NATIONAL SAFETY INSTRUCTION

UK BP/SE/NSI 33
THE ADDITION/REMOVAL OF EQUIPMENT TO/FROM THE SYSTEM

National Grid Copyright

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopying, recording or otherwise, without the written permission of National Grid obtained from the issuing location.

The contents of National Grid documents are based on the needs of National Grid and the conditions under which it operates. It should not therefore be assumed that the contents stated therein necessarily meet the particular circumstances and requirements of other organisations. The principles set out in this document are for information only and therefore National Grid is not liable to any third party for any loss or damage resulting from reliance on the contents. It is the responsibility of such external organisations to check that the document is the latest version and is appropriate for their purposes

DOCUMENT MANAGEMENT RECORD

Document Title	THE ADDITION/REMOVAL OF EQUIPMENT TO/FROM THE SYSTEM
Document No:	UK BP/SE/NSI 33
Previous Review Date:	
Next Review Date:	

Document Issue Status				
Issue	**Date**	**Notes**	**Originator**	**Authorised for Use**
Issue 3	September 2002			A L Bennett
Issue 4	June 2005	Re-issued as UK BP/SE/NSI 33	R Scarth	SEPAG
Issue 5	April 2006	Document re-branded to National Grid from National Grid Transco	N Lilley	SEPAG
Issue 6	February 2007	Rewrite - to clarify the LV, Mechanical and Earthing procedure. Amendments to definitions to support changes. Also clarification of the test lead requirements.	G Bridges	SEPAG

THE ADDITION/REMOVAL OF EQUIPMENT TO/FROM THE SYSTEM

CONTENTS

		Page
1	Scope	4
2	Definitions	4
3	Documentation	6
4	HV Procedure	6
5	Earthing, LV and Mechanical Procedure	7
6	Document Completion	9
7	References	9
8	Appendices	9

THE ADDITION/REMOVAL OF EQUIPMENT TO/FROM THE SYSTEM

1 SCOPE

National Grid Safety Rule R.1. 2, requires that **Equipment** shall only be added to or removed from the **System** in accordance with an **Approved** procedure. This document as the **Approved** procedure defines when National Grid Electricity Safety Rules apply or cease to apply. Where **Equipment** is to be added to or removed from a **System** subject to the application of National Grid Electricity Safety Rules, this procedure must be followed.

When **Equipment** is to be added to or removed from a **System** subject to a third party's Safety Rules and where National Grid undertakes the role of **Control Person (Safety)**, the principles of this procedure must be followed in conjunction with the third party's safety management system.

This procedure defines a safe system of working when adding *Plant* or removing **Equipment** to/from the **System**, and when changes in Name or Nomenclature for existing circuits or **Equipment** are required. This procedure provides a method of formally identifying the existence of **Equipment** to the *Off Site Control Person.*

Construction sites are covered by this procedure where there is to be temporary or permanent connection of Earthing, **LV**, or Mechanical services which require the interface to be managed.

OVERVIEW

When *Plant* is brought onto a National Grid operational site the requirements of National Grid Electricity Safety Rules shall apply with regard to the movement of large objects and any potential proximity to **HV Equipment**. Before *Plant* can be connected or is readily connectable to the **HV System** it must be formally identified as **HV Equipment**.

The *Local Control Person* in conjunction with the **Senior Authorised Person(s)** are responsible for the safety aspects of new *Plant* entering site until it is declared as part of the National Grid **System** and defined as **Equipment.**

The **Control Person** has no responsibilities for the *Plant* until after it has been declared as **HV Equipment**. This two-stage process described recognises both **Control Person's** responsibilities.

The Site Responsibility Schedule shall be amended to identify each **Control Person's** responsibility following the addition/removal of **Equipment** to/from the **System.**

The process of declaring an item of *Plant* as **HV Equipment** has also to be co-ordinated with the requirements of the *Operation Diagram*, Site Responsibility Schedule and the Management Systems of the **Control Person** taking responsibility for the **HV Equipment.**

2 DEFINITIONS

Terms printed in bold type are as defined in the National Grid Electricity Safety Rules.

