Good Industry 'Best Practice' Safety Co-ordinator Guide

(Issue 2 – 26/07/2010)

Recommended Safety Co-ordinator Training

(Presentation & Guidance Notes)

Important Note:

- This package has been developed by a multi user group and maybe used as a training guide for Generators, DNOs & TL's.
- Users have the responsibility to provide competent trained individuals to carry out their company's Grid Code responsibilities.
- It is the Users responsibility to interpret this guidance to meet their own company's requirements.
- This guidance is based on the Grid Code **Issue 4 Revision 1 – 24th June 2009**
- Any suggestive changes or modifications to this guide maybe submitted to: **box.NOC_strategy_training@uk.ngrid.com**

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Glossary of Terms

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- **Control Person (CP); being one of the following:**

  CP(O): (Operations): A suitably qualified and trained person, nominated by an appropriate officer of his / her employing company to be responsible for the co-ordination of Operational activities at their connection point.

  CP(S): (Safety): A suitably qualified and trained person, nominated by an appropriate officer of his / her employing company to be responsible for the co-ordination of Safety Management activities at their connection point.

- **CTC: Control Transfer Certificate**; A temporary agreement between two companies that allows the transfer of a circuit/s or part of a circuit/s between a Control Person (Safety) and a Control Person (Operations).

- **DOA**: **Delegation of Authority**. A contractual agreement between two companies that allows one Control Person to delegate control of defined equipment to the Control Person of another company for establishing safety precautions. Referred to as an Agency Agreement or Operational Arrangements. Refer to the DOA section for further clarity on authorisations.

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Continued…

- **DNO: Distribution Network Operator** (formerly a Regional Electricity Company in England & Wales)
- **ENCC:** Electricity National Control Centre (National Grid control Room that deals specifically with Operational Control of the NG system).
- **HV: High Voltage**. Typically above a 1000 volts
- **IGDD: Isolation Gas Density Dependant –** Isolating devices that are reliant upon SF6 as an gas insulation medium are recognised within OC8.
- **NG:** National Grid company
- **NOC**: Network Operations Centre (National Grid control Room that deals specifically with safety management of the NG system)
- **OC8:** That part of the Grid Code defining safety co-ordination across control boundaries.

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Continued…

- **OC8A & OC8B:** OC8A operates in England & Wales. OC8B operates in Scotland

- **RISSP: Record of Inter System Safety Precautions**; An official record of guaranteed safety precautions that are being held between two safety co-ordinators from two different companies.

- **Safety Document:** A safety document of a design that is used to guarantee safety precautions, namely a Sanction or a Permit.
  - **Sanction:** A company specific safety document that allows work/ testing & removal of earthing devices.
  - **Permit:** A company specific safety document that allows work/ testing but does not permit the removal of earthing devices.

- **Safety Co-ordinator:** A suitably qualified and trained person, nominated by an appropriate officer of his / her employing company to be responsible for the co-ordination of safety precautions at their connection point as defined in OC8 of the Grid Code

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- **SRS: Site Responsibility Schedule**; A schedule that defines the Ownership, Site Manager, Safety Rules, Control persons and Maintenance for all equipment on the named substation.

- **STC: System Operator Transmission Code** which defines arrangements with National Grid & the Scottish Transmission Owners

- **TL:**

  Transmission Licence; A Licence granted under section 6(1)(b) of The Electricity Act 1989.

  Transmission Licensee; Any Onshore Transmission Licensee or Off shore Transmission Licensee.

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Objectives

This presentation aims to clarify the role of the Safety Co-ordinator for safety management across control boundaries.

Objectives provide an understanding of;

- The minimum standards required.
- Enacting the role of a Safety Co-ordinator.
- Control Transfer Certificates (CTC).
- Delegations of Authority (DOA).
- Site Responsibility Schedules (SRS).
- OC8 of the Grid Code and the RISSP process.
- Equipment being added or removed from the system.

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Objectives

When enacting the role of the Safety Co-ordinator it is important that you do so in a professional manner by following the correct procedures, and discharging the duties in such a way as to instil mutual confidence and respect.

It's important to get it right!

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Objectives

Using this guidance, companies are encouraged to set their own standards for the 'Training and Authorisation' of Safety Co-ordinators within their own Safety Management Systems and Procedures.

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Recommended Minimum Standards

- Safety Co-ordinator duties should be recognised as a key function by all parties.
- Appropriate training shall be given, maintained and supported by the appropriate evidence.
- Responsibilities are to be discharged in a responsible, professional manner.

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Recommended Minimum Standards

When enacting the role of Safety Co-ordinator at any User interface the responsibilities are;

- Consulting with the appropriate Safety Co-ordinators to agree, initiate and record those actions necessary to establish and maintain safety precautions.

- This shall include safety management on or in proximity to equipment/ apparatus which is interconnected across the control boundary.

- Implementing the agreed procedure for the RISSP process.

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Interface Boundaries

Control, Safety Rule & Ownership Boundaries

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Interface Boundaries

Site Responsibility Schedules Define for the Assets:-

- The Owner
- The Site Manager
- Safety Rules & Safety Co-ordinator
- Operational Procedures & Control or Other Responsible Engineer
- Statutory inspections / maintenance responsibilities
- Remarks/ Notes that define any exceptions

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Continued…

Site Responsibility Schedules:

- Will define the Control Boundary.
- Will define the Safety Rule Boundary.
- Will define the Ownership Boundary.
- Will define the Maintenance Boundary.

The Safety Co-ordinator's Role is to co-ordinate safety activities across the Control Boundary. The site responsibility schedule will identify where these boundaries are!

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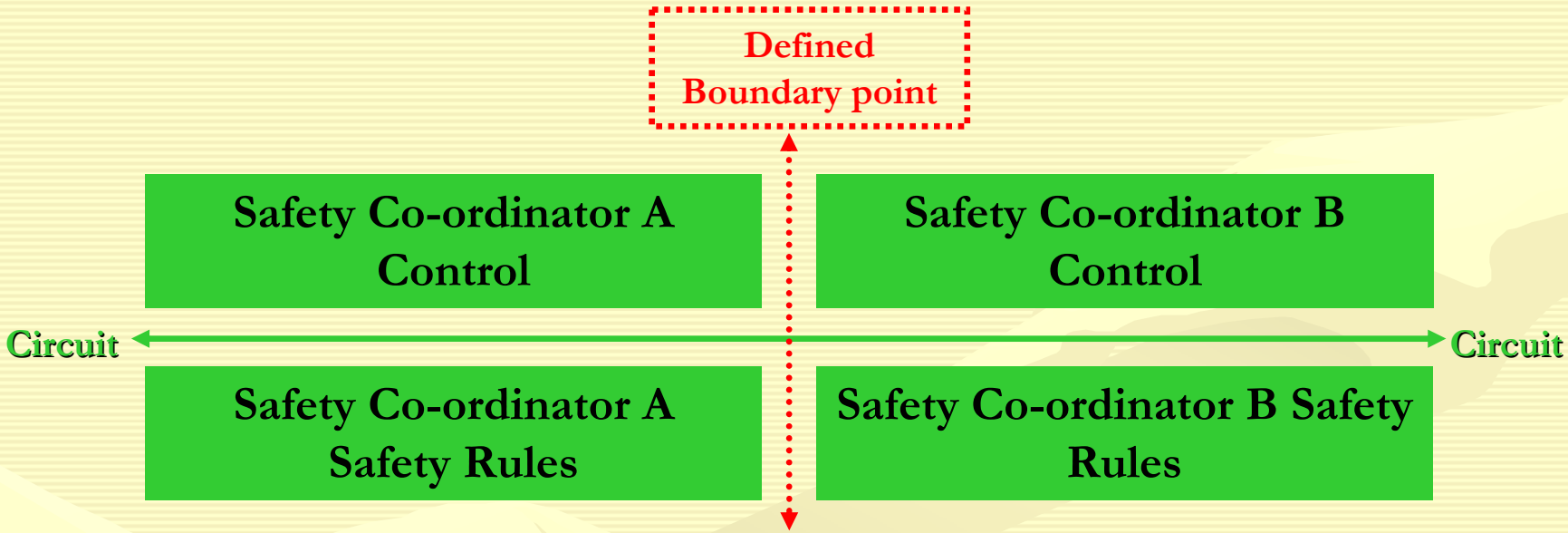
Interface Boundaries

Control & Safety Rule Boundaries



The Control and Safety rule boundaries may be one and the same.

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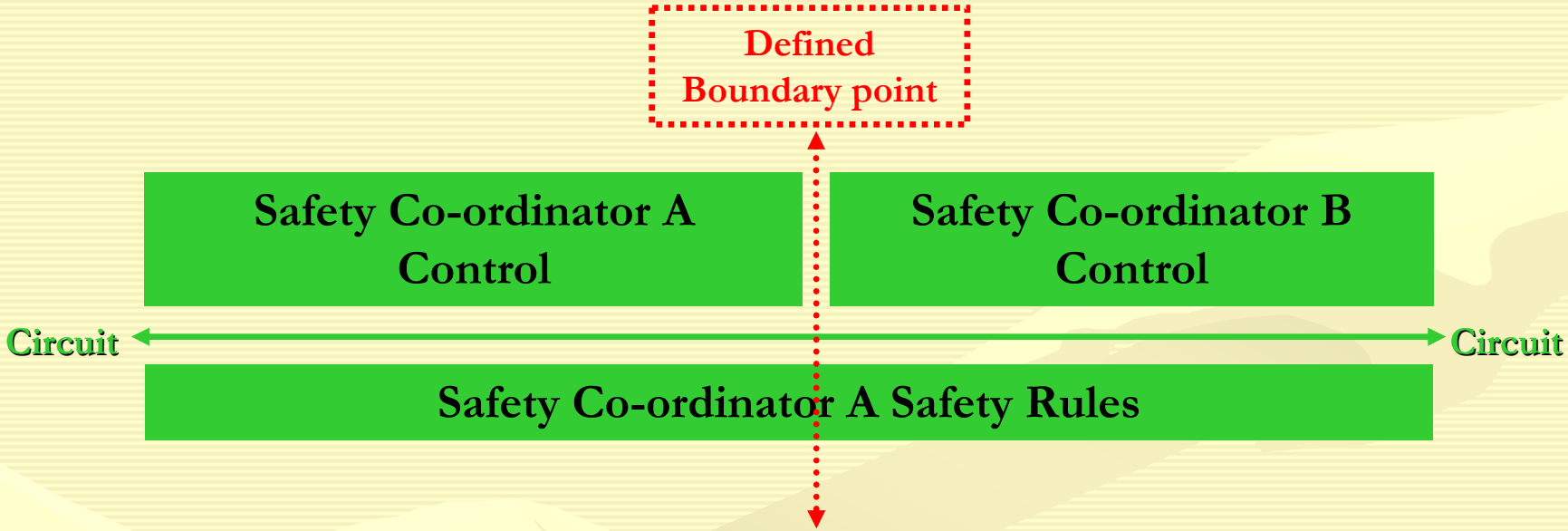
Interface Boundaries

Control & Safety Rule Boundaries



The same safety rules may be in force both sides of the boundary.

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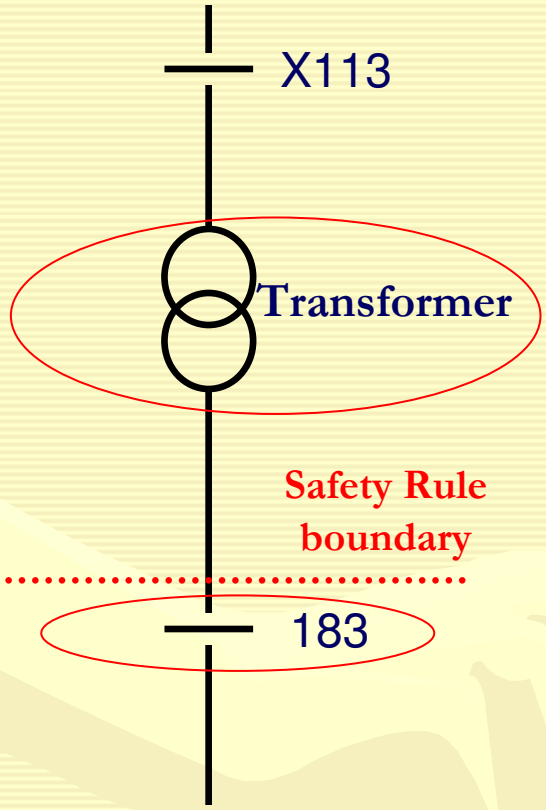
Safety Rule Boundaries



Safety Rule Boundary Example;

- Work is required on the Transformer and isolator 183.
- The TL is the Control person (safety) for both assets.
- The TL would consent to safety documents on both the Transformer and 183. However, the safety document issued on 183 will be issued under the other party's safety rules (due to the safety boundary).

