

NORTHERN IRELAND ELECTRICITY

SAFETY RULES GUIDANCE DOCUMENT

**INSTRUCTION FOR OPERATIONS OR WORK ON THE PREMISES
OF CUSTOMERS RECEIVING HIGH VOLTAGE SUPPLY**

SRG 4

[Issue 1]

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INSTRUCTION FOR OPERATIONS OR WORK ON THE PREMISES OF CUSTOMERS RECEIVING HIGH VOLTAGE SUPPLY

1 INTRODUCTION

- 1.1 The Electricity at Work Regulations (Northern Ireland) 1991 requires that 'No person shall engage in work that requires technical knowledge or experience to prevent danger or injury, unless he has that knowledge or experience, or is under appropriate supervision'.

In certain cases the **Danger** to be avoided may not be under the sole control of either the occupier or the contractor and it may therefore be necessary for the occupier and the contractor each to appoint an Authorised Person. On other occasions, Northern Ireland Electricity employees may be acting as employees of a contractor to carry out specialised work such as maintenance, fault repairs etc. on **HV** Apparatus which is the property of the customer. On such occasions the Northern Ireland Electricity employees may have to be appointed as Authorised Persons by the occupier to operate or work on customers **HV** Apparatus.

Alternatively where Northern Ireland Electricity undertakes work on customers **HV** Apparatus as a contractor with the **Danger** to be avoided under its control it shall appoint the **Authorised Person**.

- 1.2 The written agreement of the customer to the procedures contained in this document shall be obtained before any work is undertaken on **HV** Apparatus in customer's premises.
- 1.3 Where Northern Ireland Electricity is satisfied that the customer operates effective **Switching** control and Safety Rules, Safety Documents issued by the customer shall be accepted as sufficient evidence that the necessary isolation, earthing and safety precautions have been properly carried out. In these circumstances the detailed requirements of this document need not be implemented.

Safety Documentation issued by the customer shall be countersigned by the Northern Ireland Electricity **Senior Authorised Person**.

Alternatively, the Northern Ireland Electricity Engineer may accept the customer's Safety Documentation and then issue a Northern Ireland Electricity **Safety Document** to the staff under his control.

2 SCOPE

This Safety Rules Guidance Document and accompanying Appendices give guidance on the procedures to be followed in relation to the operations associated with the provision of supplies to customers at **HV**. The procedures include those to be adopted when Northern Ireland Electricity employees or contractors carry out work on Northern Ireland Electricity or customers **HV** Apparatus situated on customer's premises when such Apparatus can be energised either by Northern Ireland Electricity controlled switchgear or customer controlled switchgear or both Northern Ireland Electricity controlled and customer controlled switchgear. The procedures also include those to be adapted when customers carry out work on **HV** Apparatus on their premises when such Apparatus can be energised by either Northern Ireland Electricity controlled switchgear or both Northern Ireland Electricity controlled and customer controlled switchgear. This also includes cases where **HV** Apparatus can be energised from **LV** sources. Northern Ireland Electricity Policy on planning the methods of supply at **HV** is explained in Northern Ireland Electricity Network Policies and Procedures documents.

3 DEFINITIONS

Terms printed in bold type (other than in headings) are as defined in the Northern Ireland Electricity Safety Rules (Electrical and Mechanical) and are as follows:

Apparatus – All equipment forming part of the **System** in which electrical conductors are used, supported, or of which they may form a part, and for which Northern Ireland Electricity has a maintenance responsibility.

Approved - Sanctioned by the Chairman of the Electrical & Mechanical Safety Advisory Committee (EMSAC) for use.

Caution Notice - A notice in **Approved** form conveying a warning against interference.

Earthing Device

An **Approved** means of providing a connection between a conductor and earth, being one of the following:

- (i) **Primary Earth** – A fixed or portable **Earthing Device** applied at a position defined in a **Safety Document**.
- (ii) **Drain Earth** - A fixed or portable **Earthing Device** applied for the purpose of protection against induced voltages or inadvertent backfeed.

Danger – A risk, to health or of bodily injury.

High Voltage (HV) – A voltage exceeding 1000 volts.

Isolated - Disconnected from associated **Plant** and/or **Apparatus** by an **Isolating Device(s)** in the isolating position, or by adequate physical separation or sufficient gap.

Isolating Device - A device for rendering **Plant** and **Apparatus Isolated**.

Keys

Being one of the following:

- (i) **Safety Key** – A key unique at the **Location** capable of operating a lock which will cause an **Isolating Device, Earthing Device, vent or drain** to be **Locked**.
- (ii) **Key Safe Key** - A key unique at the **Location** capable of operating a lock, other than the control lock, on a **Key Safe**.

Key Safe – A device of an **Approved** type for the secure retention of **Keys**.

Location – Any place at which work or testing under the Northern Ireland Electricity Safety Rules is carried out.

Low Voltage (LV) - A voltage not exceeding 1000 volts.

