The National Grid Company plc

GRID CODE REVIEW PANEL

OC8 - Safety Co-ordination for work near to HV Apparatus in substations

5 September 2002

Introduction

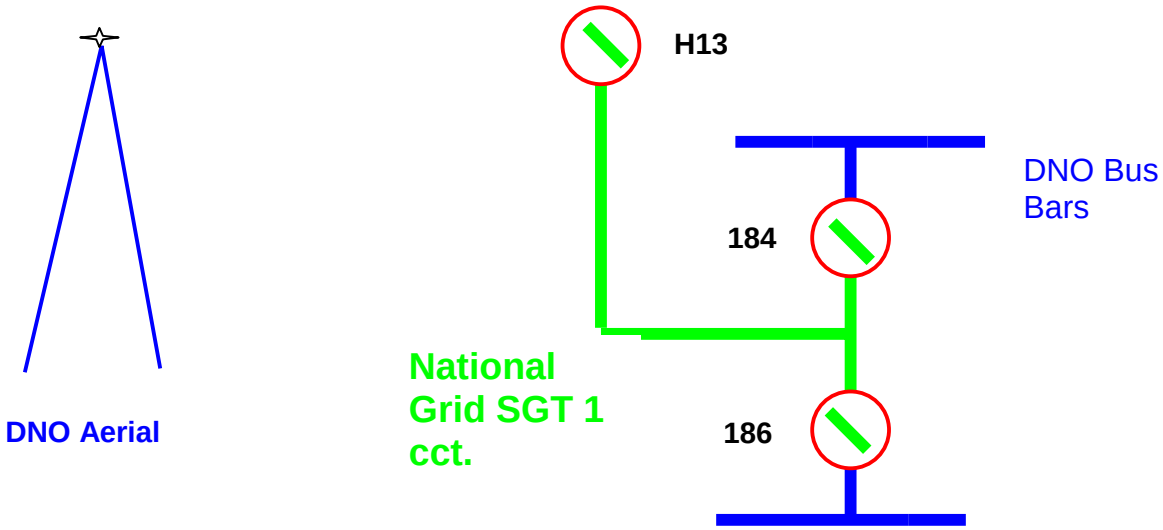
1. In March 2000, National Grid issued Consultation paper A/00 to include, amongst other things, proposals to clarify that OC8 did not cover Safety Precautions where work was being carried out on equipment **near** to an energised HV System but where no connection to the energised HV System existed. During the consultation period, it became clear that some Users would like the Grid Code to cover these circumstances, but it was not possible to achieve full agreement on the way forward at the time. Hence the proposals were withdrawn from the consultation, permitting that consultation to be concluded with an agreement that the issue would be brought back to the GCRP at a later date.

2. This paper describes the results of further consideration of this issue and introduces some proposed Grid Code changes in relation to work inside substations.

3. OC8 of the Grid Code covers the co-ordination of Isolation and Earthing utilising Safety Co-ordinators in relation to each Connection Point. It currently deals with this co-ordination when work is being carried out on the System of NGC or a User and Isolation and/or Earthing is consequently needed on the other's System. Where work is to be undertaken near to overhead/underground conductors of a System outside a Connection Site, separate Health and Safety Regulations issues apply. Where such work is to be undertaken within a Connection Site, it is believed that it would be sensible to cover this position in the Grid Code, as it relates to the Connection Point.

4. There may be situations where third parties other than Users or National Grid require this 'proximity' working within substations. This is a matter between the third party and the operator of the equipment that the third party will be working close to, and is not covered by the Grid Code as the third party will not be a party to the Grid Code.

An example to illustrate the issues within a Connection Site



5. An example of a situation which, on occasion, arises in practice is shown in the diagram above:

   The example illustrates work taking place by Network Operator staff at one of its substations to erect (or dismantle) a radio aerial where the aerial (or a crane) could come into contact with the National Grid circuit during the lifting operation. In this example, no circuit or busbar owned by the User is close enough such that the aerial (or a crane) could come into contact with it, and so it is not shown.

6. There is also the possibility that the work will be taking place near to the person's own circuit, necessitating the Isolation and Earthing of that circuit and of the other's circuit connected to it. This is similar to OC8 as currently written, except that OC8 currently only applies where work is being carried out **on** a circuit, and so in this second example, it would not currently be possible to use OC8.

Compatibility with HSE Regulations

7. Regulation 4(3) and 14 of the Electricity at Work Regulations use the term "work" on electrical conductors as including "work on or near" to those electrical conductors. In National Grid and many other Users' Safety Rules this concept of "work on or near" is defined and reflects the requirement of those Regulations.

Options identified

8. The example outlined in paragraph 6 above can be dealt with by adding just a few words to the current OC8 to expand the provisions slightly to cover the situation where work may not actually be on the Requesting Co-ordinator's System. For the example outlined in paragraph 5 above, and in the diagram, National Grid has identified four possible options for dealing with the situation which it is proposed to cover. For ease of reference, these are described with reference to a User requesting the application by National Grid of Safety Precautions due to it wishing to work on its equipment. However, an equivalent approach applies when NGC wishes to work on its equipment near to a User's System. The options are:

Proximity Permit for Work Option

a) The National Grid safety controller consents to the issue of a National Grid Proximity Permit for Work to a suitably trained person. This document would **not** allow work on the National Grid circuit, only work near to the defined circuit. (see example in Appendix 1). A second document issued by the other User would allow work on the equipment (e.g. the aerial) to proceed.

Certificate of Isolation Option

b) National Grid issues a "Certificate of Isolation" to the User. The User would then issue his own safety documentation.

Control Transfer Certificate Option

c) A “Control Transfer Certificate” is utilised to move the Control Boundary from its normal position to isolator H13, placing the part of the system at risk under the control of the Network Operator, permitting him to issue his own safety documentation.

Modified ‘One Way’ RISSP Procedure Option

d) The RISSP procedure and forms are modified to recognise the concept of work "on or near to" live equipment.

9. Discussion of Options

Proximity Permit for Work Option (Option a)

No changes would be required in National Grid or, it is believed, Users' Safety Rules. The principles underlining the issue of RISSPs would not need to be changed, but no RISSPs would be issued, reflecting the circumstances of this unusual situation. Work initiated by Users requiring Safety Precautions from NGC would be clearly defined. The principle to apply would be that the User, who is initiating the work, must make provision for providing trained staff to receive the safety document associated with the proximity work initiated by it.

The principles of OC8 are regularly used by Safety Co-ordinators to manage safety across control boundaries. Even though there is no electrical connection between the User and NGC in the example above there is a ‘virtual’ connection that must be managed by the appropriate Safety Co-ordinators. These are the same Safety Co-ordinators that manage Safety Precautions under the current provisions of OC8. It is these Safety Co-ordinators who in the past have had to manage the above proximity issues on an ad-hoc basis without any formal structure being available to them in OC8 or any other industry standard.

Were this option to be adopted, OC8 would cover the issuing of the Proximity Permit for Work in this situation.

Certificate of Isolation Option (Option b)

The ‘Certificate of Isolation’ would reflect that Isolation has been put in place such that the circuit near to where the work is to be undertaken is Isolated. It would be a form of simplified RISSP process. However, National Grid and, it is understood, most if not all User’s Safety Rules do not contain the functionality of a "Certificate of Isolation”, and so not only would the Grid Code need to be changed, but there would need to be changes in all (or at least many) Safety Rules.

Control Transfer Certificate Option (Option c)

Use of a “Control Transfer Certificate” (CTC) would allow work on the aerial to proceed by the issue of one safety document within the site. However no overall reduction in documentation would follow as the CTC would have to be issued between safety controllers and the local Site Responsibility Schedules would need to be modified in advance to enable the use of CTCs. With this option National Grid could be restricted if it also wished to carry out work on the same circuit during the same outage as the equipment it wished to work on has been transferred into the control of another party.