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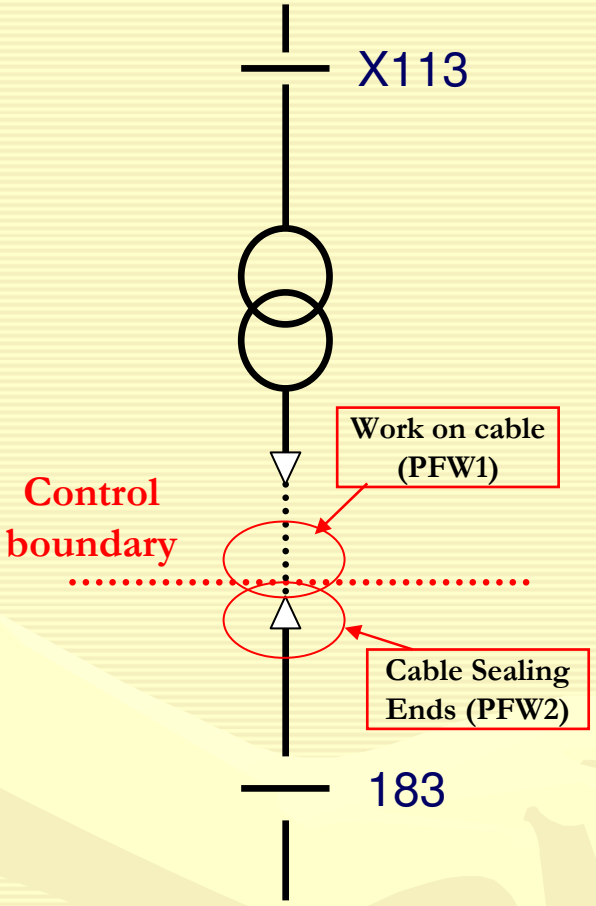
Control Boundaries



Complex Control Boundary Example;

- Work is required on the cable & Cable sealing ends at the control boundary.
- As two Safety documents are required (one for work on the cable and one for the cable sealing ends), then 4 RISSP's would be needed.
- As both users wish to issue a PFW, then each party will need to request and implement a RISSP to use on their safety documentation.
- One Safety Document will be consented to by the TL (for the Cable) – PFW1, the second by the other party for work on the Cable sealing ends - PFW2.

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Control Transfer Certificate

The CTC process

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The CTC Process

The process of Control Transfer Certificate (CTC) exchange is not covered by the Grid code. This section has been added for the benefit of those users that employ National Grid for safety management (under a UKES contract agreement).

Under commercial contracts set up with National Grid, a company can transfer a circuit (or part of a circuit) under their operational control to National Grid: Network Operation Centre (NOC) to perform the role of the CP(S).

The means of establishing this transfer is via a Control Transfer Certificate (CTC).

In addition to the UKES contract agreement, NGET (NOC) will agree a Site Specific Agreement procedure which details the local CTC requirements.

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CTC boundaries

When the ‘zone of control’ has been transferred to the NOC (via the CTC process) a control boundary may still exist with the original ‘user’/ other ‘user’. This control boundary shall be managed in the normal way by using a RISSP (in accordance with the requirements of OC8A).

If the ‘user’ is carrying out maintenance on equipment for which they are the CP(S), the user may require a RISSP quoting precautions on equipment they have previously transferred to the NOC (under a CTC). Therefore the user will enact two separate roles, one as the CP(O) (initially for the CTC) and the other as the CP(S) (for the RISSP).

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CTC – Documentation

The following slides identify the sequence of events required to issue and cancel a CTC;

Note: The CTC form used within the slides are generic forms and slight variations may exist between companies.

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CTC – Control Transfer Certificate Issue

- The CP(O) (DNO/Generator/user) shall discuss the equipment to be transferred to the NG CP(S). Reference should be made to the Site Specific Procedure which outlines the agreed process.

- The CP(O) shall provide details of the system that will be transferred under the agreement of the CTC. These details shall be formally recorded on the CTC form. All circuits shall be formally identified including the site location and specific circuit name/s.

- The CTC process may include the release multiple circuits under the same CTC form.

- Careful reference must be made as to the state of the boundary equipment being transferred, this must include the state and condition: i.e. X294 is Open. Such details shall be entered in the "Points at which the system is isolated" or "Points at which the system shall be isolated" depending upon its present state.

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CTC – Control Transfer Certificate Issue

- Further reference shall be made as to the state of the equipment being transferred within the CTC boundary, this must include the state and condition of all movable equipment other than earthing devices and the equipment noted in the above sections: i.e. Circuit Breakers and isolators.

- Once both Control Persons have agreed the details, the CTC is signed and time stamped by both parties (usually electronically over the phone – or as detailed within the Site Specific Agreement).

- Control of that part of the system is now transferred over from the user CP(O) to the NG CP(S). The NG CP(S) may then carryout the application of safety precautions to the circuit without further reference to the CP(O).

CTC Issue:

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HV Equipment ID: Specifies the site/location and identity of the part of the system being transferred. This must be defined geographically, reference to Operational Diagrams may be required to clarify.

Points at which the system is isolated: Boundary isolators that are in the open position. IGDD shall be quoted where the isolator relies on SF6 gas as its insulating medium

Points at which the system shall be isolated: Boundary isolators that are in the open position. IGDD shall be quoted where the isolator relies on SF6 gas as its insulating medium

Location of boundaries with other users: State the Substation name, other users name and associated circuit reference – i.e. National Grid ENCC, RBB2, XXXX 275kV S/S

State of equipment being transferred: Shall include CB's, Isolators etc. Also state if any trapped charge has been dissipated.

CTC document identifier.

Signature fields: includes CP(O), CP(S) and relative party names and time stamps.

National Grid

CONTROL TRANSFER CERTIFICATE

No. 12345 T

1. **HV EQUIPMENT** IDENTIFICATION AND **LOCATION**

XXXXXXX 400KV SUBSTATION:
A.NOTHER No1 CCT UP TO CONTROL BOUNDARY FENCE ADJACENT EARTH SWITCH X191A

2. CONTROL TRANSFER - **Control Person (Operation)** to **Control Person (Safety)**

Defined Limits

Points at which **System** is **Isolated**
XXXXXXX 400KV SUBSTATION:
A.NOTHER No1 CCT ISOLATORS: X194 & X196, BOTH ISOLATORS ARE IGDD

Points at which **System** shall be **Isolated***
N/A

Location of Boundary with other Users*
XXXXXXX 400KV SUBSTATION:
MBB1/ MBB2: NATIONAL GRID ENCC EAST

State of **Equipment** to be transferred
XXXXXXX 400KV SUBSTATION: A.NOTHER No1 CCT ISOLATOR X193 IS OPEN, CB X190 IS OPEN. TRAPPED CHARGE HAS BEEN DISSIPATED.

Transfer from J.Bloggs Located at GEN CO
Control Person (Operation)

Transfer to D.Michie Located at NATIONAL GRID
Control Person (Safety)

Time 10:00 Date 20/12/2009

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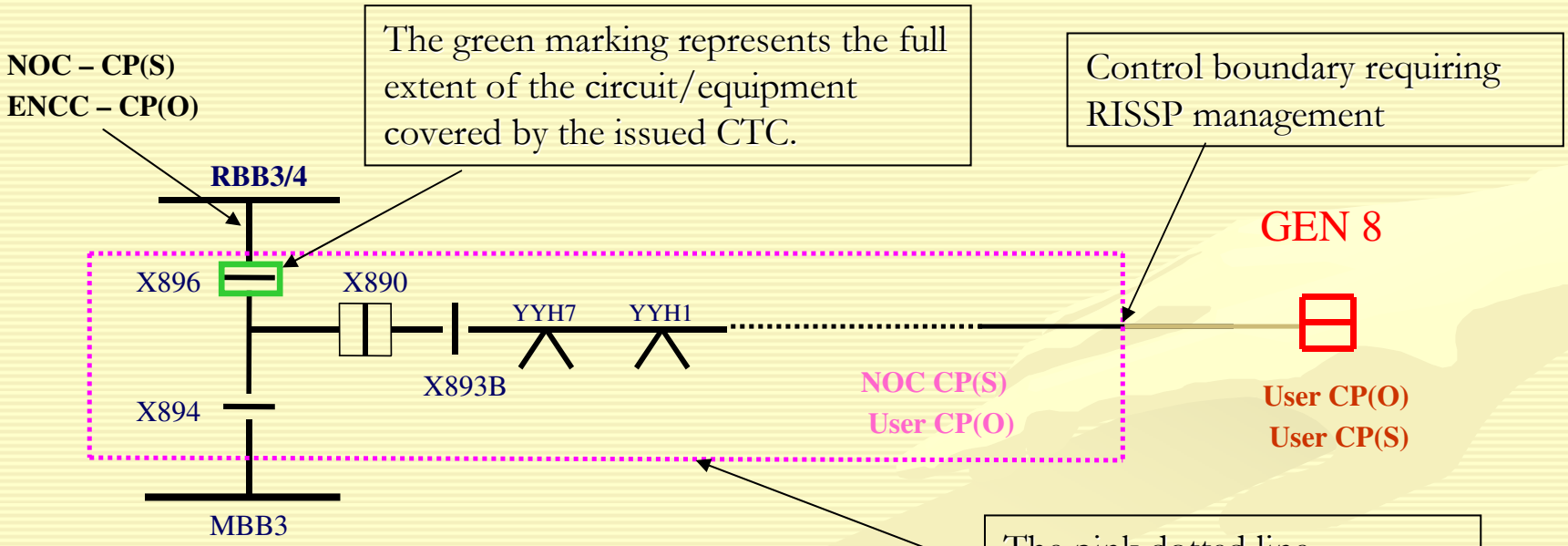
Example 1: National Grid work on RBB3/4



- Transfer control of X896 via CTC
- NOC instruct isolation on X896
- No RISSP required

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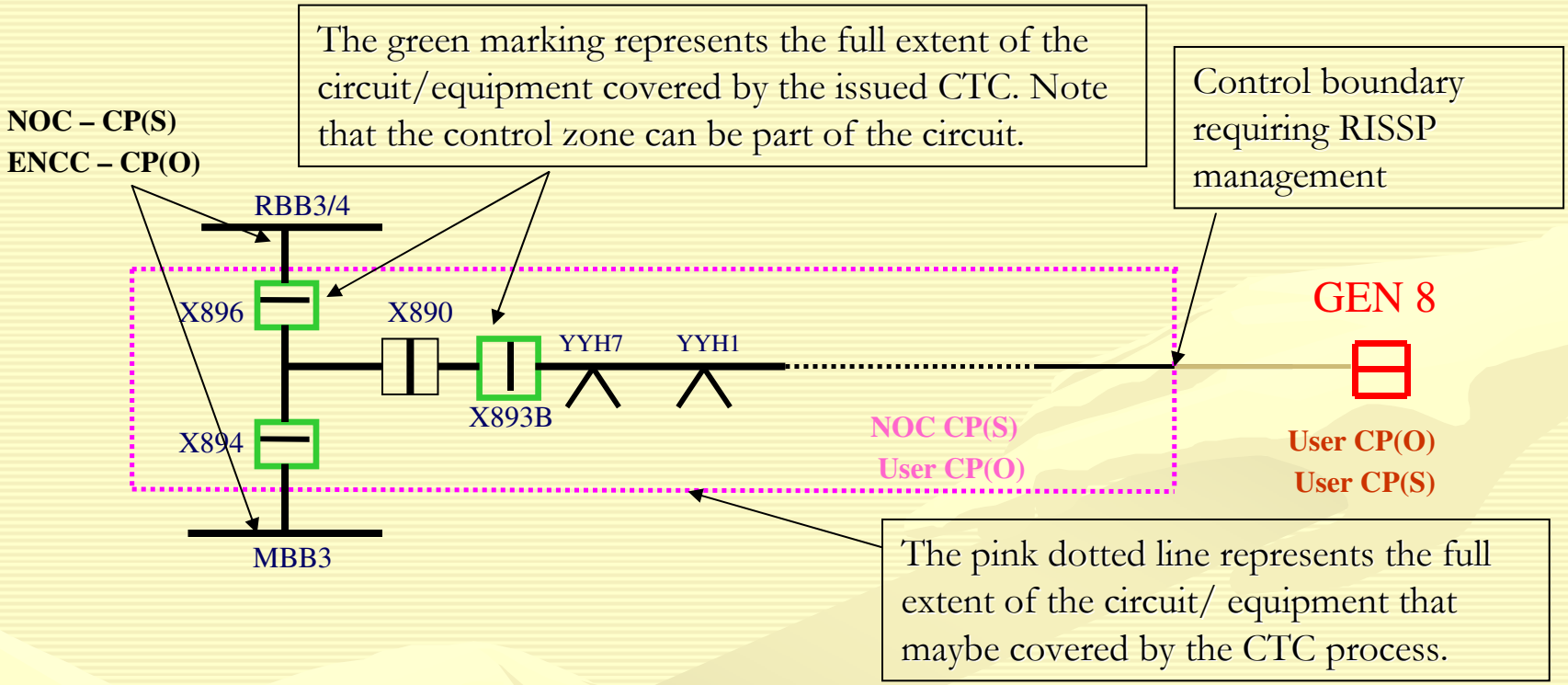
Example 2: Maintenance work on X890