Terms printed in Italics are defined as follows:

Commissioning	The preparation for and energising of **Equipment** for the first time. This is a two-stage process consisting of Stage 1 Commissioning and Stage 2 Commissioning. Further information is available in TP106 "Equipment Commissioning and Decommissioning".

Commissioning Eng.	Responsible for defining the arrangements for achieving safety from the **System**, to manage the implementation of UK BP/SE 304 requirements (including Operations Diagrams) and to confirm the adequacy of the health and safety file on completion.
HV System Change Certificate. (HVSCC)	A certificate used to notify contractors and National Grid Operating Units when adding *Plant* or removing **Equipment** to/from the **System**, and changes in name or Nomenclature for existing circuits or Equipment. On the completion of Part 6 the changes defined in Part 3 become effective. The *Local Control Person's* copy of the document shall be the definitive document. The *Control Person's* copy of the document shall have printed names in Part 6, backed up with logged statements.
Notification of Change Certificate (NCC)	A certificate used to notify Contractors and National Grid Operating Units, of a change to the date on an existing *HVSCC*.
Occupier	The person having control over the premises and who regulates and controls the work that is done there.
Occupiers Representative	The person identified by the *Occupier* who shall discharge the duties and responsibilities of the *Occupier* on the premises. On National Grid Operational sites this will normally be the Delivery Manager or Delivery Engineer. On National Grid non-operational sites it will be a representative of the party who regulates and controls the work that is done there.
Control Person	The **Control Person (Operations)** and **Control Person (Safety)** for the **HV System** as defined in the Site Responsibility Schedule. Where authorisations allow, this may be done by the *Local Control Person*.
Local Control Person	A **Senior Authorised Person (SAP 1 and/or 2 and 3)** acting as the **Control Person (Operation)** and **Control Person (Safety)** for **LV** and mechanical **Equipment.** Where **Equipment** is to be transferred to a **CPS1** the *Local Control Person* shall be an **SAP1**.
Operations Diagram	The series of National Grid issued diagrams which define the following information: (Ref. TP 119 Operation Diagrams) Sheet 1 S/S single line diagram Sheet 2 S/S Technical Data Sheet Sheet 3 S/S Gas Zones Sheet 4 S/S Gas Zone Alarm Schedule Sheet 5 S/S Oversailing Hazard Schedule Routes National Routes OHL OHL Colours (Technical Data) Accessed from http://infonetuk/ohl/ Routes Oversailing Conductors Schedule

Plant	Electrical and/or Mechanical items, which are not part of the **System** and Disconnected from the **System.**
System Connection Form	A document used to formally authorise connection of *Plant* subject to the control of another party's Safety Management System to the **System**. See appendix 2.
Isolation Request Form	This document is used to define, secure and maintain safety precautions across the interface of two Safety Management Systems. See appendix 4.

3 DOCUMENTATION

HV System Change Certificate (click for link)

Notification of Change Certificate (click for link)

System Connection Form

Isolation Request Form

4 HV PROCEDURE

4.1 REMOVAL OF HV EQUIPMENT

A permanent physical disconnection (greater than the **Safety Distance**) between the **Equipment** and the **HV System** shall be established while the **Equipment** is part of the **HV System,** the **Equipment** will then be declared as being removed from the **HV System.** The former **HV Equipment** will then become *Plant.* Part A of an *HVSCC* shall be completed and issued for this purpose.

4.2 CHANGE OF CIRCUIT NAME OR NOMENCLATURE

When **HV** circuit names or **Equipment** nomenclature change, the appropriate *Operation Diagrams* shall be updated. Part B of an *HVSCC* shall be completed and issued for this purpose.

4.3 ADDITION OF *PLANT*

Prior to any physical connection being made between the **HV System** and *Plant,* the *Plant* shall be declared as part of the **HV System** and defined as **HV Equipment.** Part C of an HVSCC shall be completed and issued for this purpose.

Note: completion of matrix in Part 3 N/A required for sections not used.

