** has been used whether the isolating position is either :
  - (i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** has been **Locked** with a **Safety Key**, the confirmation shall specify that the **Safety Key** has been secured in a **Key Safe** and the **Key Safe Key** has been given to the authorised site representative of the **Requesting Safety Co-ordinator** where reasonably practicable and is to be retained in safe custody. Where not reasonably practicable (including where **Earthing** has been requested in OC8A.5.1), the confirmation shall specify that the **Key Safe Key** will be retained by the authorised site representative of the **Implementing Safety Co-ordinator** in safe custody; or
  - (ii) maintained and/or secured by such other method which must be in accordance with the **Local Safety Instructions** of **NGET** or that **User**, as the case may be; and

(d) where an adequate physical separation has been used that it will be in accordance with, and maintained by, the method set out in the **Local Safety Instructions** of **NGET** or that **User**, as the case may be, and, if it is a part of that method, that a **Caution Notice** has been placed at the point of separation: and

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(e) where as a result of **No System Connection** what the control measures are that the **Implementing Safety Co-ordinator** has put in place to prevent the equipment quoted on the **RISSP** from being connected to a source of electrical energy or from becoming connected to the rest of the **Implementing Safety Co-ordinator's System**.

The confirmation of **Isolation** shall be recorded in the respective **Safety Logs**.

OC8A.5.5.3 The **Requesting Safety Co-ordinator** and the relevant **Implementing Safety Co-ordinator** shall then respectively complete Part 2.1 of their respective **RISSP-R** and **RISSP-I** forms and shall then exchange details. The details being exchanged shall include their respective names and time and date. On completion of the exchange of details the respective **RISSP** is cancelled. The removal of **Safety Precautions** is as set out in OC8A.5.5.4 and OC8A.5.5.5. Cancellation of the **RISSP** shall be recorded in the respective **Safety Logs**.

*OC8A Appendix C3 to be inserted. See the flow charts below.*

OC8B.1.7 Defined terms

OC8B.1.7.1 **Users** should bear in mind that in **OC8** only, in order that **OC8** reads more easily with the terminology used in certain **Safety Rules**, the term "**HV Apparatus**" is defined more restrictively and is used accordingly in **OC8B**. **Users** should, therefore, exercise caution in relation to this term when reading and using **OC8B**. In addition in **OC8B** only, the term "**Isolation**" includes reference to "**No System Connection**".

OC8B.1.7.2 In **OC8** only the following terms shall have the following meanings:

- (1) "**HV Apparatus**" means **High Voltage** electrical circuits forming part of a **System**, on which **Safety From The System** may be required or on which **Safety Precautions** may be applied to allow work to be carried out on a **System**.
- (2) "**Isolation**" means the disconnection of **Apparatus** from the remainder of the **System** in which that **Apparatus** is situated:

(A) by either of the following:

- (a) an **Isolating Device** maintained in an isolating position. The isolating position must either be:
  - (i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be given to the authorised site representative of the **Requesting Safety Co-ordinator** where reasonably practicable and is to be retained in safe custody. Where not reasonably practicable the **Key Safe Key** must be retained by the authorised site representative of the **Implementing Safety Co-ordinator** in safe custody; or
  - (ii) maintained and/or secured by such other method which must be in accordance with the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be; or

- (b) an adequate physical separation which must be in accordance with, and maintained by, the method set out in the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be, and, if it is part of that method, a **Caution Notice** must be placed at the point of separation,

Or

(B) for the purposes only of the RISSP procedure, as a result of **No System Connection** due to the configuration of the **Implementing Safety Co-ordinators System**. In such circumstances there will be no requirement to provide **Earthing**.

- (3) "**Earthing**" means a way of providing a connection between conductors and earth by an **Earthing Device** which is either:
- (i) immobilised and **Locked** in the earthing position. Where the **Earthing Device** is **Locked** with a **Safety Key**, the **Safety Key** must be secured in a **Key Safe** and the **Key Safe Key** must be given to the authorised site representative of the **Requesting Safety Co-ordinator** where reasonably practicable and is to be retained in safe custody. Where not reasonably practicable the **Key Safe Key** must be retained by the authorised site representative of the **Implementing Safety Co-ordinator** in safe custody;  
or
- (iii) maintained and/or secured in position by such other method which must be in accordance with the **Safety Rules** of the **Relevant Transmission Licensee** or that **User** as the case may be.

(4) "**No System Connection**" means an **Implementing Safety Co-ordinators System** which is connected to the **Requesting Safety Co-ordinators System** and is not connected to, and will not, for the duration of the **Safety Precaution**, be connected to a source of electrical energy or to any other part of the **Implementing Safety Co-ordinators System**.