- Transfer control of zone between X896, X894, X893B via CTC
- NOC instruct isolation and Earthing
- No RISSP required

Example 3:
NG work on tower YYH1 & X893A

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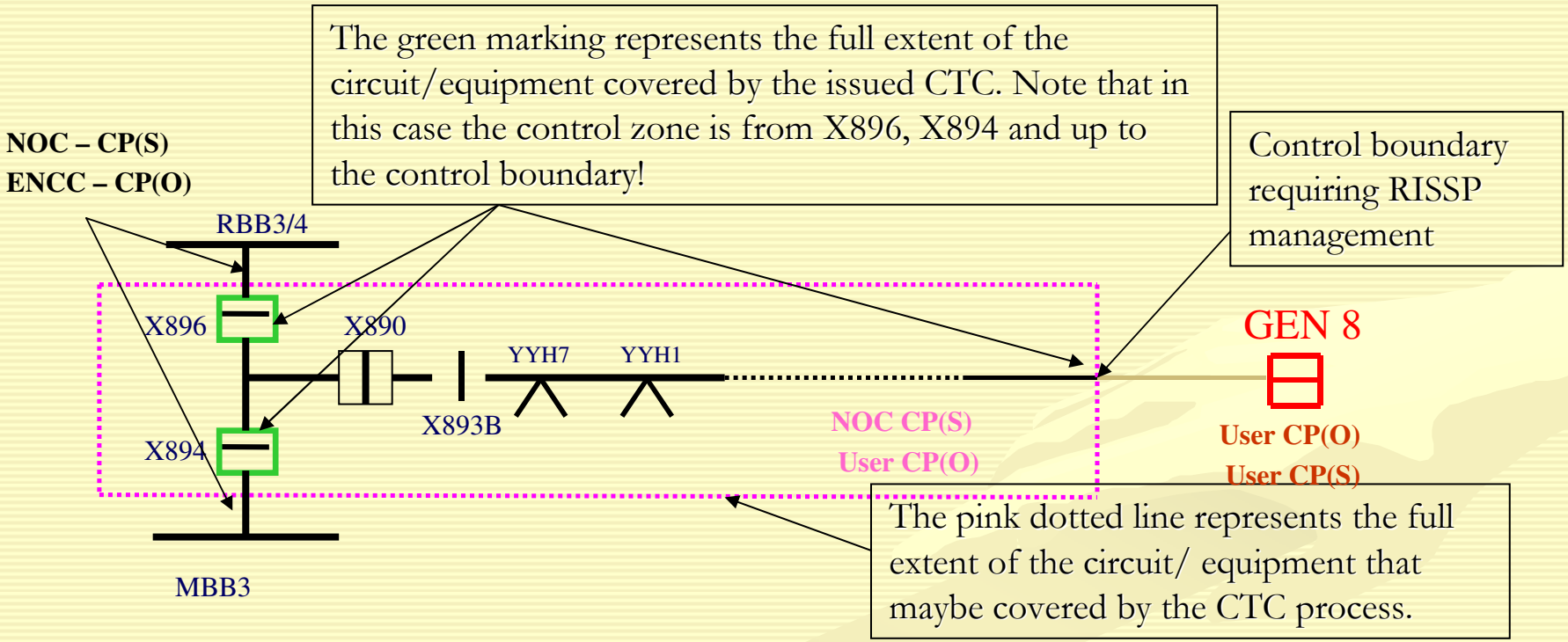

- Transfer control of of Zone between X896, X894 and up to control boundary
- Both Parties establish isolation and agree to Earthing
- National Grid request RISSP for work on YYH1
- User requests RISSP for work on X893A

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CTC – Control Transfer Certificate Cancellation

- The CP(S) (NG) will discuss the equipment to be transferred back to the CP(O) (DNO/Generator). Where necessary, reference should be made to the Site Specific Procedure which outlines the process.

- The CP(S) shall provide details of the system that will be transferred under the agreement. These details shall be formally recorded on the CTC form.

- Careful reference must be made as to the state of the equipment being transferred back to the CP(O). It is important to capture any changes in this section.

- Once both Control Persons have agreed the details, the CTC is signed and time stamped by both parties (usually electronically over the phone).

- Control of that part of the system is now transferred over from the CP(S) to the CP(O). The CP(O) may then carryout normal operational duties to this circuit without further reference to the CP(S).

CTC Cancellation:

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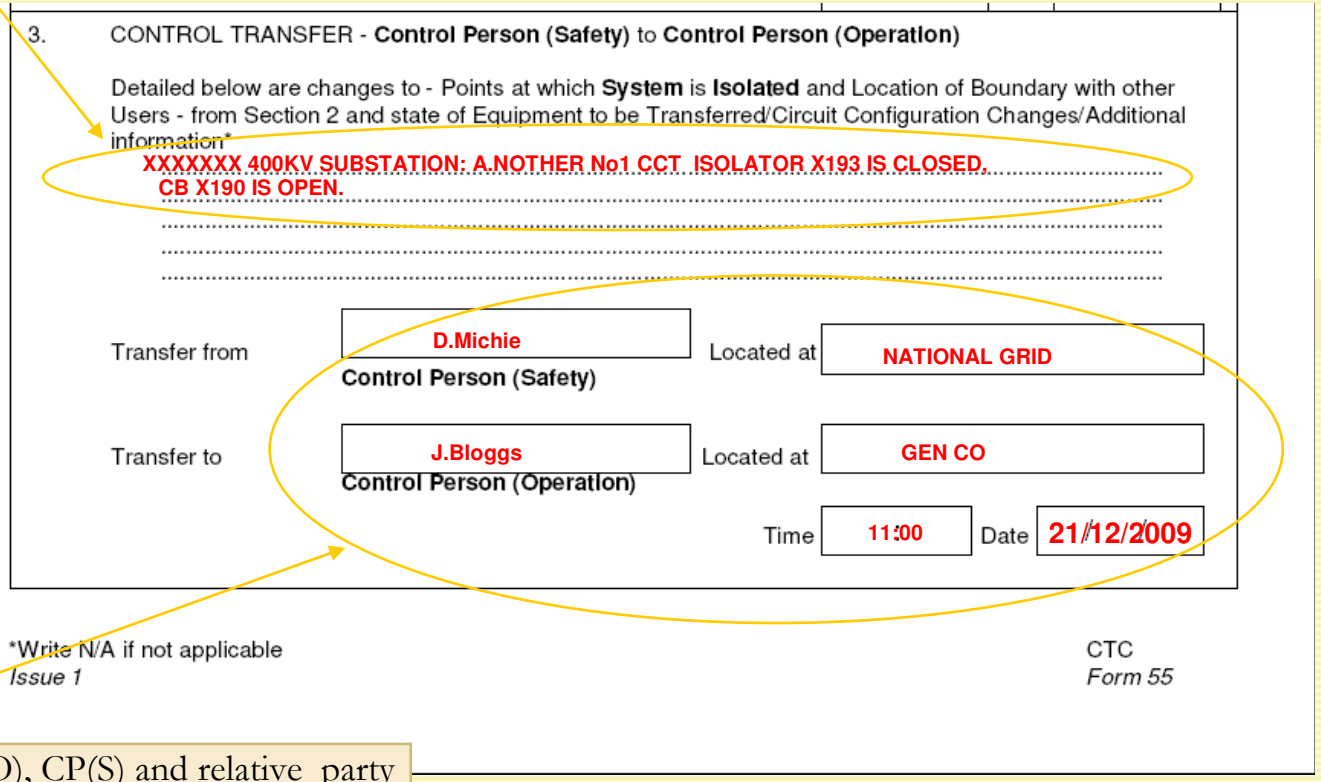
State of equipment being transferred: Includes the state of all equipment in the system being transferred back; including Circuit Breakers/ Disconnectors etc… Including the state: i.e. X190 is open.



3. CONTROL TRANSFER - **Control Person (Safety)** to **Control Person (Operation)**

Detailed below are changes to - Points at which **System** is **Isolated** and Location of Boundary with other Users - from Section 2 and state of Equipment to be Transferred/Circuit Configuration Changes/Additional information*

XXXXXXX 400KV SUBSTATION: A.NOTHER No1 CCT ISOLATOR X193 IS CLOSED.
CB X190 IS OPEN.

Transfer from: D.Michie — Located at: NATIONAL GRID
Control Person (Safety)

Transfer to: J.Bloggs — Located at: GEN CO
Control Person (Operation)

Time: 11:00 Date: 21/12/2009

*Write N/A if not applicable

Issue 1

CTC
Form 55

Signature fields: includes CP(O), CP(S) and relative party names and time stamps.

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OC8 / RISSP Philosophy

Grid Code OC8

(RISSP Procedure)

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OC8 / RISSP Philosophy

What is a RISSP?

Record of Inter - System Safety Precautions

RISSP – I (Implementing RISSP)

RISSP – R (Requesting RISSP)

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OC8 / RISSP Philosophy

Purpose of OC8:

- "OC8 specifies the standard procedures to be used for the co-ordination, establishment and maintenance of necessary safety precautions when work is to be carried out on or near the GB transmission system or the system of a user" -OC8.1.1.

- The Grid code OC8 specifies the method of achieving and maintaining safety when working on such equipment.

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OC8 / RISSP Philosophy

The Basic Principles:

The Safety Rules that each company operate specify that before work can be carried out on HV Equipment it must be:

- Dead.
- Isolated from the live system by points of isolation.
- Earthed between the point of isolation and point of work.
- Released for work by issue of a Safety Document.

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OC8 / RISSP Philosophy

Where safety precautions provided on one system are recorded by a RISSP across a control boundary, they may subsequently be used for the preparation of safety documents, subject to limitations on testing, without further reference.