4.4 O.H.L. TOWERS and CONDUCTORS

The same principles as 1.1.1, 2, and 3 shall apply to O.H.L. conductors. When **Equipment** (i.e. new conductors) are applied to a tower, the tower shall be made subject to **HV** Electricity Safety Rules. Subsequent addition of conductors to the other side of the tower will require those conductors to be declared as **Equipment** via the issue of a *HVSCC*.

Where a risk assessment defines that cross jumpering of Over Head Line double circuits is required, the action to add cross jumpers (inter circuit conductors) and the removal of jumpers to form a disconnected circuit will be defined on the *HVSCC* on completion of the cross jumpering.

4.5 TRANSFER OF **CONTROL PERSON**

When **Equipment** is transferred from the Electricity Safety Rules of National Grid to or from the Safety Management System of another company the Site Responsibility Schedule (Ref TP136 "Responsibility Schedules") shall be updated and signed by all interested parties prior to the transfer. Part D of the *HVSCC* should be used to define the **Equipment** and control party at the start and finish of the process.

4.6 TEMPORARY REMOVAL OF **EQUIPMENT** FROM THE **SYSTEM**

Equipment temporarily removed from the **System**, e.g. for workshop repair, return to manufacturers etc, shall be considered to be not subject to the requirements of the Electricity Safety Rules from the time of removal from the normal position until the time of return or replacement. E.g. circuit breakers are not subject to HV Electricity Safety Rules when in the Refurb Centre.

An *HVSCC* is not required. On site procedures shall define how residual dangers will be managed.

4.7 TESTING

Where there is a requirement for testing to be carried out there is no requirement for test leads to be declared as part of the system providing they are part of a discrete test instrument.

4.8 TIME SCALES

Where due to unforeseen circumstances the timescales for an *HVSCC* cannot be adhered to, all relevant parties must seek the agreement of the Network Operations Centre Manager before Part 2 of the certificate can be completed.

5 EARTHING, LV & MECHANICAL PROCEDURE

5.1 ADDITION OF EARTHING, **LV** OR MECHANICAL *PLANT not involving third parties*

Prior to any physical connection being made between Earthing, **LV** and Mechanical *Plant*, these items shall be declared by the *Local Control Person* as part of the **System** and defined as **Equipment** using one of the following options:

- The *Plant* will become part of the **System** immediately prior to first connection.
- The *Plant* will become part of the **System** immediately after cancellation of the **Safety Document** that has been issued for the purpose of *Connection* of the new **Equipment.**

Prior to the connection being established the Local *Control Person* shall ensure that site drawings and records of the **System** are updated and that all relevant personnel made aware of the changes.

5.2 ESTABLISHING EARTHING, **LV** AND MECHANICAL *PLANT CONNECTIONS WITH A THIRD PARTY*

Prior to establishing any temporary or permanent physical connection between Earthing, **LV** or Mechanical *Plant* agreement to the connection shall be sought from the third party's site representative.

- The agreement to the connection shall be formally recorded via the '*System connection Form'* in appendix 2 of this document.
- The Local *Control Person* must inform the third party site representative of any Potential hazards which will be Introduced following the establishment of the connection.

- By signing the 'System Connection Form' the third party is agreeing to manage any potential hazards associated with work on plant under their control. The third party's safe system of work should be applied for work on plant in the designated work area (e.g. CDM)

- To ensure that the work to establish the connection can be undertaken safely an 'Isolation Request Form' (appendix 4 of this document) or an equivalent document will be implemented by the third party to maintain isolation or to confirm that back energisation is not possible.

- Site Specific Risk Assessment and Method Statements shall detail the methods of work.

- The *Local Control Person* shall ensure that site drawings and records of the **System** are updated to show the connection point prior to the connection being made and that all relevant personnel made aware of the changes. In the case where the connection is of a temporary nature i.e. to facilitate testing as part of the commissioning process a hand amendment to the site diagram will be sufficient.

- The connection point becomes part of the National Grid System and effectively the boundary between two safety management systems.

- When using the System Connection Form *Plant* does not have to be declared as **Equipment** before the third party's *Plant* is connected to the **System**.