Modified ‘One Way’ RISSP Procedure Option (Option d)

The RISSP could be amended to include the facility to hold safety precautions to enable work on the aerial (in example above) to proceed. However as National Grid and User’s rules define that a safety document shall be issued for "work on or near" to their company’s equipment, without the change of safety rules a National Grid Permit for Work would still need to be issued for the example above, and so it would include a requirement for more documents than the Permit for Work.

10. Preferred Option

National Grid believes the Grid Code should be amended to reflect work “near” to a System and prefers option a), the Proximity Permit for Work Option, for the following reasons:

- The intent of Electricity at Work Regulations Regulation 4(3) and 14 in relation to work “near” to electrical conductors would be included in the Grid Code.
- Previously applied good industry practice would be reflected.
- For the first time "work on or near" to other Users equipment would be included in OC8 to provide a common approach with National Grid and Users.
- The well understood principle of Control Persons would be included in relation to proximity work, without the need for National Grid or Users to change their Safety Rules.
- The level of documentation required would be less than if the RISSP were to be amended to cover this work.

11. Safety Document Worked Example

Appendix 1 to this Panel Paper contains a ‘worked example’ of a Proximity Permit for Work and shows how using NGC safety documentation, the proximity issues are controlled between work areas managed by different control persons.

12. Proposed Grid Code changes

Appendix 2 to this paper contains definitions and text from OC8 of the Grid Code marked up to show the proposed changes required to extend the scope of the existing Safety Co-ordination to deal with work taking place near to HV Apparatus at Connection Sites.

(a) Broadly, a new section, OC8.8, has been proposed to deal with working near to a System, which contains the process to reflect the Proximity Permit for Work Option.

(b) In order to support that, a new paragraph has been proposed for the Introduction section (OC8.1.2), and to ensure that defined terms which are included in OC8 structurally fit in with the new section, the paragraph dealing with the term ‘Safety Precautions’ has been moved to OC8.1.5.3 from OC8.5.1.

(c) The Objective section has been amended also to reflect the new process, and various consequential changes made throughout OC8. Examples are in OC8.4.2.4 and OC8.4.3.1. The numbering of OC8.5 has also been changed slightly to reflect that OC8.5.1 is no longer in that part of OC8.

(d) OC8.8 is based, structurally, on the process for the RISSP provisions, but reflects that the Proximity Permit for Work, and reflects that the ‘System’; being referred to on which Safety Precautions have been implemented is the Implementing Safety Co-ordinator’s, as opposed to the Requesting Safety Co-ordinator’s in the case of the RISSP provisions, reflecting that the Requesting Safety Co-ordinator’s ‘System’ is not involved.

Recommendation

13. Members of the Grid Code Review Panel are invited to consider the issues raised in this paper and its proposals. Following this discussion, National Grid would propose to issue a Grid Code Consultation Paper.

National Grid

APPENDIX 1 - PAGE 1

No.

PERMIT FOR WORK

1. **Location** Staythorpe 400 Kv Substation.
Equipment Identification Cottam 2 circuit Area Adjacent To Low Level Busbars and Capacitor Voltage Transformers.

Work to be done Work In Proximity To Cottam 2 Circuit Area Adjacent To Low Level Busbars and Capacitor Voltage Transformers.

2. **Precautions taken to achieve Safety from the System**
Points of Isolation Staythorpe 400 Kv Substation
X403, Cottam 2 Circuit 400 Kv Line Current Voltage Transformer Secondary Supplies.

Primary Earths Staythorpe 400 Kv Substation
X401A

Actions taken to avoid **Danger** by draining, venting, purging and containment or dissipation of stored energy*
NIL

Further precautions to be taken during the course of the work to avoid **System** derived hazards* ……
All Drain Earths To Be Applied and Removed In Accordance With Earthing Schedule.

3. Precautions that may be varied* N/A

4. Preparation
Control Person(s) (Safety) giving Consent [ ] **Key Safe** number* [ ]

State whether this **Permit for Work** must be personally retained yes [ ] no [ ]

Signed [ ] Time [ ] Date [ ]
Senior Authorised Person

5. Issue & Receipt

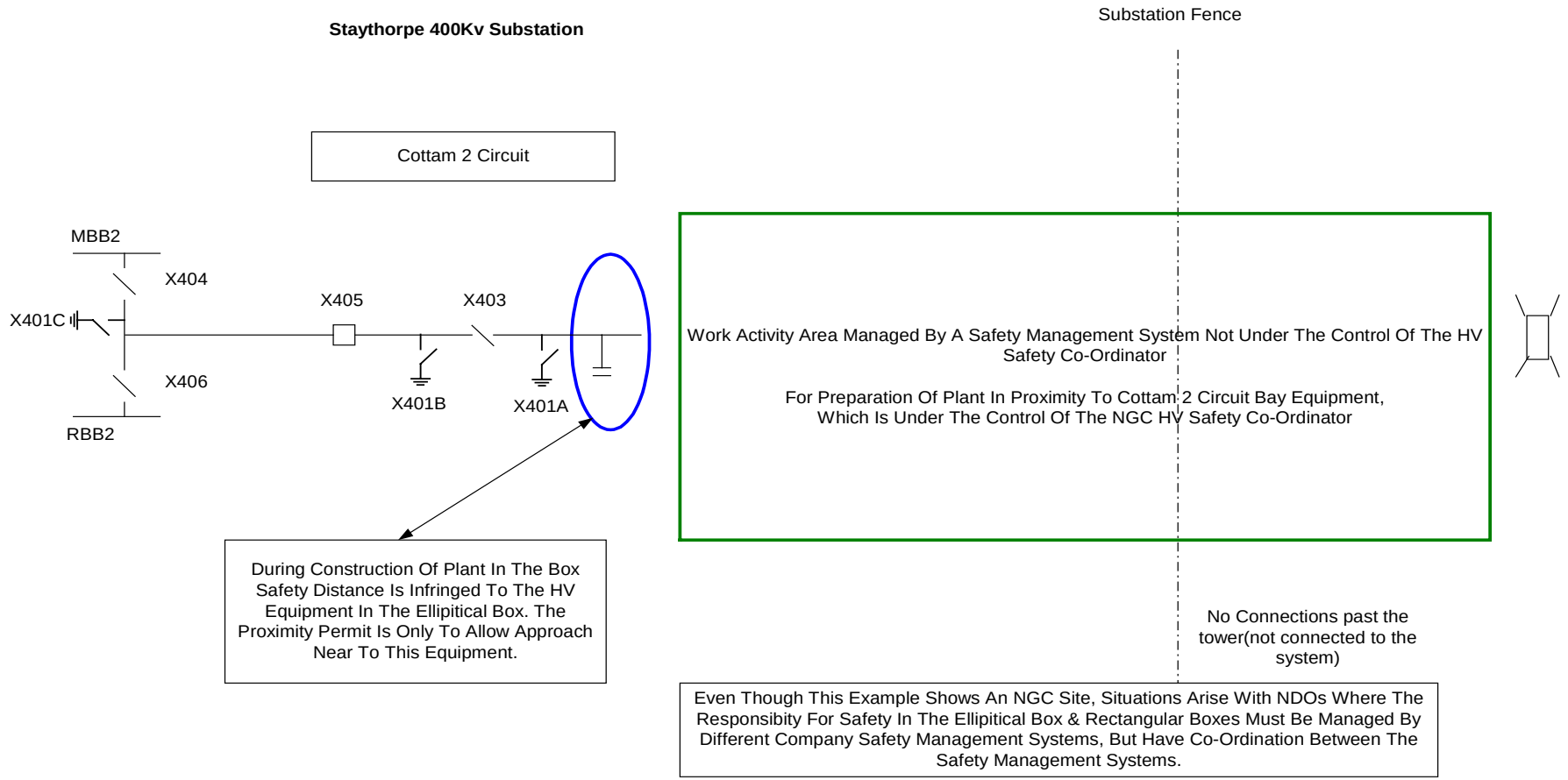
Key Safe Number*	[ ]	**Safety Keys** (No. off)*	[ ]
Earthing Schedule Number*	[ ]	Portable **Drain earths** (No. off)*	[ ]
Recommendations for **General Safety** Report Number*	[ ]	**Approved** (ROMP)#/**Card Safe**#/ Procedure Number*	[ ]
Circuit Identification – Colours/ Symbols*	[ ]	Flags (No. off)* [ ]	Wristlets (No. off)* [ ]