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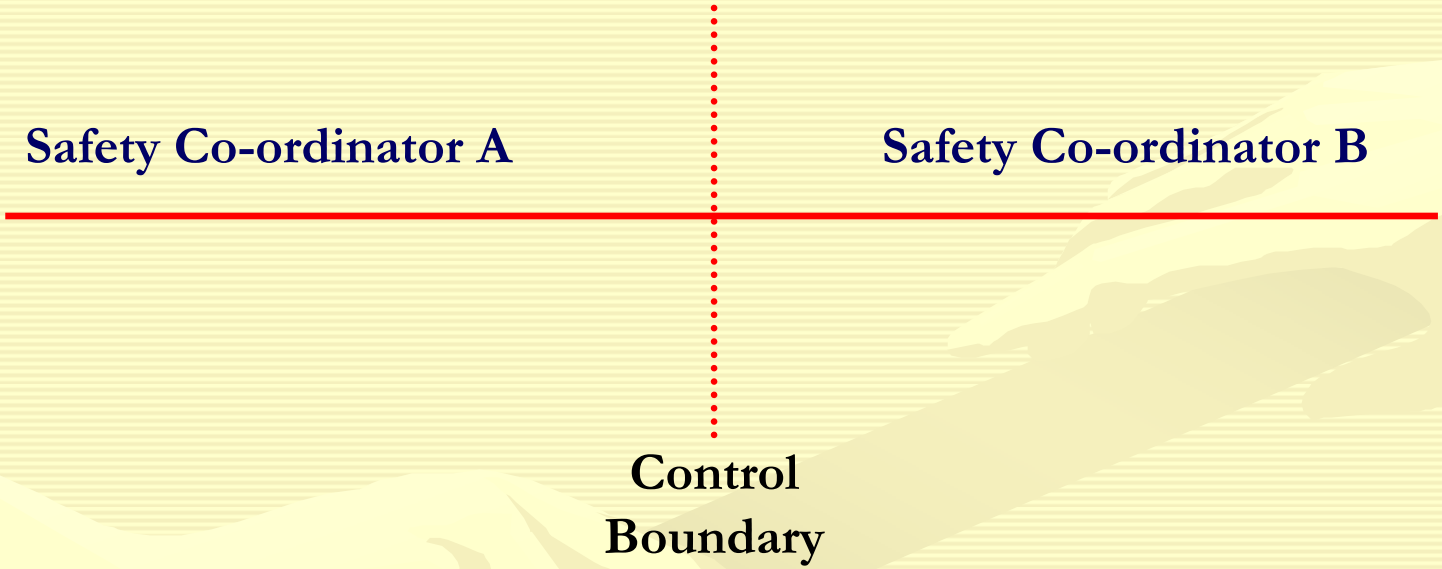
OC8 / RISSP Philosophy

Control Boundaries



There can only be two Safety Co-ordinators interfacing across a control boundary!

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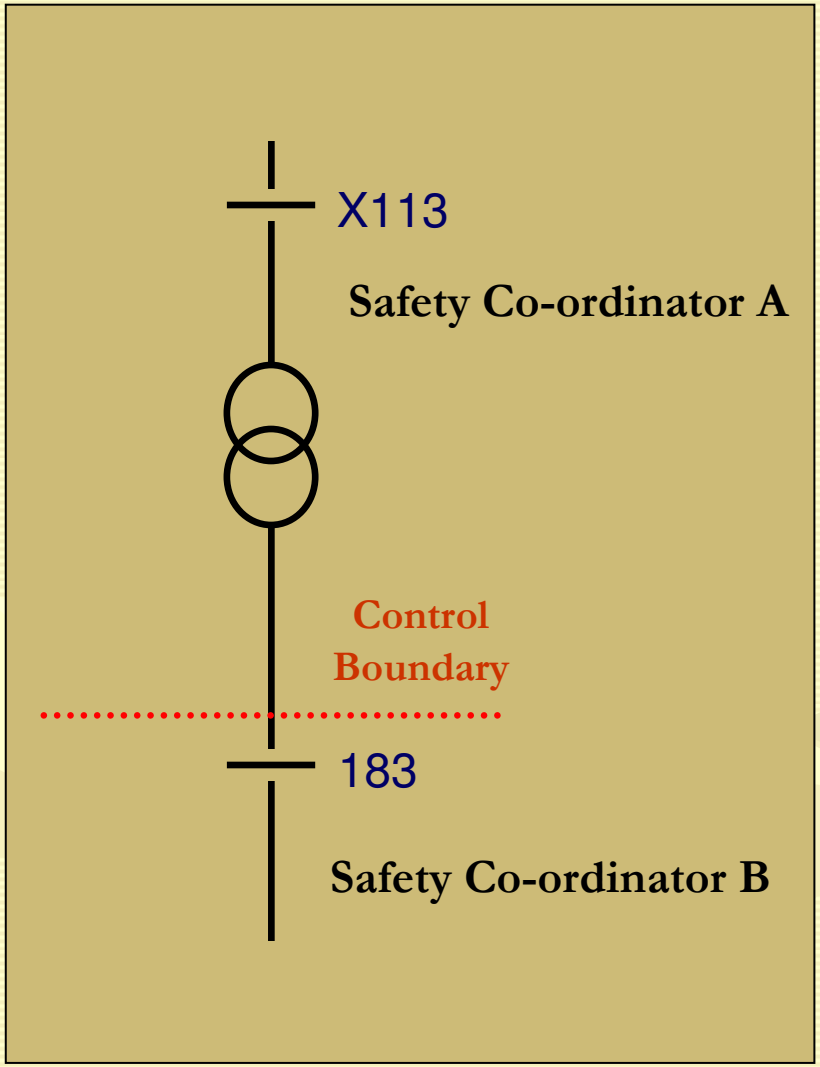
OC8 / RISSP Philosophy



Simple example;

Work is required on the 'Safety Co-ordinator A' Transformer.

'Safety Co-ordinator A' is unable to instruct all the required safety precautions; as 183 is beyond the control boundary.

To establish safety precautions on 183, formal communication with 'Safety Co-ordinator B' is required. A RISSP will be required to maintain the safety precaution established on 183.

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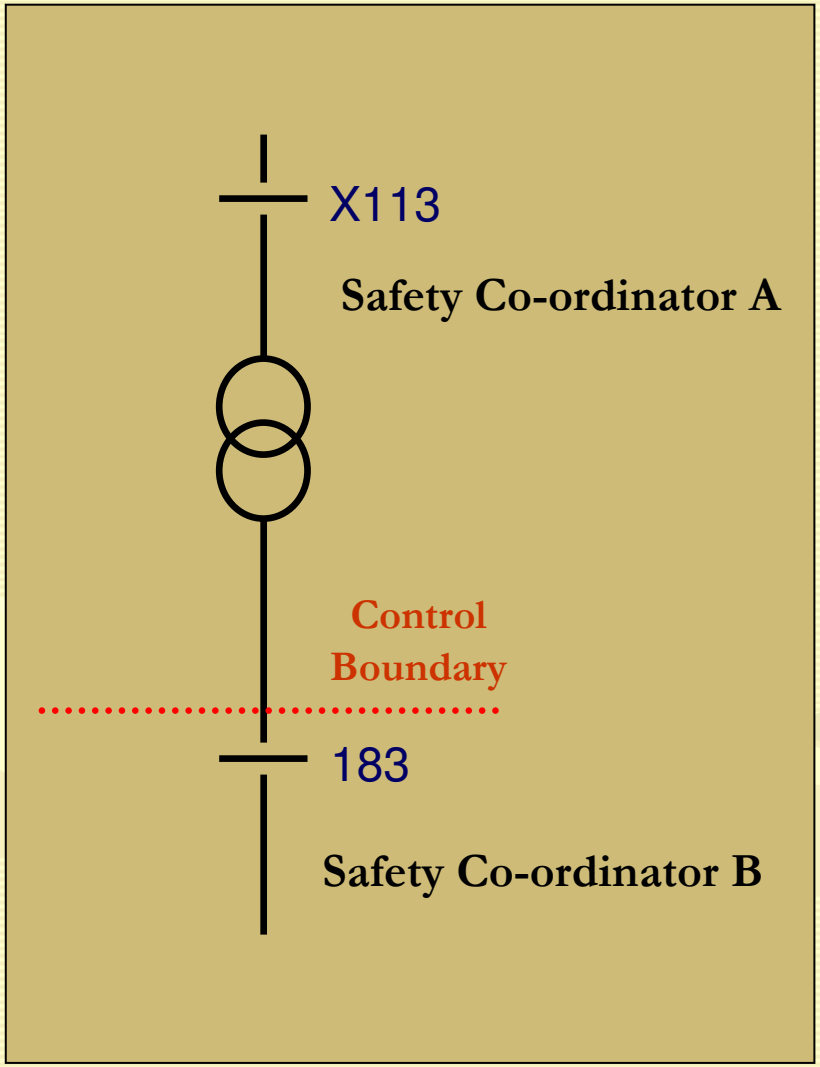
OC8 / RISSP Philosophy



Simple Example;

'Safety Co-ordinator A' enacts the role as the 'Requesting Safety Co-ordinator' as defined in the Grid Code.

Safety Co-ordinator B enacts the role as the 'Implementing Safety Co-ordinator' as defined in the Grid Code.

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OC8 / RISSP Philosophy

Points to note;

- There is no requirement for either Safety Co-ordinator to know the details of the circuit beyond the boundary.

- When enacting the role of the requesting safety co-ordinator; the requesting details of the RISSP shall include the location and the respective circuit name. This will always be the named equipment that is directly connected to the control boundary: i.e. RBB2, or Generator cct X. Where necessary individual isolators should be named as the boundary equipment; Generator cct X isolator X394 only.

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OC8 / RISSP Philosophy

Continued;

- If work is required on both sides of the boundary then each Safety Co-ordinator enacts the role of Requester and Implementer, as they are both providing safety precautions for each other.

- Each piece of HV equipment connected to the system must be under the control of someone who the Grid Code describes as a 'Safety Co-ordinator' or other Responsible Engineer.

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More Complex Issues

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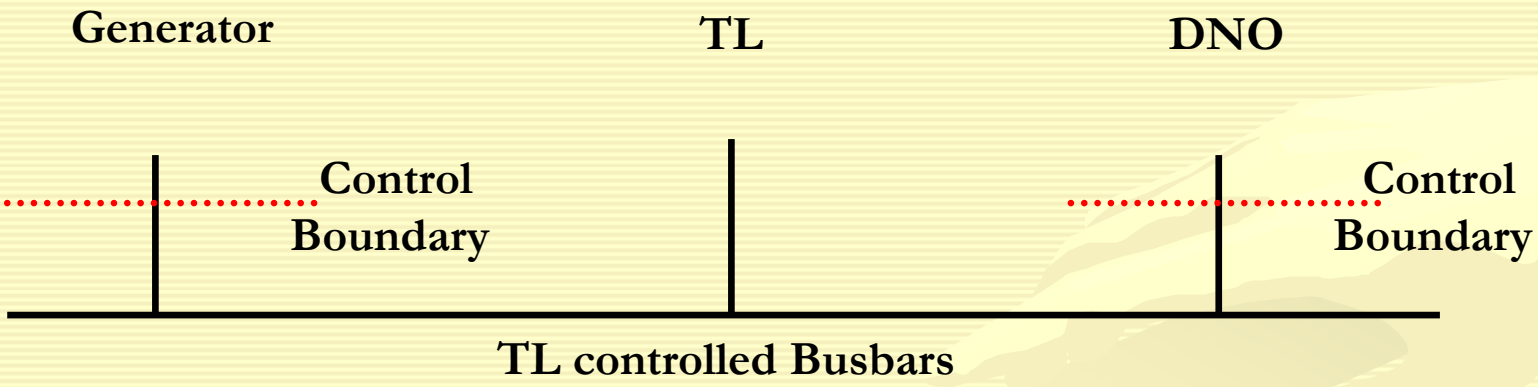
More Complex Issues

Cascade of Precautions



- Only two Safety Co-ordinators interface at any boundary point.
- The TL requests precautions from one Safety Co-ordinator which are then cascaded via an implementing RISSP to another.

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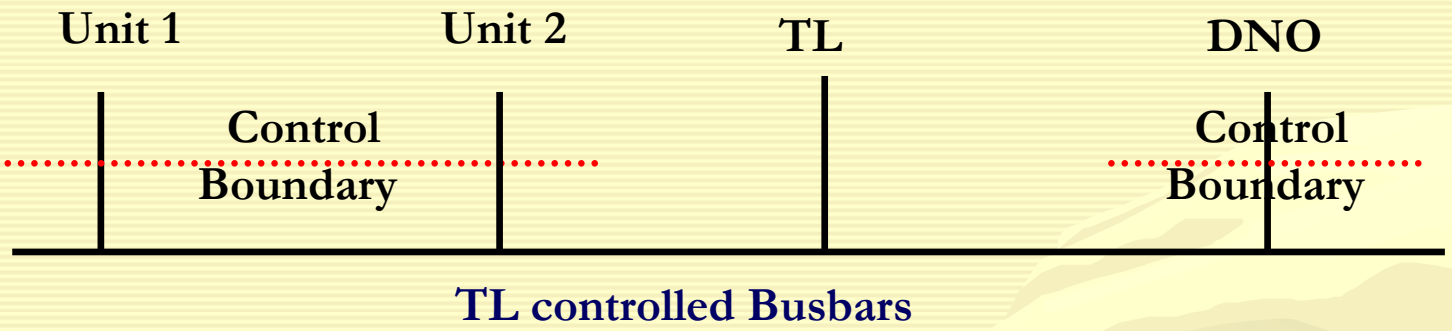
More Complex Issues

Linkage of Safety Precautions



In this case, the 'Generator' Safety Co-ordinator (Unit1 & 2) is acting as the 'requesting safety co-ordinator' (RISSP-R).