OC8B.1.7.3 For the purpose of the co-ordination of safety relating to **HV Apparatus** the term "**Safety Precautions**" means **Isolation** and/or **Earthing**.

OC8B.5.2.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Isolation** has been established, and identify the **Requesting Safety Co-ordinator's HV Apparatus** up to the **Connection Point**, for which the **Isolation** has been provided. The confirmation shall specify:

- (a) for each **Location**, the identity (by means of **HV Apparatus** name, nomenclature and numbering or position, as applicable) of each point of **Isolation**;
- (b) whether **Isolation** has been achieved by an **Isolating Device** in the isolating position or by an adequate physical separation or as a result of **No System Connection**;
- (c) where an **Isolating Device** has been used whether the isolating position is either :

- (i) maintained by immobilising and **Locking** the **Isolating Device** in the isolating position and affixing a **Caution Notice** to it. Where the **Isolating Device** has been **Locked** with a **Safety Key**, the confirmation shall specify that the **Safety Key** has been secured in a **Key Safe** and the **Key Safe Key** has been given to the authorised site representative of the **Requesting Safety Co-ordinator** where reasonably practicable and is to be retained in safe custody. Where not reasonably practicable (including where **Earthing** has been requested in OC8B.5.1), the confirmation shall specify that the **Key Safe Key** will be retained by the authorised site representative of the **Implementing Safety Co-ordinator** in safe custody; or
- (ii) maintained and/or secured by such other method which must be in accordance with the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be; and

(d) where an adequate physical separation has been used that it will be in accordance with, and maintained by, the method set out in the **Safety Rules** of the **Relevant Transmission Licensee** or that **User**, as the case may be, and, if it is a part of that method, that a **Caution Notice** has been placed at the point of separation; and

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(e) where as a result of **No System Connection** what the control measures are that the **Implementing Safety Co-ordinator** has put in place to prevent the equipment quoted on the **RISSP** from being connected to a source of electrical energy or from becoming connected to the rest of the **Implementing Safety Co-ordinator's System**.

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The confirmation of **Isolation** shall be recorded in the respective **Safety Logs**.

OC8B.5.5.3 The **Requesting Safety Co-ordinator** and the relevant **Implementing Safety Co-ordinator** shall then respectively complete Part 2.1 of their respective RISSP-R and RISSP-I forms and shall then exchange details. The details being exchanged shall include their respective names and time and date. On completion of the exchange of details the respective **RISSP** is cancelled. The removal of **Safety Precautions** is as set out in OC8B.5.5.4 and OC8B.5.5.5. Cancellation of the **RISSP** shall be recorded in the respective **Safety Logs**.

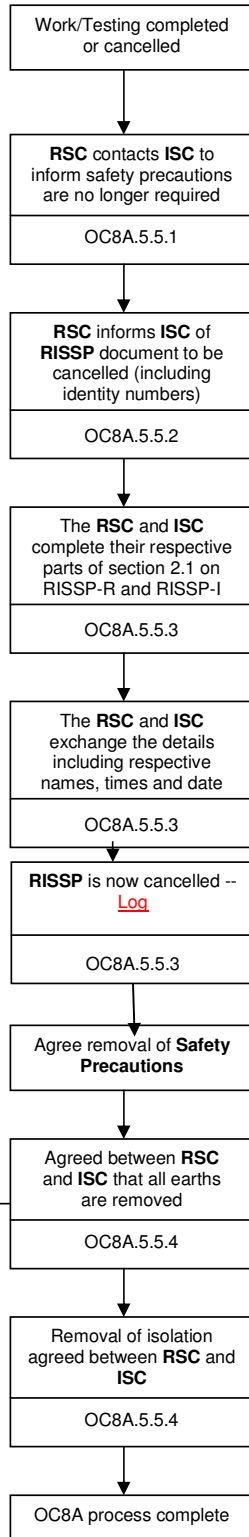
*OC8B Appendix C3 to be inserted. See the flow charts below..*



**Requesting Safety Co-ordinator**

**(RSC)**  
Person requiring **Safety Precaution** from another **User**

**Implementing Safety Co-ordinator (ISC)**  
Person who co-ordinates provision of **Safety Precautions**



Removal of earthing during testing across the **Connection Point** is as set out in:-  
OC8A.6.2(b)

Removal being an internal matter for the party the **ISC** represents  
OC8A.5.5.5

**RISSP CANCELLATION PROCESS**

- OC8B -

Appendix C3

**Requesting Safety Co-ordinator (RSC)**  
 Person requiring **Safety Precaution** from another **User**

**Implementing Safety Co-ordinator (ISC)**  
 Person who co-ordinates provision of **Safety Precautions**