Issued (Signed) [ ]
Senior Authorised Person

Received (Signed) [ ] Time [ ] Date [ ]
Competent Person

Name (Block letters) [ ] Company [ ]

delete as appropriate *write N/A if not applicable



This is a Schematic Drawing and does not represent geographical locations

Network Operations Centre

Example of a Proximity Permit

Substation / Circuits:	Staythorpe 400Kv
Scheme No.:	
Issue No.:	1
Created by:	Richard Scarth

APPENDIX 2

OC8 Related Definitions

Proximity Permit for Work	A document issued by **NGC** or a **User** in accordance with its respective **Safety Rules** to enable work to be carried out in accordance with OC8.8 and which provides for **Safety Precautions** to be applied and maintained. An example format of **NGC**'s permit for work is attached as Appendix E to **OC8**.
Safety From The System	That condition which safeguards persons when work is to be carried out on or near a **System** from the dangers which are inherent in the **System**.

OPERATING CODE NO.8

SAFETY CO-ORDINATION

CONTENTS

(This contents page does not form part of the Grid Code)

APPENDIX E - Form of NGC Permit for Work

OPERATING CODE NO.8

SAFETY CO-ORDINATION

OC8.1 INTRODUCTION

OC8.1.1 Operating Code No.8 ("**OC8**") specifies the standard procedures to be used by **NGC** and **Users** for the co-ordination, establishment and maintenance of necessary **Safety Precautions** when work is to be carried out on or near the **System** of **NGC** or a **User** and when there is a need for **Safety Precautions** on **HV Apparatus** on the other's **System** for this work to be carried out safely. In this **OC8** the term "work" includes testing, other than **System Tests** which are covered by **OC12**.

OC8.1.2 **OC8** also covers the co-ordination, establishment and maintenance of necessary safety precautions on the **Implementing Safety Co-ordinator's System** when work is to be carried out at a **User's Site** or a **NGC Site** (as the case may be) on equipment of the **User** or **NGC** as the case may be where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**.

OC8.1.3 **OC8** does not apply to the situation where **Safety Precautions** need to be agreed solely between **Users**.

~~OC8.1.3~~OC8.1.4 **OC8** does not seek to impose a particular set of **Safety Rules** on **NGC** and **Users**; the **Safety Rules** to be adopted and used by **NGC** and each **User** shall be those chosen by each.

~~OC8.1.4~~OC8.1.5 Defined terms

~~OC8.1.4.1~~OC8.1.5.1 **Users** should bear in mind that in **OC8** only, in order that **OC8** reads more easily with the terminology used in **NGC's** and certain **Users' Safety Rules**, the term "**HV Apparatus**" is defined more restrictively and is used accordingly in **OC8**. **Users** should, therefore, exercise caution in relation to this term when reading and using **OC8**.

~~OC8.1.4.2~~OC8.1.5.2 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 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 retained in safe custody; or

(ii) maintained and/or secured by such other method which must be in accordance with the **Local Safety Instructions** of **NGC** 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 **NGC** 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.

(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~~ **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 retained 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 **NGC** or that **User** as the case may be.

OC8.1.5.3 For the purpose of the co-ordination of safety relating to **HV Apparatus** the term "**Safety Precautions**" means **Isolation** and/or **Earthing**.

OC8.2 OBJECTIVE

OC8.2.1 The objective of **OC8** is to achieve:-

(i) **Safety From The System** when work on or near a **System** necessitates the provision of **Safety Precautions** on another **System** on **HV Apparatus** up to a **Connection Point**~~.~~; and

(ii) **Safety From The System** when work is to be carried out at a **User's Site** or a **NGC Site** (as the case may be) on equipment of the **User** or **NGC** where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**.

OC8.2.2 A flow chart, set out in Appendix C, illustrates the process utilised in **OC8** to achieve the objective set out in OC8.2.1. In the case of a conflict between the flow chart and the provisions of the written text of **OC8**, the written text will prevail.

OC8.3 SCOPE

OC8.3.1 **OC8** applies to **NGC** and to **Users**, which in OC8 means:-

(a) **Generators**;

(b) **Network Operators**; and

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

The procedures for the establishment of safety co-ordination by **NGC** with **Externally Interconnected System Operators** are set out in **Interconnection Agreements** with each **Externally Interconnected System Operator**.

OC8.4 PROCEDURE

OC8.4.1 Approval of **Local Safety Instructions**

OC8.4.1.1 (a) In accordance with the timing requirements of its **Bilateral Agreement**, each **User** will supply to **NGC** a copy of its **Local Safety Instructions** relating to its side of the **Connection Point** at each **Connection Site**.

(b) In accordance with the timing requirements of each **Bilateral Agreement**, **NGC** will supply to each **User** a copy of its **Local Safety Instructions** relating to the **NGC** side of the **Connection Point** at each **Connection Site**.

(c) Prior to connection each party must have approved the other's relevant **Local Safety Instructions** in relation to **Isolation** and **Earthing**.

OC8.4.1.2 Either party may require that the **Isolation** and/or **Earthing** provisions in the other party's **Local Safety Instructions** affecting the **Connection Site** should be made more stringent in order that approval of the other party's **Local Safety Instructions** can be given. Provided these requirements are not unreasonable, the other party will make such changes as soon as reasonably practicable. These changes may need to cover the application of **Isolation** and/or **Earthing** at a place remote from the **Connection Site**, depending upon the **System** layout. Approval may not be withheld because the party required to approve reasonably believes the provisions relating to **Isolation** and/or **Earthing** are too stringent.

OC8.4.1.3 If, following approval, a party wishes to change the provisions in its **Local Safety Instructions** relating to **Isolation** and/or **Earthing**, it must inform the other party. If the change is to make the provisions more stringent, then the other party merely has to note the changes. If the change is to make the provisions less stringent, then the other party needs to approve the new provisions and the procedures referred to in OC8.4.1.2 apply.

OC8.4.2 **Safety Co-ordinators**

OC8.4.2.1 For each **Connection Point, NGC** and each **User** will at all times have nominated and available a person or persons ("**Safety Co-ordinator(s)**") to be responsible for the co-ordination of **Safety Precautions** when work is to be carried out on a **System** which necessitates the provision of **Safety Precautions** on **HV Apparatus** pursuant to **OC8 .** A **Safety Co-ordinator** may be responsible for the co-ordination of safety on **HV Apparatus** at more than one **Connection Point**.

OC8.4.2.2 Each **Safety Co-ordinator** shall be authorised by **NGC** or a **User,** as the case may be, as competent to carry out the functions set out in **OC8** to achieve **Safety From The System**. Confirmation from **NGC** or a **User**, as the case may be, that its **Safety Co-ordinator(s)** as a group are so authorised is dealt with in CC.5.2. Only persons with such authorisation will carry out the provisions of **OC8**.

OC8.4.2.3 Contact between **Safety Co-ordinators** will be made via normal operational channels, and accordingly separate telephone numbers for **Safety Co-ordinators** need not be provided. At the time of making contact, each party will confirm that they are authorised to act as a **Safety Co-ordinator**, pursuant to **OC8**.

OC8.4.2.4 If work is to be carried out on a **System**, or on equipment of **NGC** or a **User** near to a **System**, as provided in this **OC8**, which necessitates the provision of **Safety Precautions** on **HV Apparatus** in accordance with the provisions of **OC8**, the **Requesting Safety Co-ordinator** who requires the **Safety Precautions** to be provided shall contact the relevant **Implementing Safety Co-ordinator** to co-ordinate the establishment of the **Safety Precautions**.