Persons

Being one of the following:

- (i) **Competent Person** – A **Person** who has sufficient technical knowledge and/or experience to avoid **Danger** who may receive, transfer and clear specified **Safety Documents** when nominated by an appropriate officer of Northern Ireland Electricity.
- (ii) **Authorised Person** – A **Competent Person** who has been nominated by an appropriate officer of Northern Ireland Electricity to carry out duties specified in writing.
- (iii) **Senior Authorised Person** – An **Authorised Person** nominated by an appropriate officer of Northern Ireland Electricity to carry out duties specified in writing, including the preparation, issue and cancellation of specified **Safety Documents**.
- (iv) **Control Person** – A **Person** who has been nominated by an appropriate officer of Northern Ireland Electricity to be responsible for controlling and co-ordinating safety activities necessary to achieve **Safety from the System**.

Plant - Fixed and movable items of equipment, other than **Apparatus**, forming part of the **System**, for which Northern Ireland Electricity has a maintenance responsibility.

Safety Document

Being one of the following:

- (i) **Limited Work Certificate** – A **Safety Document** of a format indicated in the Northern Ireland Electricity Safety Rules (Electrical and Mechanical), which defines the limits within which work or testing may be carried out and specifies necessary precautions.
- (ii) **Permit for Work** - A **Safety Document** of a format indicated in the Northern Ireland Electricity Safety Rules (Electrical and Mechanical), specifying the **Plant** and/or **Apparatus** to be worked on, the work to be carried out and the actions taken to achieve **Safety from the System**.
- (iii) **Sanction for Test** - A **Safety Document** of a format indicated in the Northern Ireland Electricity Safety Rules (Electrical and Mechanical), specifying the **Plant** and/or **Apparatus** to be tested, making known the conditions under which the testing is to be carried out and confirming actions which have been taken to achieve **Safety from the System**.

Safety from the System – That condition that safeguards persons working on or testing **Plant** and/or **Apparatus** from the **Dangers** which are inherent in the **System**.

Switching – The operation of circuit breakers, disconnectors/isolators, fuses or other methods of making or breaking an electrical circuit, and/or the application and removal of **Primary Earths**.

System - Items of **Plant** and **Apparatus** which are used separately or in combination in any process associated with the generation, transmission or distribution of electricity.

4 GENERAL REQUIREMENTS

Full details are given in the Appendices to this Guidance Document of procedures relating to operations on Apparatus which can be energised by Northern Ireland Electricity controlled or customer controlled switchgear. In addition steps shall normally be taken as far as possible to prevent the customer inadvertently applying an **Earthing Device** to Northern Ireland Electricity **HV** systems viz., by operation of an integral earthing arrangement. Where there is joint operation of Apparatus between Northern Ireland Electricity and the customer it shall be normal to apply both Northern Ireland Electricity and customer Safety Locks to the **Apparatus**.

This shall be accomplished by the use of an 'Itex Lokgard' or similar device. In order to comply with statutory requirements it shall be necessary whatever the arrangements of supply, for the customer in an emergency to disconnect supply from his Apparatus.

5 CONTROL OF APPARATUS ON CUSTOMER'S PREMISES

- 5.1 Control of the switchgear used to isolate and or earth the circuit to be worked on determines the responsibility for the procedure to be followed. In general, the customer's Authorised Person shall operate the customer-controlled switchgear and Northern Ireland Electricity's **Authorised Person** shall operate the Northern Ireland Electricity controlled switchgear.
- 5.2 An ownership, control and operation diagram shall be prepared where a customer has **HV** Apparatus. The diagram shall show the relationship between the Apparatus to be worked on and the associated local network and shall indicate all points of isolation irrespective of voltage.

Where work to be preformed involves Northern Ireland Electricity supply intake positions, the diagram shall indicate the respective ownership and control and operation of the Apparatus involved.

This diagram shall be checked at the time any work or operations are to be carried out on the relevant Apparatus. A typical diagram is shown in Appendix A.

6 AUTHORISATION OF NORTHERN IRELAND ELECTRICITY PERSONS TO OPERATE CUSTOMER CONTROLLED SWITCHGEAR

- 6.1 When at the request of the customer it is necessary for a Northern Ireland Electricity **Authorised Person** to operate the customer's **HV** switchgear, the customer's authority in writing shall first be obtained. The customer shall be responsible for any damage to Apparatus resulting from such operation, except in the cases where damage is caused by negligence on the part of Northern Ireland Electricity. The customer shall indemnify Northern Ireland Electricity against any claim arising from damage to property or injury to Northern Ireland Electricity's employees, customer's employees or third party except where negligence on the part of Northern Ireland Electricity can be proven. A typical form of Authorisation / Indemnity is shown in Appendix B.

The Operation, Isolation and Earthing Log is not regarded as an authorisation for this purpose. Where a Northern Ireland Electricity **Senior Authorised Person** is appointed as the customer's Authorised Person or where Northern Ireland Electricity, as Contractor, takes control of the **Danger** to be avoided, the Operation, Isolation and Earthing Log shall not be required, but where work is to be carried out by customer's personnel an Operation, Isolation and Earthing Log shall be used (a model form of which is shown in Appendix E).