5.3 MANAGEMENT OF SAFETY ACROSS AN EARTHING, **LV** OR MECHANICAL *CONTROL BOUNDARY*

- If the third party require isolation for subsequent work following the establishment of the connection this will be established by the National Grid *Local Control Person* and formally recorded on the 'Isolation Request form'.

- If following the establishment of the connection National Grid require isolation for work on their system the third party will be requested to provide isolation which will be formally recorded on either an 'Isolation Request Form' or an equivalent third party document.

5.4 CANCELLATION OF THE 'SYSTEM CONNECTION FORM'

The 'SYSTEM CONNECTION FORM' remains in force for the duration of the temporary connection or until the *Plant* is ready to be declared as **Equipment.** The 'SYSTEM CONNECTION FORM' is cancelled by completing part 4. The form outlines the two options on cancellation.

- The original connection has been disconnected and the systems are no longer connected together.

- The Plant previously under the control of the third party has been added to the system as **Equipment** now under the control of the **Senior Authorised Person** acting as the *Local Control Person.*

The ***Local Control Person*** shall ensure that site drawings and records of the **System** are updated to show the connection point removed or to show the **Equipment** which has been added to the **System**.

5.5 REMOVAL OF EARTHING, **LV** / MECHANICAL **EQUIPMENT**

Following the physical disconnection being made between Earthing, **LV** and Mechanical **Equipment**, and the rest of the **System** those items will be declared as not being part of the **System** and defined as *Plant*, using one of the following options:

- The **Equipment** will become *Plant* after the last disconnection from the **System**.

- The **Equipment** will become *Plant* immediately after cancellation of the **Safety Document** that has been issued for the purpose of disconnecting the **Equipment** from the **System.**

Site Specific Risk Assessment and Method Statements shall detail the methods of work. The ***Local Control Person*** shall ensure that site drawings and records of the **System** are updated and relevant personnel made aware of the changes.

5.6 SYSTEM CONNECTION FORM (Appendix 2)

On Earthing, **LV** and Mechanical *Plant*, prior to a connection between the **System** and a third party's system, the third party must confirm to the *occupier's representative* that they have a Safety Management System in place to manage any hazards introduced by the establishment of the connection.

5.7 ISOLATION REQUEST FORM (Appendix 4)

The third party shall have a Safety Management System formally agreed with the *Occupiers Representative,* to provide isolation if requested across the boundary between the two safety management systems.

6 DOCUMENT COMPLETION

This procedure needs to be read in conjunction with the relevant parts of TP106.

The *Commissioning Engineer* will be appointed by an appropriate manager. The *Occupiers Representative* has the responsibility to produce the relevant documents and certificates.

Where the **Control Person Safety (HV)** is not at the Network Operations Centre the certificates must be amended as appropriate.

The same HVSSC shall be used for all related changes on the **System** that take place at the same time and locations. Changes to an *HVSCC* shall be controlled by reissuing the *HVSCC* with a new revision number. The defined changes will not become effective until Part 6 of the *HVSCC* has been completed.

Sections of the certificates shall be completed in the defined order.

The certificates shall be numbered from a register accessed via the Intranet. Click here for link to the SAP Briefcase

The forms in appendix 2 and 4 shall be uniquely sequentially numbered from a register managed by the *Commissioning Engineer*.

Appendix 1 flow chart describes the process of completing a *HVSCC*.

Appendix 3 flow chart describes the process for completing *System Connection Form*.

7 REFERENCES

TP 106 Equipment Commissioning and Decommissioning
TP 119 Operations Diagrams
TP 136 Site Responsibility Schedules

8 APPENDICES

HV System Change Certificate, flow chart

System Connection Form (SCF)