OC8.4.3 **RISSP**

OC8.4.3.1 **OC8** sets out the procedures for utilising the **Record of Inter-System Safety Precautions** ("**RISSP**"), which will be used except where dealing with equipment in proximity to the other's **System** as provided in **OC8.8**. Sections **OC8.4** to **OC8.7** inclusive should be read accordingly.

OC8.4.3.2 **NGC** will use the format of the **RISSP** forms set out in Appendix A and Appendix B to **OC8**. That set out in Appendix A and designated as "RISSP-R", shall be used when

NGC is the **Requesting Safety Co-ordinator**, and that in Appendix B and designated as "RISSP-I", shall be used when **NGC** is the **Implementing Safety Co-ordinator**. Proformas of RISSP-R and RISSP-I will be provided for use by **NGC** staff.

OC8.4.3.3 (a) **Users** may either adopt the format referred to in OC8.4.3.2, or use an equivalent format, provided that it includes sections requiring insertion of the same information and has the same numbering of sections as RISSP-R and RISSP-I as set out in Appendices A and B respectively.

(b) Whether **Users** adopt the format referred to in OC8.4.3.2, or use the equivalent format as above, the format may be produced and held in, and retrieved from an electronic form by the **User**.

(c) Whichever method **Users** choose, each must provide proformas (whether in tangible or electronic form) for use by its staff.

OC8.4.3.4 All references to RISSP-R and RISSP-I shall be taken as referring to the corresponding parts of the alternative forms or other tangible written or electronic records used by each **User**.

OC8.4.3.5 RISSP-R will have an identifying number written or printed on it, comprising a prefix which identifies the location at which it is issued, and a unique (for each **User** or **NGC**, as the case may be) serial number consisting of four digits and the suffix "R"

OC8.4.3.6 (a) In accordance with the timing requirements set out in CC.5.2 each **User** shall apply in writing to **NGC** for **NGC's** approval of its proposed prefix.

(b) **NGC** shall consider the proposed prefix to see if it is the same as (or confusingly similar to) a prefix used by **NGC** or another **User** and shall, as soon as possible (and in any event within ten days), respond in writing to the **User** with its approval or disapproval.

(c) If **NGC** disapproves, it shall explain in its response why it has disapproved and will suggest an alternative prefix.

(d) If **NGC** has disapproved, then the **User** shall either notify **NGC** in writing of its acceptance of the suggested alternative prefix or it shall apply in writing to **NGC** with revised proposals and the above procedure shall apply to that application.

OC8.4.3.7 The prefix allocation will be periodically circulated by **NGC** to all **Users,** for information purposes, using a National Grid Safety Circular in the form set out in Appendix D.

OC8.5 **SAFETY PRECAUTIONS** ON **HV APPARATUS**

~~OC8.5.1 **Safety Precautions**~~

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

~~OC8.5.2~~OC8.5.1 Agreement of **Safety Precautions**

~~OC8.5.2.1~~OC8.5.1.1 The **Requesting Safety Co-ordinator** who requires **Safety Precautions** on another **System(s)** will contact the relevant **Implementing Safety Co-ordinator(s)** to agree the **Location** of the **Safety Precautions** to be established. This agreement will be recorded in the respective **Safety Logs**.

~~OC8.5.2.2~~OC8.5.1.2 It is the responsibility of the **Implementing Safety Co-ordinator** to ensure that adequate **Safety Precautions** are established and maintained, on his and/or another **System** connected to his **System**, to enable **Safety From The System** to be achieved on the **HV Apparatus**, specified by the **Requesting Safety Co-ordinator**

which is to be identified in Part 1.1 of the **RISSP**. Reference to another **System** in this ~~OC8.5.2.2~~OC8.5.1.2 shall not include the **Requesting Safety Co-ordinator's System** which is dealt with in ~~OC8.5.2.3.~~OC8.5.1.3.

~~OC8.5.2.3~~OC8.5.1.3 When the **Implementing Safety Co-ordinator** is of the reasonable opinion that it is necessary for **Safety Precautions** on the **System** of the **Requesting Safety Co-ordinator**, other than on the **HV Apparatus** specified by the **Requesting Safety Co-ordinator,** which is to be identified in Part 1.1 of the **RISSP**, he shall contact the **Requesting Safety Co-ordinator** and the details shall be recorded in part 1.1 of the **RISSP** forms. In these circumstances it is the responsibility of the **Requesting Safety Co-ordinator** to establish and maintain such **Safety Precautions**.

~~OC8.5.2.4~~OC8.5.1.4 In the event of disagreement

In any case where the **Requesting Safety Co-ordinator** and the **Implementing Safety Co-ordinator** are unable to agree the **Location** of the **Isolation** and (if requested) **Earthing**, both shall be at the closest available points on the infeeds to the **HV Apparatus** on which **Safety From The System** is to be achieved as indicated on the **Operation Diagram**.

~~OC8.5.3~~OC8.5.2 Implementation of **Isolation**

~~OC8.5.3.1~~OC8.5.2.1 Following the agreement of the **Safety Precautions** in accordance with ~~OC8.5.2~~OC8.5.1 the **Implementing Safety Co-ordinator** shall then establish the agreed **Isolation**.

~~OC8.5.3.2~~OC8.5.2.2 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;

(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** that the **Safety Key** has been secured in a **Key Safe** and the **Key Safe Key** will be retained in safe custody; or

(ii) maintained and/or secured by such other method which must be in accordance with the **Local Safety Instructions** of **NGC** 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 **NGC** 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.

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

~~OC8.5.3.3~~OC8.5.2.3 Following the confirmation of **Isolation** being established by the **Implementing Safety Co-ordinator** and the necessary establishment of relevant

Isolation on the **Requesting Safety Co-ordinators System**, the **Requesting Safety Co-ordinator** may then request the implementation of **Earthing** by the **Implementing Safety Co-ordinator**, if agreed in section ~~OC8.5.2.~~OC8.5.1.

~~OC8.5.4~~OC8.5.3 Implementation of **Earthing**

~~OC8.5.4.1~~OC8.5.3.1 The **Implementing Safety Co-ordinator** shall then establish the agreed **Earthing**.

~~OC8.5.4.2~~OC8.5.3.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Earthing** has been established, and identify the **Requesting Safety Co-ordinator's HV Apparatus** up to the **Connection Point**, for which the **Earthing** 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 is applicable) of each point of **Earthing**; and

(b) in respect of the **Earthing Device** used, whether it is:

(i) immobilised and **Locked** in the ~~earthing~~ **Earthing** position. Where the **Earthing Device** has been **Locked** with a **Safety Key**, that the **Safety Key** has been secured in a **Key Safe** and the **Key Safe Key** will be retained in safe custody; or

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

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

~~OC8.5.4.3.~~OC8.5.3.3. The **Implementing Safety Co-ordinator** shall ensure that the established **Safety Precautions** are maintained until requested to be removed by the relevant **Requesting Safety Co-ordinator**.

~~OC8.5.5~~OC8.5.4 **RISSP** Issue Procedure

~~OC8.5.5.1~~OC8.5.4.1 Where **Safety Precautions** on another **System(s)** are being provided to enable work on the **Requesting Safety Co-ordinator's System**, before any work commences they must be recorded by a **RISSP** being issued. The **RISSP** is applicable to **HV Apparatus** up to the **Connection Point** identified in section 1.1 of the RISSP-R and RISSP-I forms.

~~OC8.5.5.2~~OC8.5.4.2 Where **Safety Precautions** are being provided to enable work to be carried out on both sides of the **Connection Point** a **RISSP** will need to be issued for each side of the **Connection Point** with **NGC** and the respective **User** each enacting the role of **Requesting Safety Co-ordinator**. This will result in a RISSP-R and a RISSP-I form being completed by each of **NGC** and the **User**, with each **Safety Co-ordinator** issuing one **RISSP** number.