- 6.2 When a Northern Ireland Electricity **Authorised Person** requires to operate customers **HV** switchgear, all practical steps shall be taken to ensure that he has adequate knowledge of the Apparatus concerned.
- 6.3 The Northern Ireland Electricity **Authorised Person** is at all times acting as an agent of Northern Ireland Electricity when he is carrying out operational duties and this is the case even when he is operating on the premises of a customer, provided he is there on Northern Ireland Electricity business.
- 6.4 If the Northern Ireland Electricity **Authorised Person** has any doubt about work on, or operation of, customer's switchgear, he can refer any objection to the person issuing the instructions who would have the matter investigated and, if necessary, refer to a higher authority.

7 AUTHORISATION OF CUSTOMERS PERSONS TO OPERATE NORTHERN IRELAND ELECTRICITY CONTROLLED SWITCHGEAR

- 7.1 Where the necessity arises in compliance with Electricity Regulations for the customer to be provided with the facility to disconnect supplies to his Apparatus, the customer may be given permission by Northern Ireland Electricity to carry out such operations as are necessary to disconnect the incoming supplies to his Apparatus.

- 7.2 Unless there is a formal agreement to the contrary, customers shall not be able to parallel at **HV** Northern Ireland Electricity incoming supplies. To ensure that this is so, suitable interlocking features shall where practicable be fitted.

Where a customer is given the facility of changing over supplies for his operational convenience he shall advise Northern Ireland Electricity's **Control Person** before carrying out such operations. Where the customer is afforded special facilities for operating Northern Ireland Electricity's switchgear he shall nominate specific persons for this purpose. The person so nominated shall be notified to Northern Ireland Electricity in writing and approved by Northern Ireland Electricity in writing.

- 7.3 The customer shall be responsible for any damage to Northern Ireland Electricity's **Apparatus** resulting from such operation, except in the cases where damage is caused by negligence on the part of Northern Ireland Electricity. The customer shall indemnify Northern Ireland Electricity against any claim arising from damage to property or injury to Northern Ireland Electricity's employees, customer's employees or third party except where negligence on the part of Northern Ireland Electricity can be proven. A standard form of Indemnity is shown in Appendix C.

8 WORK ON HV APPARATUS WHICH CAN BE ENERGISED BY SWITCHGEAR CONTROLLED BY NORTHERN IRELAND ELECTRICITY

8.1 When Work is to be carried out by Northern Ireland Electricity Personnel

8.1.1 The de-energising, isolation, earthing and issue of **Permit For Work, Limited Work Certificate** or **Sanction For Test** shall be carried out by an **Authorised Person** or **Senior Authorised Person** in accordance with Northern Ireland Electricity Safety Rules, other associated Safety Rules Instructions issued by Northern Ireland Electricity and the requirements of supporting mandatory documents. **Safety Keys** shall be secured by Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person**.

8.1.2 Where the Apparatus on which work is to be carried out is owned by the customer, the customer's Authorised Person shall issue Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** with a written instruction to proceed with the work (see Appendix D).

8.2 When Work is to be carried out by Customer's Personnel

8.2.1 The customer's Authorised Person shall request in writing, isolation and earthing from Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** using an Operation, Isolation and Earthing Log (see Appendix E). The de-energising, isolation and earthing shall be carried out by Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** in accordance with Northern Ireland Electricity Safety Rules. Where the customer requests double locking this shall be carried out and if necessary a device such as the 'Itex Lokgard' used.

The customer's Authorised Person shall be asked to accompany Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** during isolation and earthing of the switchgear controlled by Northern Ireland Electricity.

Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall confirm completion of the customer's request on the Operation, Isolation and Earthing Log and return it to the customer's Authorised Person.

8.2.2 The customer's personnel shall then carry out their work on the Apparatus concerned under the customer's safety documentation.

8.2.3 On completion of the work the customer's Authorised Person shall request in writing, removal of earthing and re-energisation of the Apparatus by using the Operation, Isolation and Earthing Log.

9 WORK ON HV APPARATUS WHICH CAN BE ENERGISED BY SWITCHGEAR CONTROLLED BY THE CUSTOMER

9.1 When Work is to be carried out by Northern Ireland Electricity Personnel

9.1.1 The Northern Ireland Electricity **Authorised Person** or **Senior Authorised Person** shall request in writing on an Operation, Isolation and Earthing Log, the customer's Authorised Person to carry out de-energising, isolation and earthing of the Apparatus.

If, however a Northern Ireland Electricity **Authorised Person** or **Senior Authorised Person** is appointed, by the customer, to act as the customer's Authorised Person, the Operation, Isolation and Earthing Log shall not be required, and work can proceed as under Clause 8.1.

9.1.2 All de-energising, isolation and earthing shall be carried out by the customer's Authorised Person who shall be accompanied by Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person**. Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall satisfy himself that the isolation and earthing of the equipment has been carried out to meet the requirements of Northern Ireland Electricity Safety Rules and supporting mandatory documents.

9.1.3 The customer's Authorised Person shall apply his Safety Locks at each point of isolation from supply, the customer's Authorised Person securing the keys to those locks. The Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall apply his own Safety Locks at each point of Isolation from Supply, the Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** securing the **Keys** to his locks.