System Connection Form, flow chart

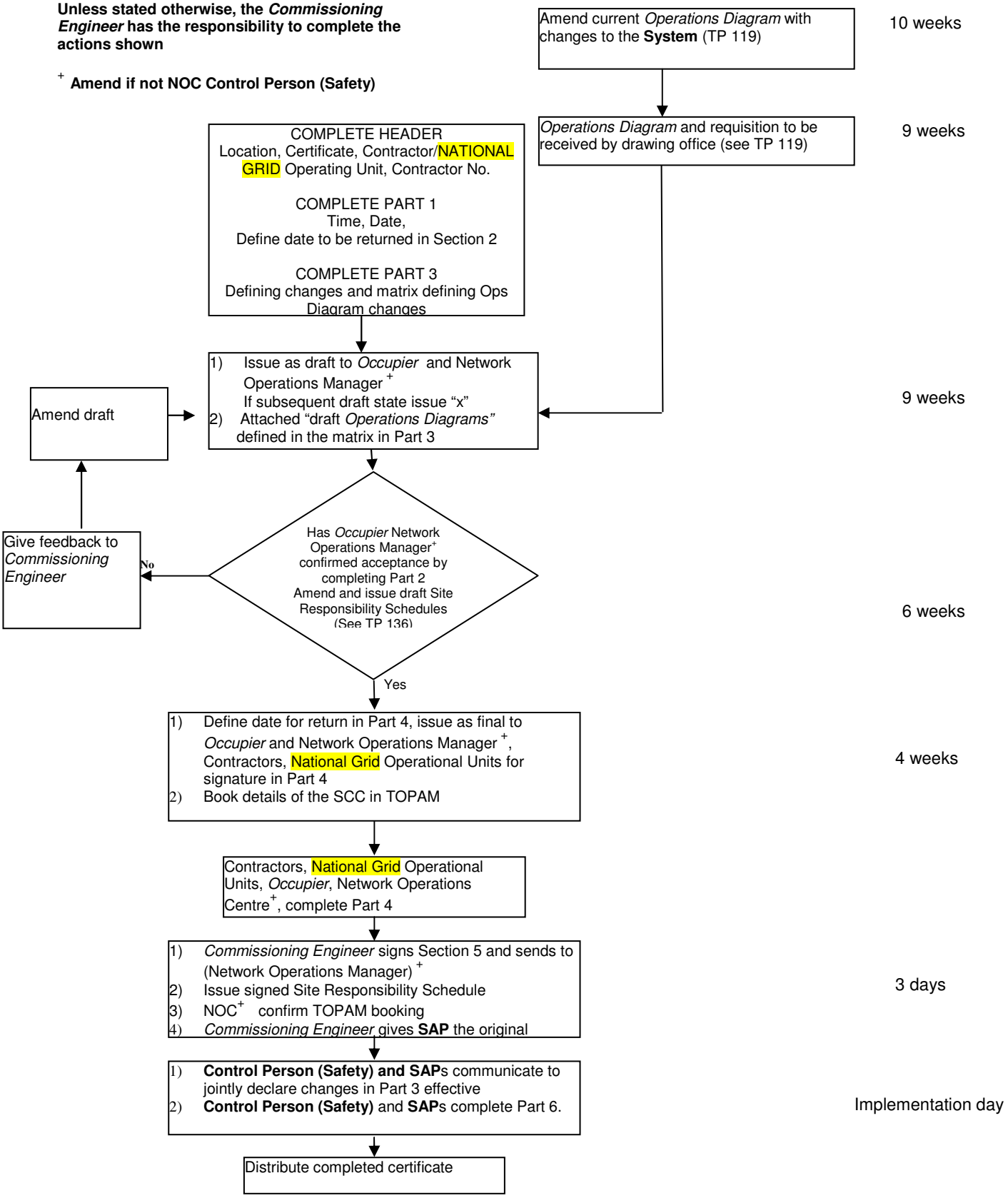
Isolation Request Form

APPENDIX 1

H.V. SYSTEM CHANGE CERTIFICATE (HVSCC) Flow chart

Unless stated otherwise, the *Commissioning Engineer* has the responsibility to complete the actions shown

+ **Amend if not NOC Control Person (Safety)**



SYSTEM CONNECTION FORM (SCF)
(EARTHING, LV AND MECHANICAL)

This document formally authorises connection of *Plant* under the control of another party's Safety Management System to the **System**

LOCATION..... **NUMBER**.....