They will request safety precautions from the TL only (as the TL will cascade the DNO safety precautions along with their own).

The 'Generator' Safety Co-ordinator has requested safety precautions for Unit 1 only, however Unit 2 safety precautions will need to be taken into account…. How is this managed?

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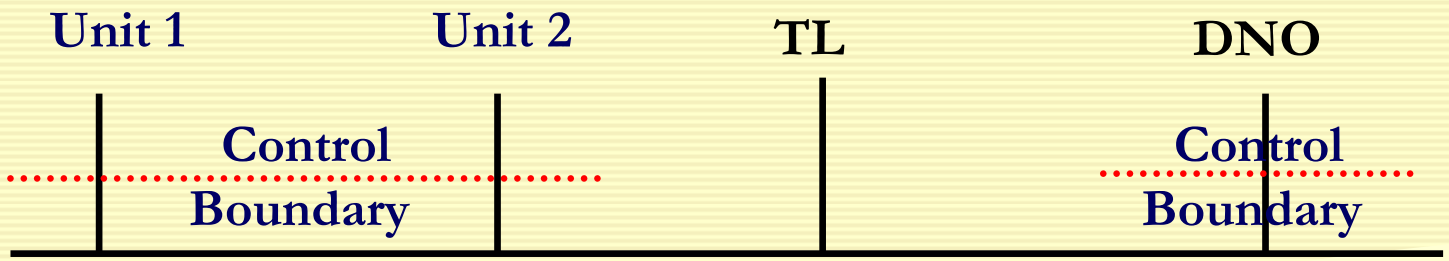
Maintaining safety precautions by linkage



OC8.5.1.3 ensures that the requesting safety Co-ordinator maintains their own safety precautions on their own equipment (in this case both Unit 1 & 2 ccts).

Unit 1 cct was identified as the only 'HV apparatus identification' by the requesting safety co-ordinator. Unit 2 safety precautions however shall be formally identified and recorded as 'further safety precautions' agreed under section 1.1 of the RISSP-R. Alternatively a logged statement maybe taken if such detail is not available ensuring OC8.5.1.3 is enforced.

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Other Considerations

- Testing Across Control Boundaries (OC8A.6)
- Emergency Situations (OC8A.7)
- Proximity PFW (OC8A.8)
- Disagreements (OC8A.5.1.4)
- Exchange of Keys (OC8A.5.2.2 – Isolation & 5.3.2 - earthing)
- Adding/ removing equipment

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Other Considerations: Testing

Testing across Control Boundaries

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Other Considerations: Testing

Testing across Control Boundaries

Points to note:

1. Testing across a Control Boundary is carried out under a specific safety document
2. The Requesting Safety Co-ordinator must inform the implementing Safety Co-ordinator when intending to test across a Control Boundary
3. All other Safety Documents must be cancelled and only one testing Safety Document shall be in force within the RISSP boundaries

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Other Considerations: Testing

Continued;

4. The intention to test across a Boundary shall be agreed and recorded with the Implementing Safety Co-ordinator
5. Only one Requesting or Implementing RISSP will be in force during the test
6. When parties have agreed that testing can take place the holder of the testing safety document may remove the earths quoted on the RISSP
7. The status of the equipment transferred during the testing (other than that already recorded on the RISSP) shall be identified and recorded on the safety co-ordinators safety logs.

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Other Considerations: Testing

Continued;

8. When testing, the safety control of the whole zone passes to the recipient of the Testing Safety Document, this overrides that specified in the Site Responsibility Schedule.

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Other Considerations: Testing

Cancellation of Testing Requirements

1. When testing is complete the Implementing Safety Co-ordinator will be contacted to record the cancellation of the testing requirements
2. The status of the equipment transferred during the testing shall be recorded on cancellation of the RISSP
3. When a Testing Document is cancelled with an exception which invalidates the RISSP, the RISSP will be cancelled without delay

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Other Considerations: Emergencies

Grid Code OC8.7

Where there is an inadvertent connection between systems, this part of the Grid Code defines how the safety precautions & RISSP process will be controlled.

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Other Considerations: Proximity PFW

Where a RISSP is in force for the TL to maintain the Super Grid Busbar selector isolator and the DNO controls the Busbar, the Implementing RISSP from the DNO provides adequate safety precautions for the work on the Super Grid Busbar selector isolators without the need of a proximity PFW. However, if work is required on the physical busbars (i.e. to make or break a connection), then an additional PFW shall be issued by the DNO.

The majority of Proximity PFW's are issued where safety distances could be infringed to HV equipment not 'electrically connected', for example a radio mast adjacent to a circuit.
A proximity PFW shall be issued where the Senior Authorised Person deems it necessary to issue a safety document to ensure safety from the system.

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Other Considerations: Proximity PFW Ref. OC8A.8.3

It is the responsibility of the working party (user or TL) to identify where infringement of safety distances to another users system may occur.

Where work infringes safety distances to another users system and HV safety precautions are required, a proximity PFW shall be issued.

It is important that the proximity PFW is issued on the 'infringed part of the system' prior to the work commencing.

A guide to proximity PFW requirements is given on the next slide.

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Proximity PFW guide (Issue)

- The relevant party (requesting Safety Co-ordinator) shall assess whether infringement of safety distances may occur on another users system prior to any work commencing.
- Once identified, the relevant party (requesting Safety Co-ordinator) will request a Proximity PFW to be issued by the other user (Implementing Safety Co-ordinator) . The Proximity PFW shall identify all equipment that maybe infringed and provide adequate safety precautions to ensure 'safety from the system'. The agreement shall be recorded via a logged statement.
- It is good practice for the Proximity PFW to include appropriate wording such as " This PFW is not to be cancelled without prior agreement from XXXX" (Where "XXXX" represents the requesting safety co-ordinators company name).
- The implementing safety co-ordinator will then inform the requesting safety co-ordinator of the Proximity PFW reference number (recorded via a logged statement). This maybe utilised as further precautions on the requesting safety co-ordinators safety documents.

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Proximity PFW guide (Cancelling)

- Once all work that infringes safety distances to the other users system has been completed and the relevant safety documents have been cancelled, the requesting safety co-ordinator will inform the implementing safety co-ordinator that the Proximity PFW is no longer required. The agreement shall be recorded via a logged statement.
- The implementing safety co-ordinator may then cancel the Proximity PFW as required without further reference to the requesting safety co-ordinator.

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Proximity PFW guide to issuing

Requesting Safety Co-ordinator		Implementing Safety Co-ordinator
	STAGE 1	
DNO, GEN or TL	Requesting safety co-ordinator shall identify if work infringes safety distances, if identified they must inform the implementing safety co-ordinator (via logged statement).	DNO, GEN or TL
	STAGE 2	
DNO, GEN or TL	Implementing safety co-ordinator issues a Proximity PFW (based on the infringement requirements) and provides the requesting safety co-ordinator with a valid safety document reference number (via logged statement).	DNO, GEN or TL
	STAGE 3	
DNO, GEN or TL	Requesting safety co-ordinator may now issue local safety documents as required utilising the Proximity PFW number as a cross reference (it is recommended that this reference is added to the further precautions section of the issuing safety document).	

Return to other considerations

Return to Contents

Proximity PFW guide to cancellation

Requesting Safety Co-ordinator		Implementing Safety Co-ordinator
DNO, GEN or TL	**STAGE 1** Once all infringement work has been completed and all associated safety documents have been cancelled, the Requesting safety co-ordinator will inform (via a logged statement) the implementing safety co-ordinator that the Proximity PFW is no longer required.	DNO, GEN or TL
	STAGE 2 The Implementing safety co-ordinator may now cancel the Proximity PFW as required with no further reference to the requesting safety co-ordinator.	DNO, GEN or TL

Return to other considerations

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In the event of a 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 near to which the work is to be carried out as indicated on the Operation Diagram.

Return to other considerations

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Other Considerations: Key Safe Keys

Where the safety precaution 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 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.

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Adding equipment to/ from the system

61

Return to other considerations

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Adding equipment to and from the system: (Overview)

- There is a continuous requirement for companies to replace and update their systems. Any alteration to the system needs to be performed in a controlled format to ensure that all affected parties are adequately informed and prepared.

- Each company shall ensure that appropriate notification is given to the affected parties within the agreed time frames prior to the 'enactment date' (the date agreed by all parties that the changes proposed will become endorsed).

- Prior to the agreed 'enactment date', all associated documentation such as Operational Diagrams, Site Responsibility Schedules (SRS's) and any local procedure requirements has been updated and signed for.

Return to other considerations

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Adding equipment to and from the system: (Overview)

- The company implementing the change/s will ensure that over and above their own procedures, the above 'minimum standards' are achieved.

- For further reference see NSI 33: The addition/ Removal of equipment To/ From the system.;
  http://www.nationalgrid.com/uk/Electricity/Safety/NSI/

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RISSP Issue

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RISSP Issue

General Requirements;

- Dialogue is required between Safety Co-ordinators to clarify:
- The location and equipment to be worked upon
- The safety precautions required to ensure safety from the system for the equipment identified above
- If Delegation of Authority (DOA) of the Control Person Role, is to be given or received
- All relative dialogue should be logged by both safety co-ordinators in their respective Safety logs
- Continuous 24 hour availability is a Grid Code requirement, but give as much notice as possible

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RISSP Issue

Specific Requirements;

- All Parties shall establish and confirm that Points of Isolation/s are in place.
- Only when all necessary Points of Isolation/s are confirmed shall the Safety Co-ordinator's agree to the application of Earths. Agreement to hold isolation for the purpose of earthing shall be formally recorded in the safety logs of each safety co-ordinator.
- Confirmation shall only be received or given between authorised Safety Co-ordinators, not other site staff.

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RISSP Issue

Specific Requirements;

Only when all relative safety precautions are in place and secured (as per OC8.5) including the exchange of keys, shall the respective RISSP forms be completed.

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RISSP Issue

Specific Requirements;

- Safety precautions shall only be cascaded to another party when they have been recorded on a Requesting RISSP
- Even when the precautions have been established under a DOA they cannot be cascaded to another party without being recorded on a RISSP

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RISSP Issue

- Both RISSP Forms are formatted in a similar fashion, however the further precautions section in 1.1 can vary between users.
- RISSP documentation shall be consented to/ issued at the same time by both the Requesting and Implementing Safety Co-ordinators
- Prior to the issue of the RISSP, the entire document should be read out loud clearly by one of the safety co-ordinators. All wording from all sections should read, this should be considered a best practice and will identify any typos or mistakes. The use of the Phonetical alphabet should also be considered.

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RISSP Issue

- Prior the issue of a RISSP, it maybe necessary for the RISSP document number to be released to by the requesting safety co-ordinator, this shall only be allowed due to electronic system requirements of the implementing safety co-ordinator. The RISSP shall not be 'in force' until both safety co-ordinators have signed and time stamped the agreed RISSP.

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RISSP Cancellation

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RISSP Cancellation

- When safety precautions are no longer required, (i.e. all work is complete on the Requesting side of the boundary and any Safety documents have been cancelled), the Requesting Safety Co-ordinator will contact the Implementing Safety Co-ordinator to effect cancellation of the RISSP

- Each party then co-ordinates the removal of safety precautions (the removal of Earths first followed by the removal of isolation) and then return to service of the circuit

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RISSP Paper work!

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RISSP Examples

RISSP Examples

OC8A

(England & Wales)

The RISSP-R Form Requesting Safety Co-ordinators Record. Front View

OC8A - APPENDIX A

[the Relevant E&W Transmission Licensee] [_____ **CONTROL CENTRE/SITE]**

RECORD OF INTER-SYSTEM **SAFETY PRECAUTIONS** (RISSP-R)
(**Requesting Safety Co-ordinator's** Record)

RISSP NUMBER

PART 1

1.1 **HV APPARATUS** IDENTIFICATION

Safety Precautions have been established by the **Implementing Safety Co-ordinator** (or by another **User** on that **User's System** connected to the **Implementing Safety Co-ordinator's System**) to achieve (in so far as it is possible from that side of the **Connection Point**) **Safety From The System** on the following **HV Apparatus** on the **Requesting Safety Co-ordinator's System**: [State identity - name(s) and, where applicable, identification of the **HV** circuit(s) up to the **Connection Point**]:

_____

_____

Further **Safety precautions** required on the **Requesting Safety Co-ordinator's System** as notified by the **Implementing Safety Co-ordinator**.