If two locks cannot be applied at a point of Isolation, a device such as the 'Itex Lokgard' may be used to facilitate multiple locking or a single Safety Lock and **Key Safe** may be used. Where a **Key Safe** is used, on unique **Key Safe Key** shall be held by the customer's Authorised Person and another by the Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person**. The customer's Authorised Person shall confirm completion of the request using the Operation, Isolation and Earthing Log and return it to the Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person**.

9.1.4 Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall affix suitable **Caution Notices** and **Danger Notices**.

9.1.5 When the Apparatus on which work is to be carried out is owned by the customer, the customer's Authorised Person, after completion of the isolation and earthing of the Apparatus shall issue Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** with a written instruction to proceed with the work (see Appendix D).

The instruction shall contain confirmation of all details of the work to be undertaken on the Apparatus.

9.1.6 Northern Ireland Electricity's **Senior Authorised Person** shall then issue a **Permit For Work, Limited Work Certificate** or **Sanction For Test** in accordance with Northern Ireland Electricity Safety Rules and supporting mandatory documents.

9.1.7 On completion of the work, the **Permit For Work, Limited Work Certificate** or **Sanction For Test** shall be cleared and cancelled in accordance with Northern Ireland electricity Safety Rules and supporting mandatory documents.

9.1.8 Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall then remove Northern Ireland Electricity Safety Locks and inform the customer's Authorised Person accordingly by the Operation, Isolation and Earthing Log.

9.2 **When Work is to be carried out by Customer's Personnel**

No action is required to be taken by Northern Ireland Electricity. It is the responsibility of the customer to comply with the Electricity at Work Regulations (Northern Ireland) 1991. The customer's personnel shall then carry out their work on the Apparatus concerned under the customer's safety documentation. When any of the Apparatus on which work is to be carried out is owned by Northern Ireland Electricity (e.g. a transformer on hire) the customer shall give Northern Ireland Electricity reasonable notice prior to the commencement of the work.

10 **WORK ON APPARATUS WHICH CAN BE ENERGISED BY SWITCHGEAR CONTROLLED BY NORTHERN IRELAND ELECTRICITY AND BY SWITCHGEAR CONTROLLED BY THE CUSTOMER**

10.1 **General Requirements**

10.1.1 Where the equipment to be worked on can be disconnected from supply only by the operation of both Northern Ireland Electricity controlled and customer controlled switchgear, Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** and the customer's Authorised Person working in close liaison shall isolate and earth their respective equipment.

10.1.2 All Operation Isolation and Earthing Logs used during a unique work activity shall be cross-referenced using the associated Northern Ireland Electricity's Request for Outage and/or Planned Work (E600) reference number.

10.2 When Work is to be carried out by Northern Ireland Electricity Personnel

- 10.2.1 Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall request in writing on an Operation, Isolation and Earthing Log, the customer's Authorised Person to carry out de-energising, isolation and earthing of the Apparatus.

If, however an Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** is appointed by the customer, to act as the customer's Authorised Person, the Operation, Isolation and Earthing Log is not required.

- 10.2.2 The customer's Authorised Person shall isolate the Apparatus at each point of supply under his control and apply his Safety Locks at each point, the customer's Authorised Person securing the Keys to his locks. The Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall also apply his own Safety Locks at these points, the Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** securing the keys to his locks. If two locks cannot be applied at a point of isolation, a device such as the 'Itex Lokgard' may be used to facilitate multiple locking, or a single Safety Lock and a **Key Safe** may be used. Where a **Key Safe** is used one unique **Key Safe Key** shall be held by the customer's Authorised Person and another by Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person**.

The customer's Authorised Person shall confirm completion of the request using the Operation, Isolation and Earthing Log and return it to the Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person**. The customer's Authorised Person shall be accompanied by the Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** in the above operations. The Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** may operate the customer controlled switchgear if he has the written agreement of the customer for this purpose.

- 10.2.3 Northern Ireland Electricity's **Senior Authorised Person** shall isolate at each point of supply under his control and apply his Safety Locks to those points. Northern Ireland Electricity Safety Keys shall be secured by the Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person**.

- 10.2.4 The Northern Ireland Electricity **Authorised Person** or **Senior Authorised Person** shall in accordance with Northern Ireland Electricity Safety Rules and supporting mandatory documents, earth the Apparatus at each point of disconnection from the supply under his control, the Northern Ireland Electricity **Authorised Person** or **Senior Authorised Person** securing the **Safety Keys** where Safety Locks can be applied to lock a switch or circuit breaker in the **Earthed** position. The customer's Authorised Person shall then be requested by Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** to earth at each of the points of supply under his control. Where Safety Locks can be applied to lock a switch or circuit breaker in the **Earthed** position, the customer's Authorised Person shall apply his own Safety Locks, retaining the Keys to his locks. The Northern Ireland Electricity **Authorised Person** or **Senior Authorised Person** shall also apply his own Safety Locks at these points, the Northern Ireland Electricity **Authorised Person** or **Senior Authorised Person** securing the **Keys** to his locks. Alternatively the locking arrangements described in Clause 10.2.2 may be applied. It is essential that any Key to a lock which is used to secure a switch or circuit breaker in the **Earthed** position shall be inaccessible to unauthorised persons.
- 10.2.5 Northern Ireland Electricity's **Senior Authorised Person** shall apply Northern Ireland Electricity **Caution Notices** and **Danger Notices** as required and shall satisfy himself that isolation and earthing of the Apparatus has been carried out to the standard required by Northern Ireland Electricity Safety Rules and supporting mandatory documents.
- 10.2.6 When the Apparatus on which work is to be carried out is owned by the customer, the customer's Authorised Person shall then issue Northern Ireland Electricity's **Senior Authorised Person** with a written instruction to proceed with the work. This instruction shall contain confirmation of all details of the work to be carried out on the Apparatus.
- 10.2.7 Northern Ireland Electricity's **Senior Authorised Person** shall then issue a **Permit For Work, Limited Work Certificate** or **Sanction For Test** in accordance with Northern Ireland Electricity Safety Rules and supporting mandatory documents.
- 10.2.8 Work under a **Permit For Work, Limited Work Certificate** or **Sanction For Test** shall then proceed in accordance with Northern Ireland Electricity Safety Rules and supporting mandatory documents.