~~OC8.5.5.3~~OC8.5.4.3 Once the **Safety Precautions** have been established (in accordance with ~~OC8.5.3 and OC8.5.4),~~OC8.5.2 and OC8.5.3), the **Implementing Safety Co-ordinator** shall complete parts 1.1 and 1.2 of a RISSP-I form recording the details specified in ~~OC8.5.2.3, OC8.5.3.2 and OC8.5.4.2.~~OC8.5.1.3, OC8.5.2.2 and OC8.5.3.2. Where **Earthing** has not been requested, Part 1.2(b) will be completed with the words "not applicable" or "N/A". He shall then contact the **Requesting Safety Co-ordinator** to pass on these details.

~~OC8.5.5.4~~OC8.5.4.4 The **Requesting Safety Co-ordinator** shall complete Parts 1.1 and 1.2 of the RISSP-R, making a precise copy of the details received. On completion, the

Requesting Safety Co-ordinator shall read the entries made back to the sender and check that an accurate copy has been made.

~~OC8.5.5.5~~OC8.5.4.5 The **Requesting Safety Co-ordinator** shall then issue the number of the **RISSP**, taken from the RISSP-R, to the **Implementing Safety Co-ordinator** who will ensure that the number, including the prefix and suffix, is accurately recorded in the designated space on the RISSP-I form.

~~OC8.5.5.6~~OC8.5.4.6 The **Requesting Safety Co-ordinator** and the **Implementing Safety Co-ordinator** shall complete and sign Part 1.3 of the RISSP-R and RISSP-I respectively and then enter the time and date. When signed no alteration to the **RISSP** is permitted; the **RISSP** may only be cancelled.

~~OC8.5.5.7~~OC8.5.4.7 The **Requesting Safety Co-ordinator** is then free to authorise work (including a test that does not affect the **Implementing Safety Co-ordinator's System**) in accordance with the requirements of the relevant internal safety procedures which apply to the **Requesting Safety Co-ordinator's System**. This is likely to involve the issue of safety documents or other relevant internal authorisations. Where testing is to be carried out which affects the **Implementing Safety Co-ordinator's System**, the procedure set out below in OC8.6 shall be implemented.

~~OC8.5.6~~OC8.5.5 **RISSP** Cancellation Procedure

~~OC8.5.6.1~~OC8.5.5.1 When the **Requesting Safety Co-ordinator** decides that **Safety Precautions** are no longer required, he will contact the relevant **Implementing Safety Co-ordinator** to effect cancellation of the associated **RISSP**.

~~OC8.5.6.2~~OC8.5.5.2 The **Requesting Safety Co-ordinator** will inform the relevant **Implementing Safety Co-ordinator** of the **RISSP** identifying number (including the prefix and suffix), and agree it is the **RISSP** to be cancelled.

~~OC8.5.6.3~~OC8.5.5.3 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 ~~OC8.5.6.4 and OC8.5.6.5.~~OC8.5.5.4 and OC8.5.5.5.

~~OC8.5.6.4~~OC8.5.5.4 Neither **Safety Co-ordinator** shall instruct the removal of any **Isolation** forming part of the **Safety Precautions** as part of the returning of the **HV Apparatus** to service until it is confirmed to each by each other that every earth on each side of the **Connection Point**, within the points of isolation identified on the **RISSP**, has been removed or disconnected by the provision of additional **Points of Isolation**.

~~OC8.5.6.5~~OC8.5.5.5 Subject to the provisions in ~~OC8.5.6.4,~~OC8.5.5.4, the **Implementing Safety Co-ordinator** is then free to arrange the removal of the **Safety Precautions**, the procedure to achieve that being entirely an internal matter for the party the **Implementing Safety Co-ordinator** is representing. The only situation in which any **Safety Precautions** may be removed without first cancelling the **RISSP** in accordance with ~~OC8.5.6 or OC8.5.7~~OC8.5.5 or OC8.5.6 is when **Earthing** is removed in the situation envisaged in OC8.6.2(b).

~~OC8.5.7~~OC8.5.6 **RISSP** Change Control

Nothing in this OC8 prevents **NGC** and **Users** agreeing to a simultaneous cancellation and issue of a new **RISSP**, if both agree. It should be noted, however, that the effect of that under the relevant **Safety Rules** is not a matter with which the **Grid Code** deals.

OC8.6 TESTING AFFECTING ANOTHER **SAFETY CO-ORDINATOR'S SYSTEM**

OC8.6.1 The carrying out of the test may affect **Safety Precautions** on **RISSPs** or work being carried out which does not require a **RISSP**. Testing can, for example, include the application of an independent test voltage. Accordingly, where the **Requesting Safety Co-ordinator** wishes to authorise the carrying out of such a test to which the procedures in OC8.6 apply he may not do so and the test will not take place unless and until the steps in (a)-(c) below have been followed and confirmation of completion has been recorded in the respective **Safety Logs**:

(a) confirmation must be obtained from the **Implementing Safety Co-ordinator** that:

(i) no person is working on, or testing, or has been authorised to work on, or test, any part of its **System** or another **System(s)** (other than the **System** of the **Requesting Safety Co-ordinator**) within the points of **Isolation** identified on the **RISSP** form relating to the test which is proposed to be undertaken, and

(ii) no person will be so authorised until the proposed test has been completed (or cancelled) and the **Requesting Safety Co-ordinator** has notified the **Implementing Safety Co-ordinator** of its completion (or cancellation);

(b) any other current **RISSPs** which relate to the parts of the **System** in which the testing is to take place must have been cancelled in accordance with procedures set out in ~~OC8.5.6;~~OC8.5.5;

(c) the **Implementing Safety Co-ordinator** must agree with the **Requesting Safety Co-ordinator** to permit the testing on that part of the **System** between the points of **Isolation** identified in the **RISSP** associated with the test and the points of **Isolation** on the **Requesting Safety Co-ordinator's System**.

OC8.6.2 (a) The **Requesting Safety Co-ordinator** will inform the **Implementing Safety Co-ordinator** as soon as the test has been completed or cancelled and the confirmation shall be recorded in the respective **Safety Logs**.

(b) When the test gives rise to the removal of **Earthing** which it is not intended to re-apply, the relevant **RISSP** associated with the test shall be cancelled at the completion or cancellation of the test in accordance with the procedure set out in either ~~OC8.5.6 or OC8.5.7.~~OC8.5.5 or OC8.5.6. Where the **Earthing** is re-applied following the completion or cancellation of the test, there is no requirement to cancel the relevant **RISSP** associated with the test pursuant to this OC8.6.2.

OC8.7 EMERGENCY SITUATIONS

OC8.7.1 There may be circumstances where **Safety Precautions** need to be established in relation to an unintended electrical connection or situations where there is an unintended risk of electrical connection between the **NGC Transmission System** and a **User's System**, for example resulting from an incident where one line becomes attached or unacceptably close to another.

OC8.7.2 In those circumstances, if both **NGC** and the respective **User** agree, the relevant provisions of OC8.5 will apply as if the electrical connections or potential connections were, solely for the purposes of this OC8, a **Connection Point**.

OC8.7.3 (a) The relevant **Safety Co-ordinator** shall be that for the electrically closest existing **Connection Point** to that **User's System** or such other local **Connection Point** as may be agreed between **NGC** and the **User**, with

discussions taking place between the relevant local **Safety Co-ordinators**. The **Connection Point** to be used shall be known in this OC8.7.3 as the "relevant **Connection Point**".

(b) The **Local Safety Instructions** shall be those which apply to the relevant **Connection Point**.