_____

1.2 **SAFETY PRECAUTIONS** ESTABLISHED

(a) **ISOLATION**

[State the **Location(s)** at which **Isolation** has been established (whether on the **Implementing Safety Co-ordinator's System** or on the **System** of another **User** connected to the **Implementing Safety Co-ordinator's System**). For each **Location**, identify each point of **Isolation**. For each point of **Isolation**, state the means by which the **Isolation** has been achieved, and whether, immobilised and **Locked**, **Caution Notice** affixed, other safety procedures applied, as appropriate.]

_____

_____

_____

(b) **EARTHING**

[State the **Location(s)** at which **Earthing** has been established (whether on the **Implementing Safety Co-ordinator's System** or on the **System** of another **User** connected to the **Implementing Safety Co-ordinator's System**). For each **Location**, identify each point of **Earthing**. For each point of **Earthing**, state the means by which **Earthing** has been achieved, and whether, immobilised and **Locked**, other safety procedures applied, as appropriate].

_____

_____

_____

1.3 ISSUE

I have received confirmation from _____ (name of **Implementing Safety Co-ordinator**) at _____ (location) that the **Safety Precautions** identified in paragraph 1.2 have been established and that instructions will not be issued at his location for their removal until this **RISSP** is cancelled.

Signed .....(**Requesting Safety Co-ordinator**)

at .....(time) on ..... (Date)

PART 2

2.1 CANCELLATION

I have confirmed to _____ (name of the **Implementing Safety Co-ordinator**) at _____ (location) that the **Safety Precautions** set out in paragraph 1.2 are no longer required and accordingly the **RISSP** is cancelled.

Signed .....(**Requesting Safety Co-ordinator**)

at .....(time) on ..... (Date)

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RISSP Examples

RISSP Examples
OC8A
(England & Wales)
The RISSP-I Form Implementing Safety Co-ordinator's Record.
Front view

OC8A - APPENDIX B

[the Relevant E&W Transmission Licensee] **[_____ CONTROL CENTRE/SITE]**

RECORD OF INTER-SYSTEM **SAFETY PRECAUTIONS** (RISSP-I)
(**Implementing Safety Co-ordinator**'s Record)

PART 1 **RISSP** NUMBER

1.1 **HV APPARATUS** IDENTIFICATION

Safety Precautions have been established by the **Implementing Safety Co-ordinator** (or by another **User** on that **User's System** connected to the **Implementing Safety Co-ordinator's System**) to achieve (in so far as it is possible from that side of the **Connection Point**) **Safety From The System** on the following **HV Apparatus** on the **Requesting Safety Co-ordinator's System**: [State identity - name(s) and, where applicable, identification of the **HV** circuit(s) up to the **Connection Point**]:

_____

_____

Recording of notification given to the **Requesting Safety Co-ordinator** concerning further **Safety Precautions** required on the **Requesting Safety Co-ordinator's System**.

1.2 **SAFETY PRECAUTIONS** ESTABLISHED

(a) **ISOLATION**

[State the **Location(s)** at which **Isolation** has been established (whether on the **Implementing Safety Co-ordinator's System** or on the **System** of another **User** connected to the **Implementing Safety Co-ordinator's System**). For each **Location**, identify each point of **Isolation**. For each point of **Isolation**, state the means by which the **Isolation** has been achieved, and whether, immobilised and **Locked**, **Caution Notice** affixed, other safety procedures applied, as appropriate.]

_____

_____

_____

(b) **EARTHING**

[State the **Location(s)** at which **Earthing** has been established (whether on the **Implementing Safety Co-ordinator's System** or on the **System** of another **User** connected to the **Implementing Safety Co-ordinator's System**). For each **Location**, identify each point of **Earthing**. For each point of **Earthing**, state the means by which **Earthing** has been achieved, and whether, immobilised and **Locked**, other safety procedures applied, as appropriate].

_____

_____

_____

1.3 ISSUE

I have confirmed to _____ (name of **Requesting Safety Co-ordinator**) at _____ (location) that the **Safety Precautions** identified in paragraph 1.2 have been established and that instructions will not be issued at my location for their removal until this **RISSP** is cancelled.

Signed .....(**Implementing Safety Co-ordinator**)

at .....(time) on ..... (Date)

PART 2

2.1 CANCELLATION

I have received confirmation from _____ (name of the **Requesting Safety Co-ordinator**) at _____ (location) that the **Safety Precautions** set out in paragraph 1.2 are no longer required and accordingly the **RISSP** is cancelled.

Signed .....(**Implementing Safety Co-ordinator**)

at .....(time) on ..... (Date)

(Note: This form to be of a different colour from RISSP-R)

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RISSP Examples: OC8A

Return to Contents

The Location Name

The RISSP number as quoted by the Requesting Safety Co-ordinator. This will include the agreed prefix.

Identification of the HV Apparatus to be worked on and circuits up to the connection point, agreed by both Safety Co-ordinators

OC8A - APPENDIX A

levant E&W Transmission Licensee] XXX 400KV S/S CONTROL CENTRE/SITE]

RECORD OF INTER-SYSTEM **SAFETY PRECAUTIONS** (RISSP-R)
(**Requesting Safety Co-ordinator's** Record)

RISSP NUMBER XXXX A

PART 1

1.1 **HV APPARATUS** IDENTIFICATION

Details of apparatus that in the opinion of the Implementing Safety Co-ordinator should be included in the Safety Precautions taken and reported to the Requesting Safety Co-ordinator

Safety Precautions have been established by the **Implementing Safety Co-ordinator** (or by another **User** on that **User's System** connected to the **Implementing Safety Co-ordinator's System**) to achieve (in so far as it is possible from that side of the **Connection Point**) **Safety From The System** on the following **HV Apparatus** on the **Requesting Safety Co-ordinator's System**: [State identity - name(s) and, where applicable, identification of the **HV** circuit(s) up to the **Connection Point**]:

XXXX 400KV SUBSTATION:

GENERATOR 1 CIRCUIT.

Further **Safety precautions** required on the **Requesting Safety Co-ordinator's System** as notified by the **Implementing Safety Co-ordinator**.

XXXX 400KV S/S: GEN 2 CCT

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RISSP Examples: OC8A

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Details of Safety Precautions established and secured by the Implementing Safety Co-ordinator It is the Implementing Safety Co-ordinator's responsibility to state the precautions held.

Details of Earths applied & confirmed as above.
The Implementing Safety Coordinator states the earths applied that maybe used to protect against inadvertent energisation.

(a) **ISOLATION**

[State the **Location(s)** at which **Isolation** has been established (whether on the **Implementing Safety Co-ordinator's System** or on the **System** of another **User** connected to the **Implementing Safety Co-ordinator's System**). For each **Location**, identify each point of **Isolation**. For each point of **Isolation**, state the means by which the **Isolation** has been achieved, and whether, immobilised and **Locked**, **Caution Notice** affixed, other safety procedures applied, as appropriate.]

XXXX 400KV SUBSTATION: ISOLATORS XXXX AND XXXX ARE BOTH OPEN, LOCKED & CAUTIONED.

BOTH ISOLS ARE IGDD; NG ARE MONITORING THE GAS ALARMS.

(b) **EARTHING**

[State the **Location(s)** at which **Earthing** has been established (whether on the **Implementing Safety Co-ordinator's System** or on the **System** of another **User** connected to the **Implementing Safety Co-ordinator's System**). For each **Location**, identify each point of **Earthing**. For each point of **Earthing**, state the means by which **Earthing** has been achieved, and whether, immobilised and **Locked**, other safety procedures applied, as appropriate].

XXXX 400KV SUBSTATION: EARTH SWITCHES XXXX AND XXXX ARE BOTH CLOSED AND LOCKED.

1.3 ISSUE

I have received confirmation from **Dave Michie** (name of **Implementing Safety Co-ordinator**) at **National grid - NOC** (location) that the **Safety Precautions** identified in paragraph 1.2 have been established and that instructions will not be issued at his location for their removal until this **RISSP** is cancelled.

Signed **Fred Smith** (**Requesting Safety Co-ordinator**)

at **10.30** (time) on **01 Jan 2010** (Date)

Issue: Implementer Name/ Company.

Issue: Requester Time/ Date.

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RISSP Examples: OC8A

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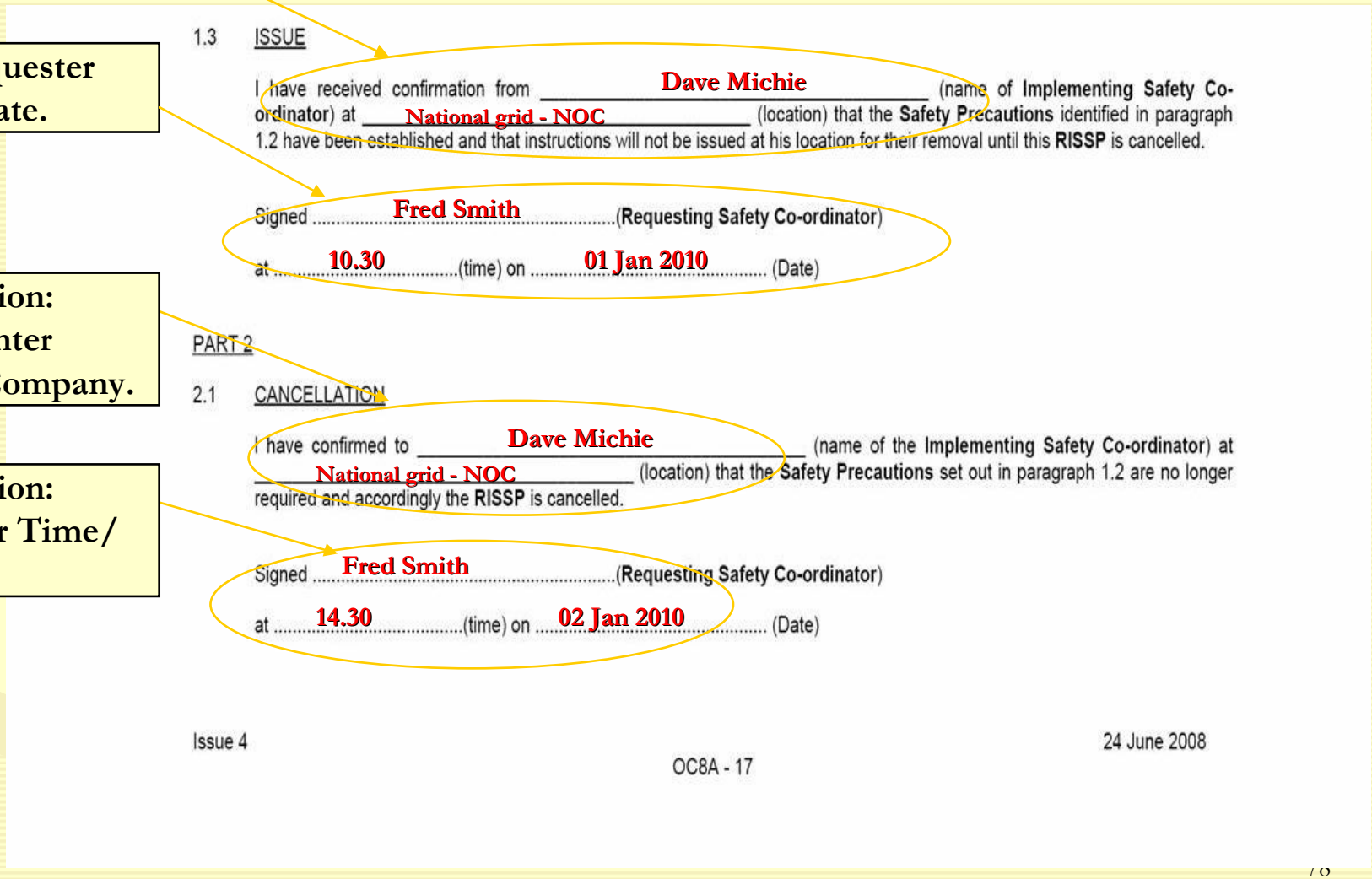
Issue: Implementer Name/ Company.

Issue: requester Time/ Date.

Cancellation: Implementer Name/ Company.

Cancellation: Requester Time/ Date.