10.2.9 On completion of the work the **Permit For Work, Limited Work Certificate** or **Sanction For Test** shall be cleared by the Person in charge of the work and shall then be cancelled in accordance with Northern Ireland Electricity Safety Rules and supporting mandatory documents. Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall then remove Northern Ireland Electricity Safety Locks and inform the customer's Authorised Person by the Operation, Isolation and Earthing Log that the work by Northern Ireland Electricity's personnel is finished.

10.3 When Work is to be carried out by Customer's Personnel

10.3.1 The customer's Authorised Person shall request by an Operation, Isolation and Earthing Log for Northern Ireland Electricity's **Senior Authorised Person** to isolate at each point of supply under Northern Ireland Electricity control. Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall fit Northern Ireland Electricity Safety Locks on Northern Ireland Electricity **Apparatus** and shall retain Northern Ireland Electricity **Safety Keys** in his possession. The customer's Authorised Person shall apply his Safety Locks at these points of isolation including associated **LV** sources. If two locks cannot be applied at a point of Isolation, a device such as the 'Itex Lokgard' may be used to facilitate multiple locking or a single Safety Lock and **Key Safe** may be used. Where a **Key Safe** is used, on unique **Key Safe Key** shall be held by the customer's Authorised Person and another by the Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person**.

The Northern Ireland Electricity **Authorised Person** or **Senior Authorised Person** shall confirm isolation on the Operation, Isolation and Earthing Log and return it to the customer's Authorised Person. The customer's Authorised Person shall be asked to accompany the Northern Ireland Electricity **Authorised Person** or **Senior Authorised Person** during isolation and subsequent earthing of the Northern Ireland Electricity switchgear.

10.3.2 The customer's Authorised Person shall isolate at each point of supply under his control and apply his Safety Locks to these points, the customer's Authorised Person securing his Safety Lock Keys.

10.3.3 The customer's Authorised Person shall then earth the Apparatus at each point of disconnection of supply under his control. Northern Ireland Electricity's **Authorised Person** or **Senior Authorised Person** shall then in accordance with Northern Ireland Electricity Safety Rules, earth the Apparatus at each point of disconnection from the supply under his control and retain in his **Key Safe** the **Keys** to Northern Ireland Electricity Safety Locks fitted at points of isolation and earthing. The customer's Authorised Person shall apply his Safety Locks at each of these points. To facilitate multiple locking, a device such as the 'Itex Lokgard' may be used.

10.3.4 The customer's personnel shall then carry out their work on the Apparatus concerned under the customer's safety documentation.

10.4 **When Work is to be carried out by both Northern Ireland Electricity and Customer's Personnel**

Both the customer's Authorised Person and Northern Ireland Electricity's Authorised Person or Senior Authorised Person shall use an Operation, Isolation and Earthing Log for all isolation and earthing requests and confirmations.