(c) The prefix for the **RISSP** will be that which applies for the relevant **Connection Point.**

OC8.8 SAFETY PRECAUTIONS RELATING TO WORKING ON EQUIPMENT NEAR TO THE HV SYSTEM

OC8.8 applies to the situation where work is to be carried out at a **User's Site** or a **NGC Site** (as the case may be) on equipment of the **User** or **NGC** as the case may be, where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System**. It does not apply to other situations to which OC8 applies. In this part of OC8, a **Proximity Permit for Work** is to be used, rather then the usual **RISSP** procedure, given the nature and effect of the work, all as further provided in the OC8.8.

OC8.8.1 Agreement of **Safety Precautions**

OC8.8.1.1 The **Requesting Safety Co-ordinator** who requires **Safety Precautions** on another **System(s)** when work is to be carried out at a **User's Site** or a **NGC Site** (as the case may be) on equipment of the **User** or **NGC**, as the case may be, where the work or equipment is near to **HV Apparatus** on the **Implementing Safety Co-ordinator's System** will contact the relevant **Implementing Safety Co-ordintor(s)** to agree the Location of the **Safety Precautions** to be established. This agreement will be recorded in the respective **Safety Logs**.

OC8.8.1.2 It is the responsibility of the **Implementing Safety Co-ordinator** to ensure that adequate **Safety Precautions** are established and maintained, on his and/or another **System** connected to his **System**, to enable **Safety From The System** to be achieved for work to be carried out at a **User's Site** or a **NGC Site** (as the case may be) on equipment which is to be identified in the relevant part of the **Proximity Permit for Work** where the work or equipment is near to **HV Apparatus** of the **Implementing Safety Co-ordinator's System** specified by the **Requesting Safety Co-ordinator**. Reference to another **System** in this OC.8.8.1.2 shall not include the **Requesting Safety Co-ordinator's System.**

OC8.8.1.3 In the event of disagreement

In any case where the **Requesting Safety Co-ordiantor** and the **Implementing Safety Co-ordinator** are unable to agree the **Location** of the **Isolation** and (if requested) **Earthing**, both shall be at the closest available points on the infeeds to the **HV Apparatus** near to which the work is to be carried out as indicated on the **Operation Diagram**.

OC8.8.2 Implementation of **Isolation and Earthing**

OC8.8.2.1 Following the agreement of the **Safety Precautions** in accordance with OC8.8.1 the **Implementing Safety Co-ordinator** shall then establish the agreed **Isolation** and (if required) **Earthing**.

0C8.8.2.2 The **Implementing Safety Co-ordinator** shall confirm to the **Requesting Safety Co-ordinator** that the agreed **Isolation** and (if required) **Earthing** has been established.

OC8.8.2.3 The **Implementing Safety Co-ordiantor** shall ensure that the established **Safety Precautions** are maintained until requested to be removed by the relevant **Requesting Safety Co-ordinator**.

OC8.8.3 **Proximity Permit for Work** Issue Procedure

OC8.8.3.1 Where **Safety Precautions** on another **System(s)** are being provided to enable work to be carried out at a **User's Site** or **NGC Site** (as the case may be) on equipment where the work or equipment is in proximity to **HV Apparatus** of the **Implementing Safety Co-ordinator**, before any work commences they must be recorded by a **Proximity Permit for Work** being issued. The **Proximity Permit for Work** shall identify the **Implementing Safety Co-ordinator's HV Apparatus** in proximity to the required work

OC8.8.3.2 Once the **Safety Precautions** have been established (in accordance with OC8.8.2), the **Implementing Safety Co-ordinator** shall agree to the issue of the **Proximity Permit for Work** with the site representative of the **Requesting Safety Co-ordinator's Site**. The **Implementing Safety Co-ordinator** will inform the **Requesting Safety Co-ordinator** of the **Proximity Permit for Work** identifying number.

OC8.8.3.3 The site representative of the **Implementing Safety Co-ordinator** shall then issue the **Proximity Permit for Work** to the site representative of the **Requesting Safety Co-ordinator**. The **Proximity Permit for Work** will in the section dealing with the work to be carried out, be completed to identify that the work is near the **Implementing Safety Co-ordinator's HV Apparatus.** No further details of the **Requesting Safety Co-ordinator's** work will be recorded, as that is a matter for the **Requesting Safety Co-ordinator** in relation to his work.

OC8.8.3.4 The **Requesting Safety Co-ordinator** is then free to authorise work in accordance with the requirements of the relevant internal safety procedures which apply to the **Requesting Safety Co-ordinator's Site**. This is likely to involve the issue of safety documents or other relevant internal authorisations.

OC8.8.4 **Proximity Permit for Work** Cancellation Procedure

OC8.8.4.1 When the **Requesting Safety Co-ordinator** decides that **Safety Precautions** are no longer required, he will contact the relevant **Implementing Safety Co-ordinator** to effect cancellation of the associated **Proximity Permit for Work**.

OC8.8.4.2 The **Requesting Safety Co-ordinator** will inform the relevant **Implementing Safety Co-ordinator** of the **Proximity Permit for Work** identifying number, and agree that the **Proximity Permit for Work** can be cancelled. The cancellation is then effected by the site representative of the **Requesting Safety Co-ordinator** returning the **Proximity Permit for Work** to the site representative of the **Implementing Safety Co-ordinator**.

OC8.8.4.3 The **Implementing Safety Co-ordinator** is then free to arrange the removal of the **Safety Precautions**, the procedure to achieve that being entirely an internal matter for the party the **Implementing Safety Co-ordinator** is representing.

~~OC8.8~~OC8.9 LOSS OF INTEGRITY OF **SAFETY PRECAUTIONS**

~~OC8.8.1~~OC8.9.1 In any instance when any **Safety Precautions** may be ineffective for any reason the relevant **Safety Co-ordinator** shall inform the other **Safety Co-ordinator(s)** without delay of that being the case and, if requested, of the reasons why.

~~OC8.9~~OC8.10 SAFETY LOG

~~OC8.9.1~~OC8.10.1 **NGC** and **Users** shall maintain **Safety Logs** which shall be a chronological record of all messages relating to safety co-ordination under **OC8** sent and received by the **Safety Co-ordinator(s)**. The **Safety Logs** must be retained for a period of not less than one year.

OC8 - APPENDIX A

[Not shown]