PART 1 – DESCRIPTION

Plant and where it is connected to the **System**

PART 2 – SANCTION

I agree to the connection specified in Part 1 from ……. Hrs on ……

Name..... **Signature**.....**Time**.....**Date**.....
National Grid *Local Control Person*

PART 3 – ISSUE

I agree to the connection onto the National Grid **System** as specified in Part 1 and accept, on behalf of the Company named below, responsibility for the Management of Safety within our control. The point of connection will always be part of the National Grid **System**.

Name..... **Signature**.....**Time**.....**Date**.....

Company.....

PART 4 – CANCELLATION

The connection specified in Part 1 shall be:-

* 1. Disconnected as from ……hrs. on ……

* 2. *Plant added* to the **System** under the control of the **Senior Authorised Person** acting as the *Local Control Person*

Declaration by the Company, associated with option 2

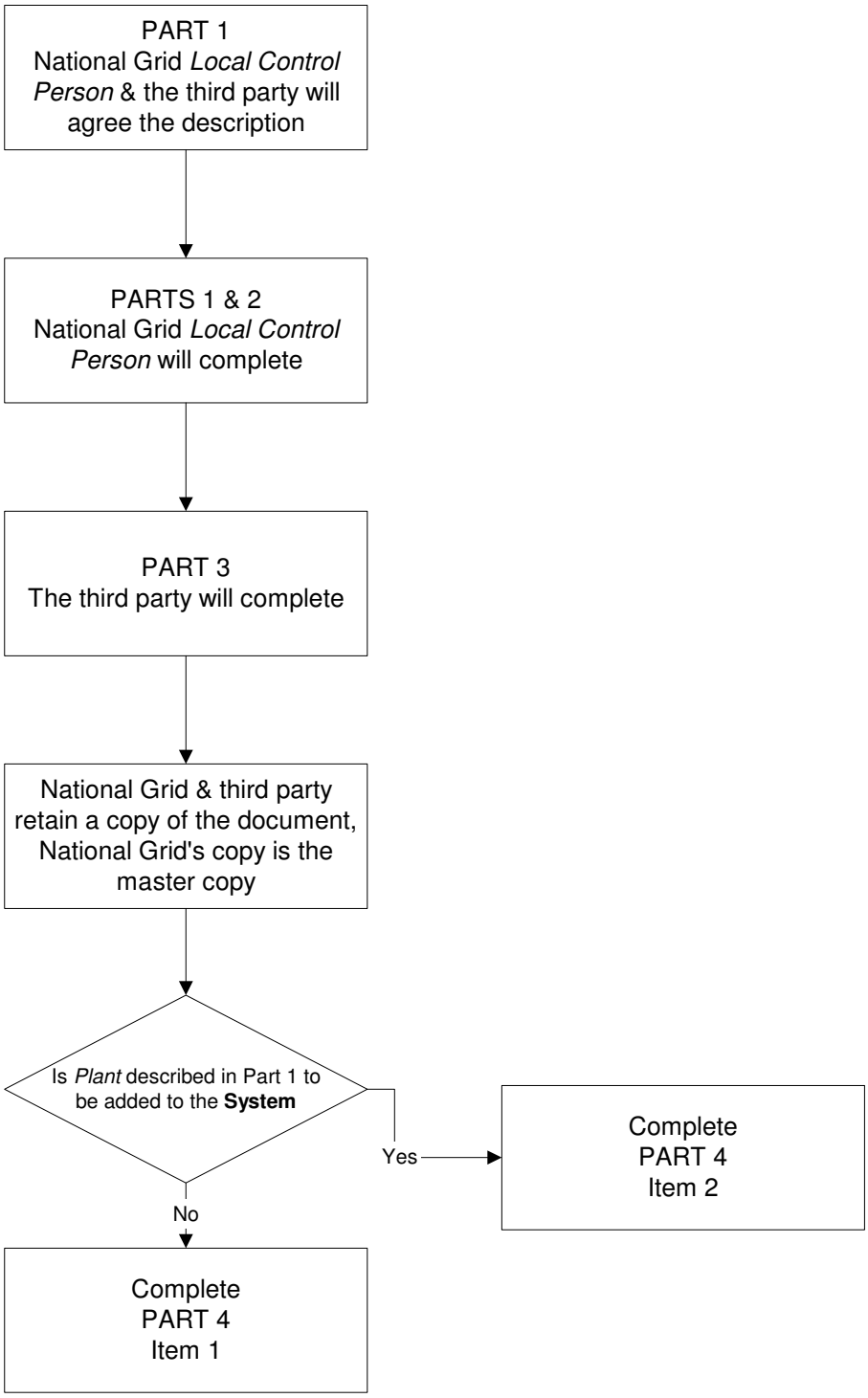
I confirm that all persons in my charge have been warned that the *Plant* specified in Part 1 will become part of the National Grid **System** and that no further work shall be done on or near to the **Equipment** unless it is sanctioned by a **Senior Authorised Person** in accordance with the requirements of the National Grid Electricity Safety Rules