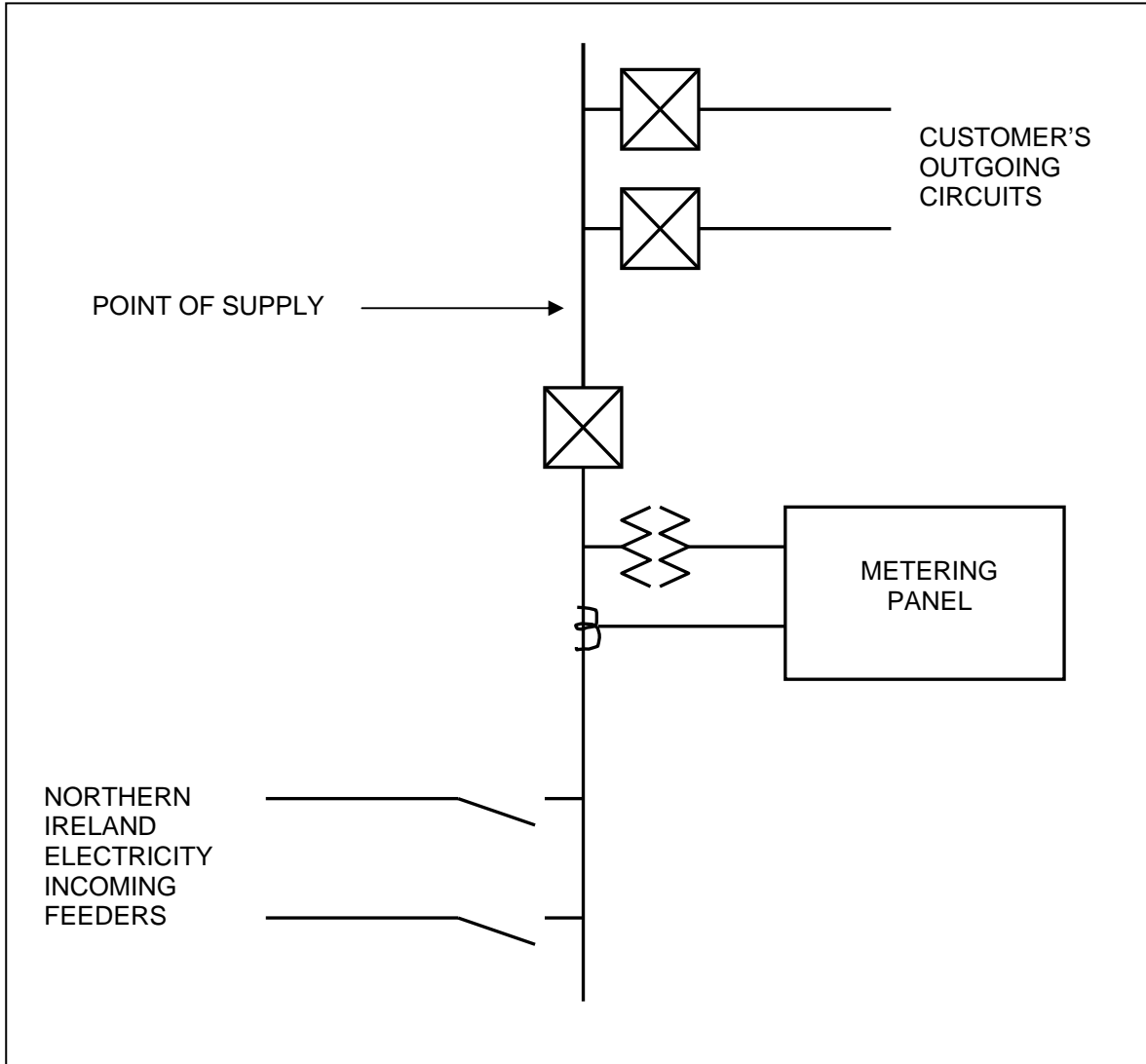
11 **COMMISSIONING PROCEDURE**

11.1 Before any supplies at high voltage are made available to the customer, the customer shall make such a request in writing. He shall state that he accepts full responsibility for the control of such supplies and shall nominate a duly authorised person to be in attendance at the time of commissioning to accept supplies on his behalf. A 'Request for the Commissioning of High Voltage Supplies' Form, (Appendix G), shall be used to make such a request. In addition to this the customer shall give to Northern Ireland Electricity a guarantee and declaration in writing regarding the electrical installation (see Appendix H).

11.2 Northern Ireland Electricity's **Senior Authorised Person** shall before commissioning supplies check that the details shown on the Ownership Diagram (Appendix A) are correct.

APPENDIX A

OWNERSHIP, CONTROL AND OPERATION DIAGRAM
OF A TYPICAL 11KV SUBSTATION



Northern Ireland Electricity



OWNERSHIP DIAGRAM
FACTORY INTAKE SUBSTATION

**AUTHORITY TO OPERATE CUSTOMER'S
HIGH VOLTAGE SWITCHGEAR**



It is part of the terms of the arrangement referred to in clause 6.1 of the Northern Ireland Electricity Safety Rules Guidance document SRG 4 that you shall indemnify Northern Ireland Electricity against any claims which may be made against Northern Ireland Electricity in respect of damage to property whether belonging to you, Northern Ireland Electricity, or third parties and also you shall indemnify Northern Ireland Electricity in respect of any claims arising out of injury to any persons whether they are your employees, or employees of Northern Ireland Electricity or injuries to persons who do not fall into either of the preceding classes, except where negligence on the part of Northern Ireland Electricity is admitted by Northern Ireland Electricity or can be proved against Northern Ireland Electricity.

If the arrangement referred to above comes into operation then it is a term and condition of that arrangement that the indemnity referred to in the preceding paragraph shall come immediately into effective force and operation.

SIGNED DESIGNATION

DATE

COMPANY

APPENDIX C

AUTHORISATION OF CUSTOMERS TO OPERATE
NORTHERN IRELAND ELECTRICITY CONTROLLED HV SWITCHGEAR

STANDARD FORM OF INDEMNITY

**AUTHORISATION OF CUSTOMER'S TO
OPERATE NORTHERN IRELAND ELECTRICITY
CONTROLLED HV SWITCHGEAR**



It is part of the terms of the arrangement referred to in clause 7.3 of the Northern Ireland Electricity Safety Rules Guidance document SRG 4 that you shall indemnify Northern Ireland Electricity against any claims which may be made against Northern Ireland Electricity in respect of damage to property whether belonging to you, Northern Ireland Electricity, or third parties and also you shall indemnify Northern Ireland Electricity in respect of any claims arising out of injury to any persons whether they are your employees, or employees of Northern Ireland Electricity or injuries to persons who do not fall into either of the preceding classes, except where negligence on the part of Northern Ireland Electricity is admitted by Northern Ireland Electricity or can be proved against Northern Ireland Electricity.