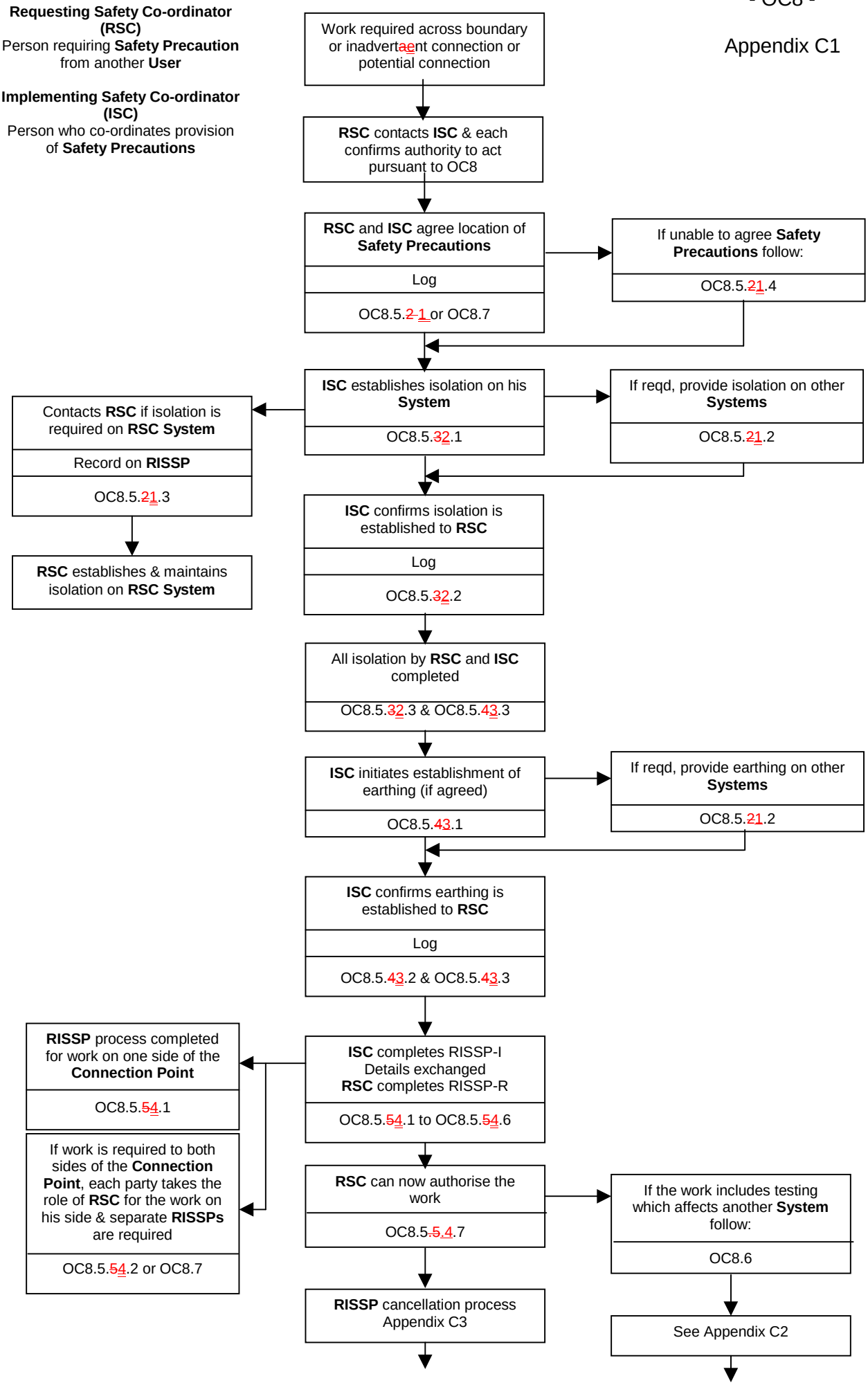
OC8 - APPENDIX B

[Not shown]

RISSP ISSUE PROCESS

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

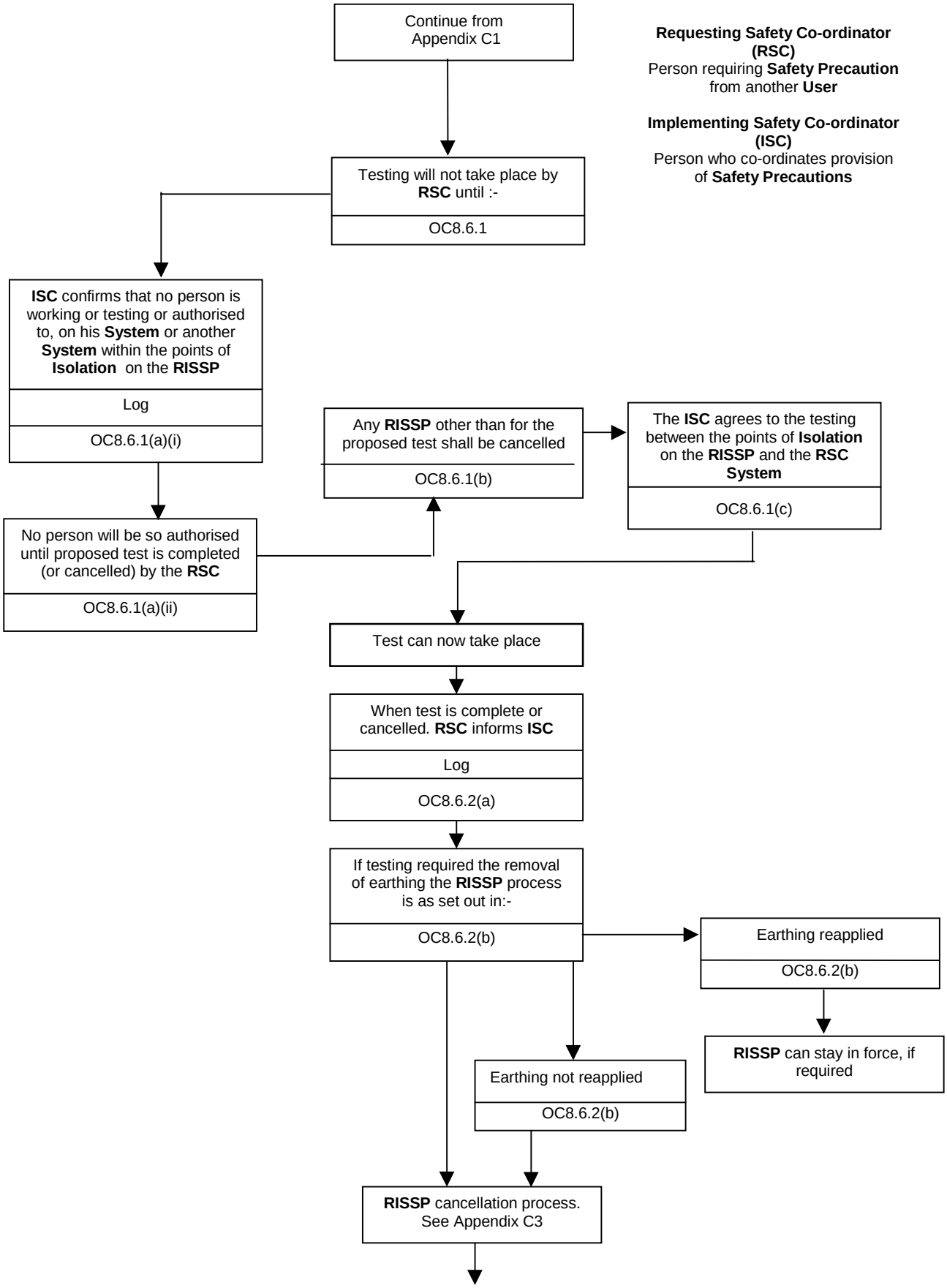
Implementing Safety Co-ordinator (ISC)
Person who co-ordinates provision of **Safety Precautions**