Company
Name.....**Signature**.....**Time**.....**Date**.....

National Grid
Name.....……**Signature**.....**Time**.....**Date**.....
Local Control Person

* Delete as appropriate

SYSTEM CONNECTION FORM



APPENDIX 4

ISOLATION REQUEST FORM
(EARTHING, LV AND MECHANICAL EQUIPMENT)

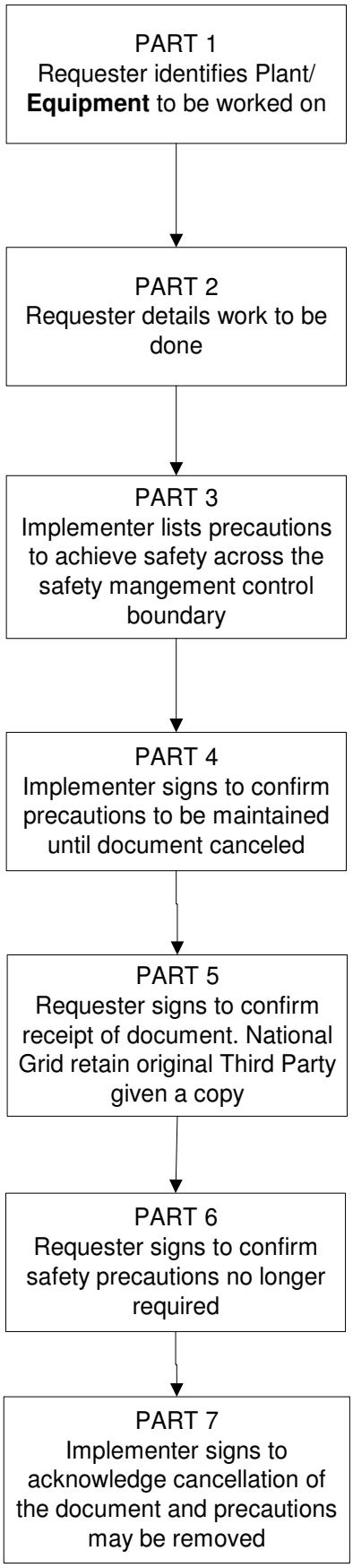
This certificate is used to define and secure and maintain safety precautions across the interface of two Safety Management Systems. A safety document is required prior to work commencing on the equipment. This form is not a safety document.

LOCATION……. NUMBER…….

Part 1	*Requester's Plant/**Equipment*** identification * Delete as appropriate			
Part 2	Requester's work to be done			
Part 3	Implementer's precautions to achieve Safety across the boundary between two safety management systems.			
Part 4	Implementer's confirmation that the above Safety Precautions have been established and will not be removed until this document has been cancelled.	Signature	Name	
		Company Name	Time	Date
Part 5	Requester's confirmation of receipt	Signature	Name	
		Company Name	Time	Date

CLEARANCE				
Part 6	Requester's confirmation that the above Safety Precautions in part 3 are no longer required.	Signature	Name	
		Company Name	Time	Date

CANCELLATION				
Part 7	Implementer's acknowledgement of cancellation	Signature	Name	
		Company name	Time	Date

APPENDIX 5

ISOLATION REQUEST FORM (Flow Chart)