If the arrangement referred to above comes into operation then it is a term and condition of that arrangement that the indemnity referred to in the preceding paragraph shall come immediately into effective force and operation.

SIGNED DESIGNATION

DATE

COMPANY

APPENDIX F**PROCEDURE FOR USE OF HV CUSTOMER
OPERATION, ISOLATION AND EARTHING LOG**

The HV Customer Operation, Isolation and Earthing Log has been designed for use in situations where Northern Ireland Electricity carries out operations and/or work on Apparatus controlled by a customer or when customers carry out operations and/or work on Northern Ireland Electricity controlled Apparatus.

The log has also been designed to cover the situation where work is to be undertaken by customer's or Northern Ireland Electricity's employees, or in fact both groups of personnel, on Apparatus which is capable of being energised by equipment which is under the customer's control and also by Apparatus which is under Northern Ireland Electricity's control. The general requirements for use of the log are as follows.

- (a) All entries shall be clear and legible and shall include the name of the Person issuing the request. All sections of the log shall be completed.
- (b) A ball point pen shall be used for all entries. (Other types of pen may 'run' when the pages are in contact with water).
- (c) There shall be no spaces between entries in the log. Times shall be recorded in 24 hour format.
- (d) Alterations should be avoided - if this is not possible then the alteration is carried out by drawing a line through the word or words to be deleted and inserting the new word or words. Entries shall not be erased.
- (e) Requests recorded on the log must be carried out exactly and in the strict sequence issued. No earthing operations shall be requested before all isolation operations have been completed and acknowledged.
- (f) Operational requests shall be carried out only by the person to whom the request has been issued or by a person in training under their personal supervision.
- (g) If the person receiving the request has any query regarding the request he shall raise this with the issuing person before carrying out any part of the request.
- (h) If during any switching operation an abnormality occurs the switching sequence will be immediately stopped and the issuing person informed.
- (i) Issue of keys or safety documents shall be recorded on the log.
- (j) The associated E600 number or where this is not available the associated NAFIRS number shall be used to create a unique log number. The log number shall contain the prefix OIEL.

Where practicable the requirements of the Northern Ireland Safety Rules, Safety Rules Instructions and other mandatory documents shall be complied with.

The HV Customer Operation, Isolation and Earthing Log is designed to be used in the following situations:-

1 When Work is to be carried out by Customer's Personnel on Equipment which can be Energised from Switchgear Controlled by Northern Ireland Electricity

The customer's Authorised Person shall request isolation / earthing using the HV Customer Operation, Isolation and Earthing Log. The NIE **Authorised Person** shall following consultation with the NIE Distribution Control Centre record and carry out the required isolation / earthing in accordance with Northern Ireland Electricity Safety Rules, other associated Safety Rules Instructions issued by Northern Ireland Electricity and the requirements of supporting mandatory documents. Following this he shall then confirm completion of the request to the customer's Authorised Person using the HV Customer Operation, Isolation and Earthing Log. The points of isolation and/or earthing shall be specified on the HV Customer Operation, Isolation and Earthing Log. The customer's Authorised Person shall acknowledge the completion of the request on the HV Customer Operation, Isolation and Earthing Log and can then proceed to carry out his work by issuing his own Safety Documents.

On completion of the work the customer's Authorised Person shall confirm his work complete and his earthing removed on the HV Customer Operation, Isolation and Earthing Log. He shall request the removal of earths and re-energisation of the HV Apparatus using the HV Customer Operation, Isolation and Earthing Log.

2 When Work is to be carried out by Northern Ireland Electricity's Personnel on Equipment which can be Energised by Switchgear Controlled by a Customer

The procedure to be followed will be as in 1 above with the roles of Northern Ireland Electricity's **Senior Authorised Person** and the customer's Authorised Person interchanged i.e. Northern Ireland Electricity's **Senior Authorised Person** will request the required isolation with the customer's Authorised Person confirming completion.

3 When Work is to be carried out by Northern Ireland Electricity Personnel on Equipment which can be Energised by either Northern Ireland Electricity or the Customer

The Northern Ireland Electricity's **Senior Authorised Person** shall request isolation of the customer's controlled switchgear using the HV Customer Operation, Isolation and Earthing Log. When the isolation has been completed the customer's Authorised Person will confirm and record the details of the isolation on the HV Customer Operation, Isolation and Earthing Log. Following his acknowledgement of the completion of this request the Northern Ireland Electricity's **Authorised Person** shall then proceed to isolate and earth the **Apparatus** that is under the control of Northern Ireland Electricity. On completion of this the customer's Authorised Person shall be requested to earth the Apparatus under his control using the HV Customer Operation, Isolation and Earthing Log.

When this earthing has been completed, it shall be confirmed and recorded as above and acknowledged by the Northern Ireland Electricity's **Senior Authorised Person**. The work can proceed following the issue of the necessary Safety Document.