TESTING PROCESS

Where testing affects another Safety Co-ordinator's System

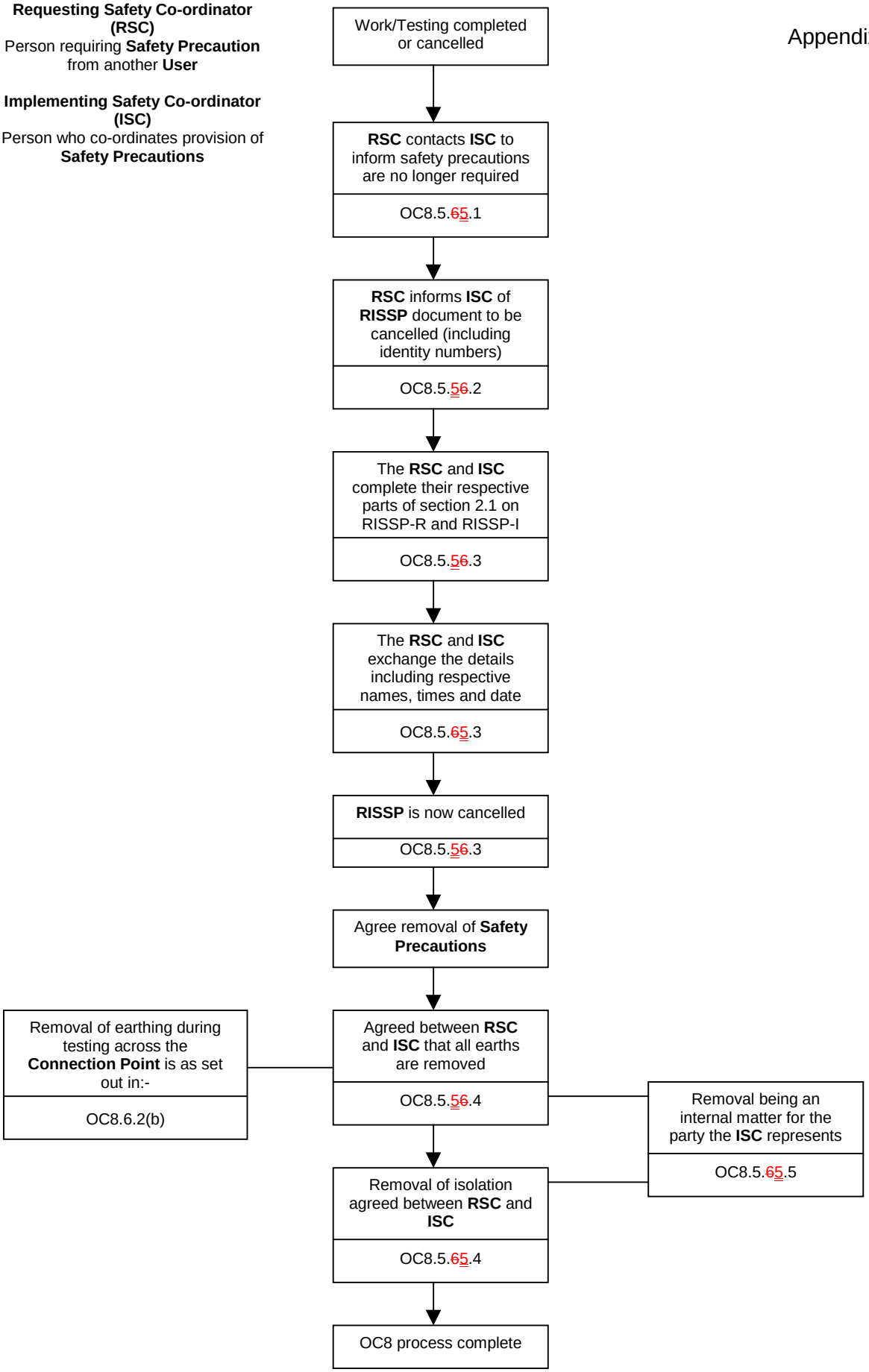
Appendix C2



RISSP CANCELLATION PROCESS

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**



PROCESS FOR WORKING NEAR TO SYSTEM EQUIPMENT

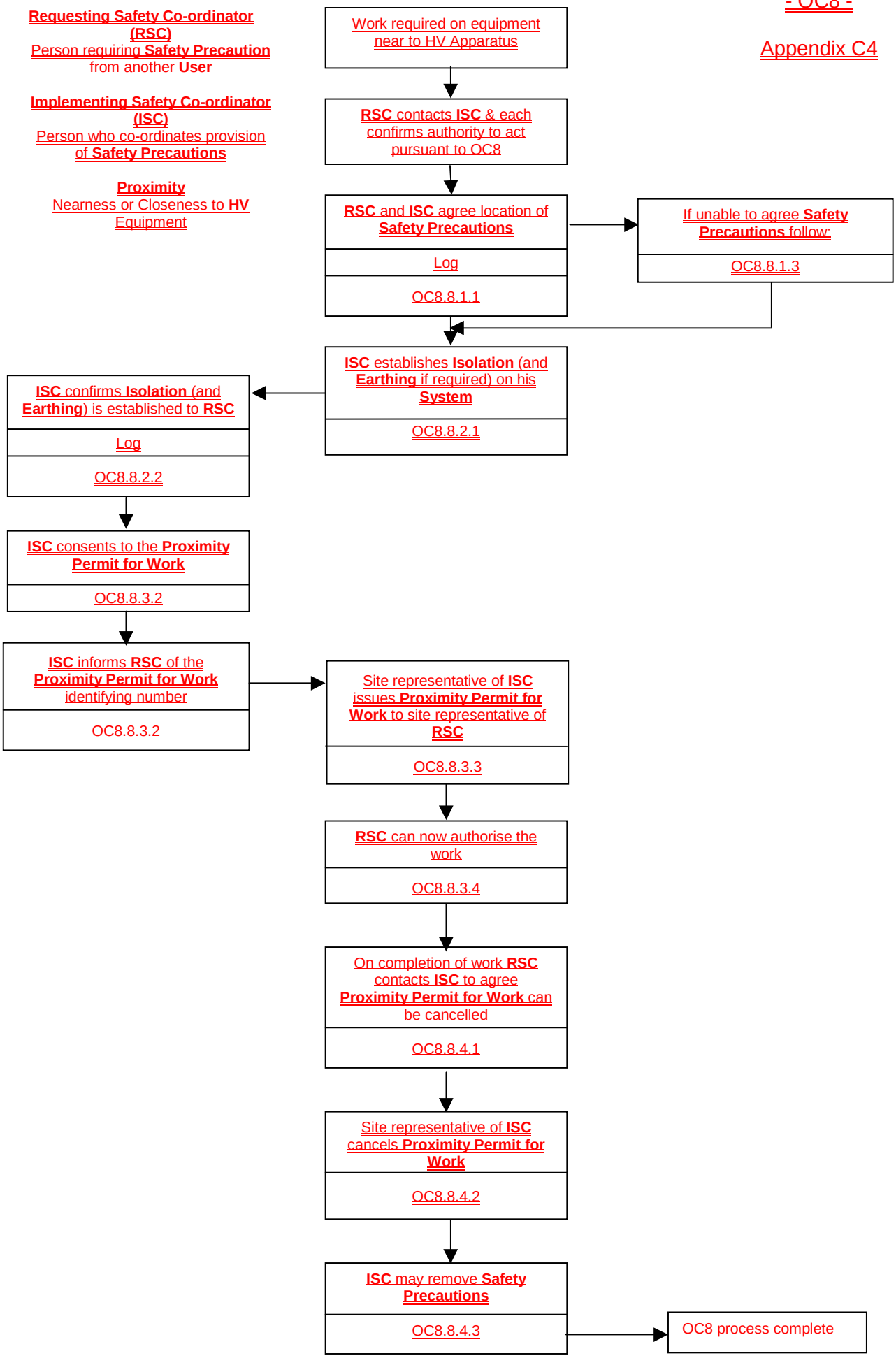
- OC8 -

Appendix C4

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**

Proximity
Nearness or Closeness to **HV** Equipment



Not shown

National Grid

OC8 APPENDIX E

[Form of NGC Permit for Work]

No.

PERMIT FOR WORK

1. **Location**……..
Equipment Identification……..
…….. ……

Work to be done
……
……

3. **Precautions taken to achieve Safety from the System**
Points of Isolation ……..
……
……..
Primary Earths……
……
……
……
Actions taken to avoid **Danger** by draining, venting, purging and containment or dissipation of stored energy*
……
……
Further precautions to be taken during the course of the work to avoid **System** derived hazards* ……..
……
……

3. Precautions that may be varied*……..
……
……
……
……
……
……

4. Preparation
Control Person(s) (Safety) giving Consent _____ **Key Safe** number* _____

State whether this **Permit for Work** must be personally retained yes ☐ no ☐

Signed _____ Time _____ Date _____
Senior Authorised Person

5. Issue & Receipt

Key Safe Number* _____ **Safety Keys** (No. off)* _____

Earthing Schedule Number* _____ Portable **Drain earths** (No. off)* _____

Recommendations for **General Safety** Report Number* _____ **Approved** (ROMP)#/**Card Safe**#/ Procedure Number* _____

Circuit Identification – Colours/ Symbols* _____ Flags (No. off)* ☐ Wristlets (No. off)* ☐

Issued (Signed) _____
Senior Authorised Person

Received (Signed) _____ Time _____ Date _____
Competent Person

Name (Block letters) _____ Company _____

delete as appropriate *write N/A if not applicable February 1995

< End of OC8 >