1.3 ISSUE

I have received confirmation from Dave Michie (name of **Implementing Safety Co-ordinator**) at National grid - NOC (location) that the **Safety Precautions** identified in paragraph 1.2 have been established and that instructions will not be issued at his location for their removal until this **RISSP** is cancelled.

Signed Fred Smith (**Requesting Safety Co-ordinator**)

at 10.30 (time) on 01 Jan 2010 (Date)

PART 2

2.1 CANCELLATION

I have confirmed to Dave Michie (name of the **Implementing Safety Co-ordinator**) at National grid - NOC (location) that the **Safety Precautions** set out in paragraph 1.2 are no longer required and accordingly the **RISSP** is cancelled.

Signed Fred Smith (**Requesting Safety Co-ordinator**)

at 14.30 (time) on 02 Jan 2010 (Date)

Issue 4 24 June 2008

OC8A - 17

RISSP Examples: OC8B

OC8 B

(Scotland)

The RISSP-R FORM

Requesting Safety

Co-ordinator's Record.

(Front view)

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OC8B - APPENDIX A

RECORD OF INTER-SYSTEM SAFETY PRECAUTIONS (RISSP-R)
(Requesting Safety Co-ordinator's Record)

RISSP NUMBER _____

Part 1

1.1 CIRCUIT IDENTIFICATION

Safety Precautions have been established by the Implementing Safety Co-ordinator to achieve Safety From The System on the following HV Apparatus:

_____

_____

_____

_____

_____

_____

1.2 SAFETY PRECAUTIONS ESTABLISHED

(a) ISOLATION

State the Locations(s) at which Isolation has been established on the Implementing Safety Co-ordinator's System. For each Location, identify each point of Isolation. For each point of Isolation state, the means by which the Isolation has been achieved, and whether, immobilised and Locked, Caution Notice affixed, other Safety Precautions applied, as appropriate.

_____

_____

_____

_____

_____

_____

RISSP Examples: OC8B

OC8 B

(Scotland)

The RISSP-R FORM

Requesting Safety

Co-ordinator's Record.

(Rear view)

OC8B - APPENDIX A

(b) EARTHING

State the Locations(s) at which Earthing has been established on the Implementing Safety Co-ordinator's System. For each Location, identify each point of Earthing. For each point of Earthing state, the means by which the Earthing has been achieved, and whether, immobilised and Locked, other Safety Precautions applied, as appropriate.

_____

_____

_____

_____

_____

_____

1.3 ISSUE

I have received confirmation from _____ (name of Implementing Safety Co-ordinator) at _____ (Location) that the Safety Precautions identified in paragraph 1.2 have been established and that instructions will not be issued at his Location for their removal until this RISSP is cancelled.

Signed ..... (Requesting Safety Co-ordinator)

at ..... (time) on ..... (date)

PART 2

2.1 CANCELLATION

I have confirmed to _____ (name of the Implementing Safety Co-ordinator) at _____ (Location) that the Safety Precautions set out in paragraph 1.2 are no longer required and accordingly the RISSP is cancelled.

Signed ..... (Requesting Safety Co-ordinator)

at ..... (time) on ..... (date)

RISSP Examples: OC8B

OC8 B

(Scotland)

The RISSP-I FORM

Requesting Safety

Co-ordinator's Record.

(Front view)

OC8B - APPENDIX B

RECORD OF INTER-SYSTEM SAFETY PRECAUTIONS (RISSP-I)
(Implementing Safety Co-ordinator's Record)

RISSP NUMBER _____

PART 1

1.1 CIRCUIT IDENTIFICATION

Safety Precautions have been established by the Implementing Safety Co-ordinator to achieve Safety From The System on the following HV Apparatus:

_____

_____

_____

_____

_____

_____

1.2 SAFETY PRECAUTIONS ESTABLISHED

(a) ISOLATION

State the Location(s) at which isolation has been established on the Implementing Safety Co-ordinator's System. For each Location, identify each point of Isolation. For each point of Isolation state, the means by which the Isolation has been achieved, and whether, immobilised and Locked, Caution Notice affixed, other Safety Precautions applied, as appropriate.

_____

_____

_____

_____

_____

_____

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Return to Contents

RISSP Examples: OC8B

OC8 B

(Scotland)

The RISSP-I FORM

Requesting Safety

Co-ordinator's Record.

(Rear view)

OC8B - APPENDIX B

(b) EARTHING

State the Location(s) at which Earthing has been established on the Implementing Safety Co-ordinator's System. For each Location, identify each point of Earthing. For each point of Earthing state, the means by which the Earthing has been achieved, and whether, immobilised and Locked, other Safety Precautions applied, as appropriate.

_____

_____

_____

_____

_____

_____

1.3 ISSUE

I confirmed to _____ (name of Requesting Safety Co-ordinator) at _____ (Location) that the Safety Precautions identified in paragraph 1.2 have been established and that instructions will not be issued at my Location for their removal until this RISSP is cancelled.

Signed ..... (Implementing Safety Co-ordinator)

at ..... (time) on ..... (date)

PART 2

2.1 CANCELLATION

I have received confirmation from _____ (name of the Requesting Safety Co-ordinator) at _____ (Location) that the Safety Precautions set out in paragraph 1.2 are no longer required and accordingly the RISSP is cancelled.

Signed ..... (Implementing Safety Co-ordinator)

at ..... (time) on ..... (date)

(Note: This form to be of a different colour from RISSP-R.)

RISSP Examples: OC8B

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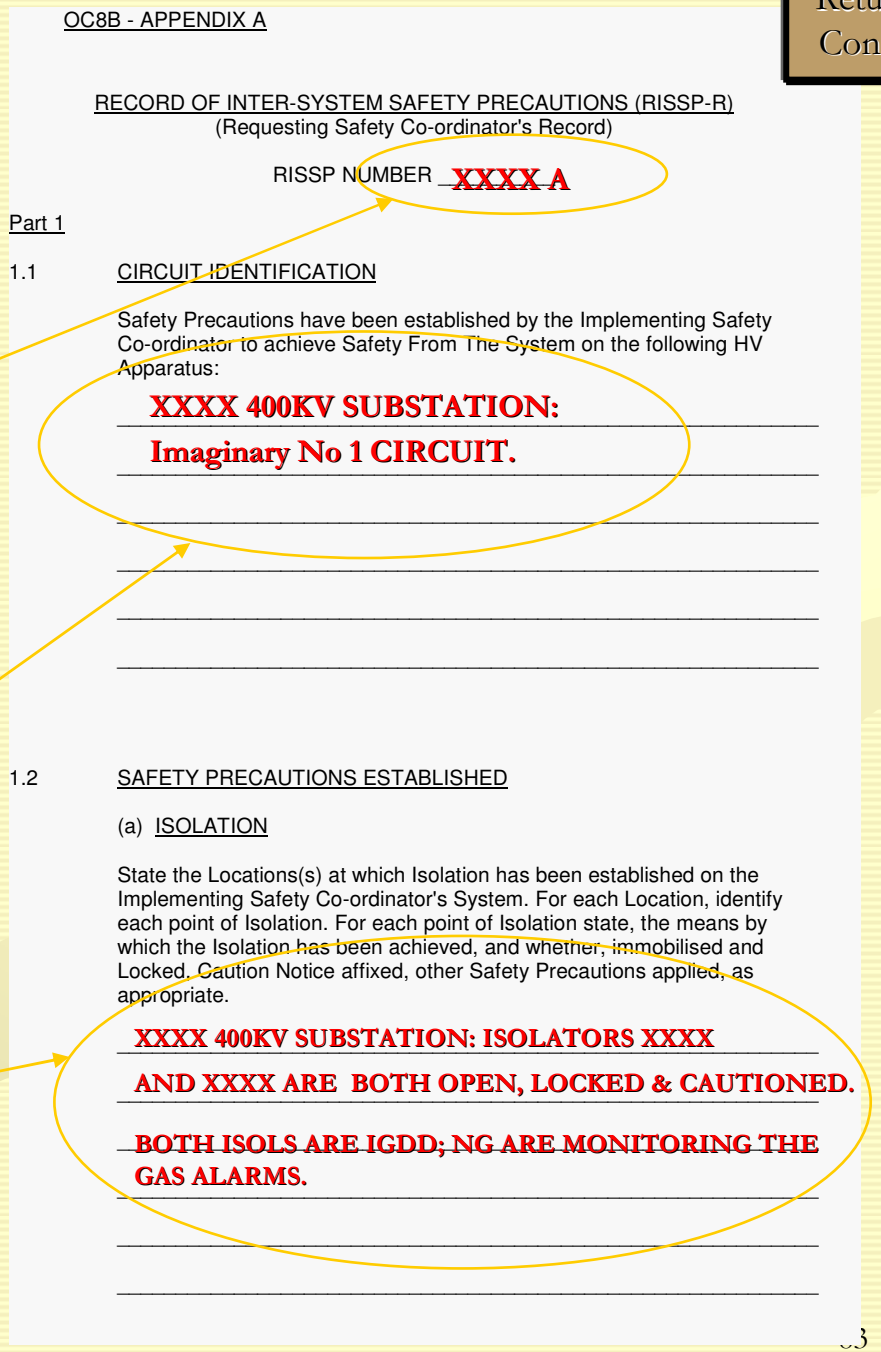
The RISSP number as quoted by the Requesting Safety Co-ordinator. This will include the agreed prefix.

Identification of the HV Apparatus to be worked on and circuits up to the connection point, agreed by both Safety Co-ordinators

Details of apparatus that in the opinion of the Implementing Safety Co-ordinator should be included in the Safety Precautions taken and reported to the requesting Safety Co-ordinator. This should include the identification of SF6 equipment.



OC8B - APPENDIX A

RECORD OF INTER-SYSTEM SAFETY PRECAUTIONS (RISSP-R)
(Requesting Safety Co-ordinator's Record)

RISSP NUMBER XXXX A

Part 1

1.1 CIRCUIT IDENTIFICATION

Safety Precautions have been established by the Implementing Safety Co-ordinator to achieve Safety From The System on the following HV Apparatus:

XXXX 400KV SUBSTATION:
Imaginary No 1 CIRCUIT.

1.2 SAFETY PRECAUTIONS ESTABLISHED

(a) ISOLATION

State the Locations(s) at which Isolation has been established on the Implementing Safety Co-ordinator's System. For each Location, identify each point of Isolation. For each point of Isolation state, the means by which the Isolation has been achieved, and whether, immobilised and Locked, Caution Notice affixed, other Safety Precautions applied, as appropriate.

XXXX 400KV SUBSTATION: ISOLATORS XXXX
AND XXXX ARE BOTH OPEN, LOCKED & CAUTIONED.

BOTH ISOLS ARE IGDD; NG ARE MONITORING THE GAS ALARMS.