On completion of work and cancellation of the necessary Safety Documents which shall be recorded on the HV Customer Operation, Isolation and Earthing Log, the removal of earthing and isolation on the customer's controlled Apparatus will be carried out in the same manner as described above.

4 When Work is to be carried out by Customer's Personnel on Equipment which can be Energised by either Northern Ireland Electricity or the Customer

The procedure to be followed will be as in **3** above with the roles of Northern Ireland Electricity's **Senior Authorised Person / Authorised Person** and the customer's Authorised Person interchanged i.e. Northern Ireland Electricity's **Senior Authorised Person** will request the required isolation with the customer's Authorised Person confirming completion.

5 When Work is to be carried out by both Northern Ireland Electricity's and Customer's Personnel on Equipment which can be Energised by either Northern Ireland Electricity or the Customer

In this case it will be necessary for the customer's Authorised Person to request isolation of the **Apparatus** controlled by Northern Ireland Electricity and for Northern Ireland Electricity's **Senior Authorised Person** to request isolation of the Apparatus controlled by the customer. The procedures for requesting, recording and confirmation will be as described above. The requests and confirmations shall be where practicable be recorded on the same HV Customer Operation, Isolation and Earthing Log. If the same log cannot be used then all logs used for the isolation and earthing requests shall be cross-referenced using the associated Northern Ireland Electricity's Request for Outage and/or Planned Work (E600) reference number.

It is important to ensure that in all instances of utilising this procedure that isolation is completed, recorded and acknowledged before any earthing request is accepted. Also that during the re-energisation process all earthing is removed, recorded and acknowledged before any request for removal of isolation is accepted.

APPENDIX G

REQUEST FOR THE COMMISSIONING OF HIGH VOLTAGE SUPPLIES

ISSUE:-

FROM:

TO: NORTHERN IRELAND ELECTRICITY

Please energise the under noted apparatus at the time and date indicated. All staff have been warned of the intention to energise this equipment, all work has been completed, all Earthing Devices have been removed and where necessary warning notices posted.

CIRCUIT / PLANT DESCRIPTION: -

EXPLANATORY SKETCH: -

COMMISSION ATHrs on

I declare that I am the above customers authorised person and accept full responsibility for the request to commission the above apparatus.

Signed (Customer's authorised person)

Date.....

RECEIPT:-

I acknowledge receipt of the above request.

Signed (NIE SENIOR AUTHORISED PERSON)

Date.....

CLEARANCE:-

I hereby confirm that the above noted equipment was energised athrs on

Signed (NIE SENIOR AUTHORISED PERSON)

Date.....

APPENDIX H

CUSTOMERS GUARANTEE AND DECLARATION FORM

Guarantee and declaration to be given to Northern Ireland Electricity by an applicant before connection of a supply of electricity at high voltage

We, the undersigned officers of

hereby Guarantee that ever portion of the electrical installation at our premises situated at

which is in use at high voltage will be maintained in an efficient state and, if so required, to the satisfaction of Northern Ireland Electricity; that in cases where the said portion of the electrical installation is not enclosed in a building or other structure to which access can only be obtained by means of a key or special appliance, an authorised person will be available to cut off the supply in the event of emergency; and that instructions as to the treatment of persons suffering from electric shock will be displayed in our premises.

We also declare that the electrical installation is so designed and will be so maintained.

- (i) That no metalwork designed to be electrically charged at high voltage will normally be exposed so that it can be touched.
- (ii) That all conductors for use at high voltage (other than overhead lines, overhead bus-bars and connections) are completely enclosed in metal which is electrically continuous and adequately protected against mechanical damage.
- (iii) That all metalwork enclosing, supporting or associated with the electrical installation, other than that designed to serve as a conductor, is where necessary to prevent danger connected with earth.
- (iv) That the supply of energy to each motor or separate piece of apparatus is controlled by an efficient cut-off switch placed in such a position as to be readily accessible to and easily operated by the person in charge of the said motor or apparatus and so connected in circuit that by its means all voltage can be cut off from the motor or apparatus itself and from any regulating switch, resistance or other device associated therewith.
- (v) That all windings at high voltage of motors or other apparatus within reach from any position in which a person may require to be are efficiently protected so as to prevent danger.

- (vi) That where transforming apparatus is used, suitable provision is made, either by connecting with earth a point of the circuit at the lower voltage or otherwise, to guard against danger by reason of the said circuit becoming accidentally charged above its normal voltage by leakage from or contact with the circuit at the higher voltage.
- (vii) That unless the conditions are such that the whole of the conductors and apparatus for use at high voltage may be made dead at the same time for the purpose of cleaning or other work thereon, the said conductors and apparatus are so arranged that they may be made dead in sections, and that such sections are so separated by divisions or screens from all adjacent metal which is live that work on any section made dead may be carried out by an authorised person without danger.
- (viii) That adequate working space is provided in front of any switchboard (other than panels for controlling circuits at low voltage) and at parts of the installation where live conductors can be exposed.
- (ix) That adequate means are provided for preventing access by the public or any unauthorised person to any part of the installation which is designed to be electrically charged at high voltage.

For and on behalf of

Dated this day of Two Thousand and