RISSP Examples: OC8B

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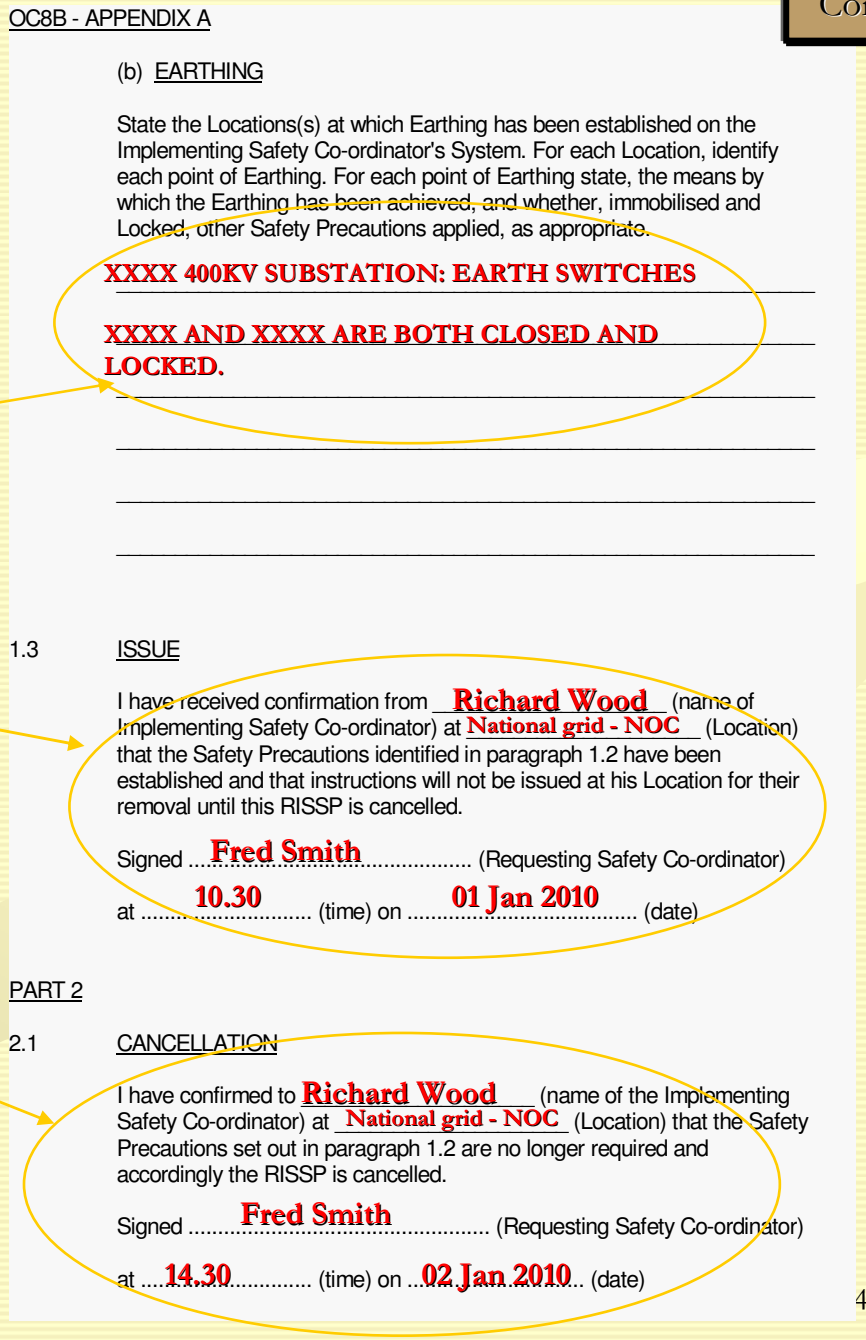
Details of Earths applied & confirmed as above.
The Implementing Safety Coordinator states the earths applied that maybe used to protect against inadvertent energisation.

Both Requesting and Implementing Safety Co-ordinators shall complete and sign part 1.3 of the RISSP-R and RISSP-I forms respectively

Once signed no alterations are permitted The RISSP can only be cancelled

When safety precautions are no longer required, (i.e. all work complete and any Safety documents Cancelled), the Requesting Safety Co-ordinator will contact the Implementing Safety Co-ordinator to effect cancellation of the RISSP.



OC8B - APPENDIX A

(b) EARTHING

State the Locations(s) at which Earthing has been established on the Implementing Safety Co-ordinator's System. For each Location, identify each point of Earthing. For each point of Earthing state, the means by which the Earthing has been achieved, and whether, immobilised and Locked, other Safety Precautions applied, as appropriate.

XXXX 400KV SUBSTATION: EARTH SWITCHES

XXXX AND XXXX ARE BOTH CLOSED AND LOCKED.

1.3 ISSUE

I have received confirmation from Richard Wood (name of Implementing Safety Co-ordinator) at National grid - NOC (Location) that the Safety Precautions identified in paragraph 1.2 have been established and that instructions will not be issued at his Location for their removal until this RISSP is cancelled.

Signed ..... Fred Smith ..... (Requesting Safety Co-ordinator)

at ..... 10.30 ..... (time) on ..... 01 Jan 2010 ..... (date)

PART 2

2.1 CANCELLATION

I have confirmed to Richard Wood (name of the Implementing Safety Co-ordinator) at National grid - NOC (Location) that the Safety Precautions set out in paragraph 1.2 are no longer required and accordingly the RISSP is cancelled.

Signed ..... Fred Smith ..... (Requesting Safety Co-ordinator)

at ..... 14.30 ..... (time) on ..... 02 Jan 2010 ..... (date)

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Case Studies

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Case Studies

Local Case Study 1

This section allows the user to introduce a local case study relating to your individual needs.

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Case Studies

Local Case Study 2

This section allows the user to introduce a local case study relating to your individual needs.

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Learning Points

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Learning Points

When Things go wrong !!

The following slides show details of actual near misses involving Safety Co-ordination across the Control Boundaries

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Learning Points

Control Interfaces

- In the past evidence suggests that the management of safety across control boundaries is problematic
- Past incident reports have emphasised this point
- Communication problems seem to be evident
- Lack of commonality between companies seems to be an issue

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Learning Points

400kv Substation Near Miss 1

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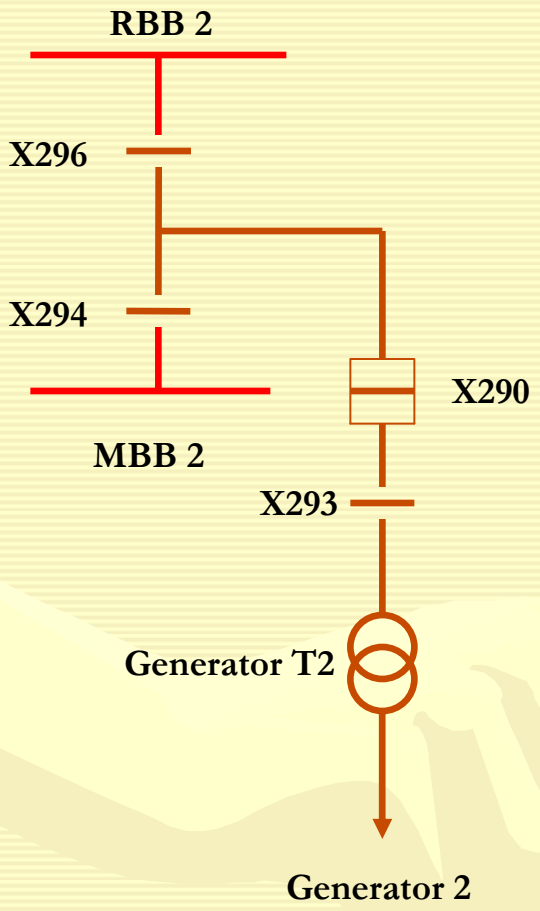

TL Controlled

GEN Controlled

- **All equipment subject to TL safety rules**
- **Work to be carried out by TL on Power Station controlled isolator X296**
- **RISSP requested by Power Station to hold precautions on Reserve Busbar 2**
- **RISSP cancelled prematurely with Power Station safety documents still in place**

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Learning Points

400kv Substation Near Miss 1

- The Generator Safety Co-ordinator was at fault.
- Before cancelling the RISSP, acknowledgement of the completion of the work on X296 should have been confirmed

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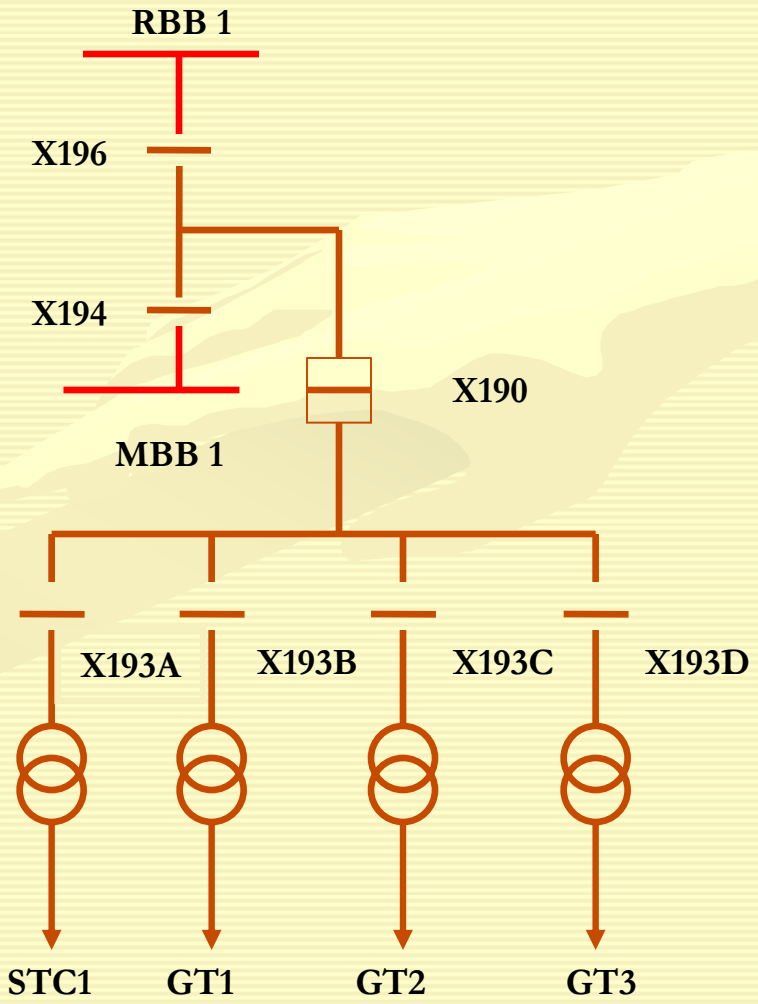
Learning Points

400kv Substation Near Miss 2

TL Controlled

GEN Controlled

- **Work required on X196 and X190 under TL Safety Rules**
- **Three TL requesting RISSPs cancelled because of either inadequate isolation or description of isolation**
- **Fourth RISSP correct**
- **Implementing TL RISSP cancelled and re-issued due to earthing requirements.**
- **Whole process took close to four hours**



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Learning Points
400kv Substation Near Miss 2

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- On this occasion both Safety Co-ordinators demonstrated inadequacies in their approach
- The preamble should have clarified the extent of the work and what actions were required to provide the necessary safety precautions
- The trial and error approach, until the correct RISSP is achieved, is unacceptable

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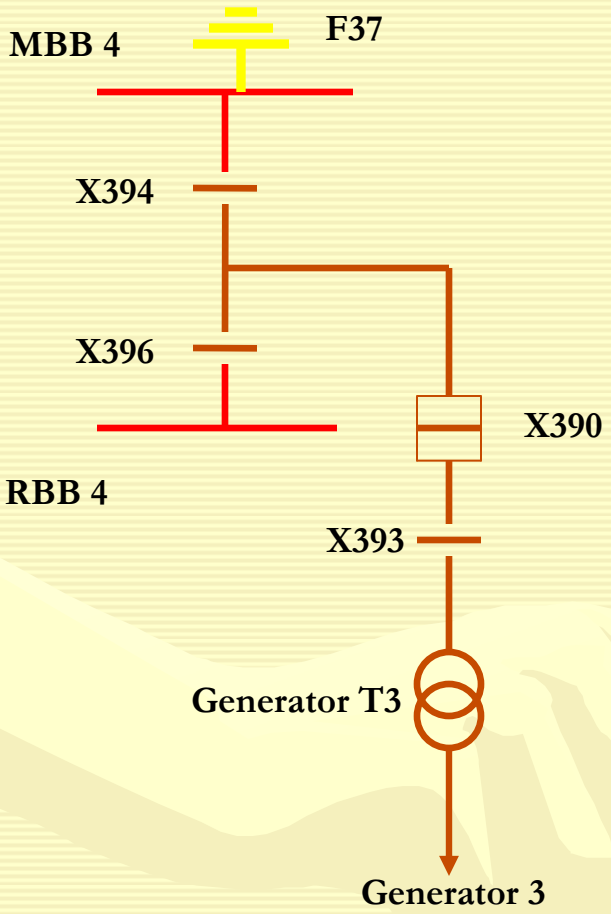
Learning Points

400kv Substation Near Miss 3



TL Controlled

GEN Controlled

- A RISSP quoting MBB 4 isolation and Fixed Earth Device F37 was implemented by TL for work on X394
- Prior to the cancellation of the RISSP Fixed Earth Device F37 had been removed
- The Fixed Earth Device had been removed by the TL SAP under an instruction issued by the station
- The TL SAP had led the Safety Co-ordinator into this course of action

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Learning Points
400kv Substation Near Miss 3

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- This example clearly demonstrates what should not happen
- The Safety Co-ordinator should be the key decision maker under these circumstances, and have a full understanding of the procedures and protocol
- The SAP should not be taking the lead and directing the actions of the Safety Co-ordinator
- Pause to fully understand issues before proceeding

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Local Learning Points

Local learning points:

This section allows the user to introduce any local learning points relating to your individual needs.

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End of Course Questionnaire

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Safety Co-ordinator Training

END

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