

National Grid UK Electricity Transmission plc

Uncontrolled when printed

NATIONAL SAFETY INSTRUCTION


Guidance Notes

NSI 14 AUTOMATICALLY AND/OR REMOTELY CONTROLLED EQUIPMENT

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DOCUMENT HISTORY

Issue	Date	Summary of Changes / Reason	Author(s)	Approved By (Title)
1	September 2010	New Guidance Document to follow 3 rd edition Electricity Safety Rules layout.	NSI Working Group	MDE Manager Les Adams 

KEY CHANGES

Section	Amendments

AUTOMATICALLY AND/OR REMOTELY CONTROLLED EQUIPMENT

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1 Purpose and Scope

To provide guidance on National Safety Instruction 14, when applying principles established by the Safety Rules to protect personnel from **Danger** arising due to the operation of **Equipment** which is automatically and/or remotely controlled or when working on automatic / remote control systems.

Equipment can have both automatic and remote control features capable of initiating an operation. The **Equipment** may be actuated by mechanical, hydraulic, pneumatic or electrical means.

The layout of this guidance note reflects that of legislative codes of practice, where the rule (or mandatory obligation) is identified by a green panel on the left-hand side. The guidance follows after the rule and is identified by a blue panel.

Within National Grid the guidance notes hold equivalent status of an Approved Code of Practice (ACOP) in law. If not followed, you will be required to demonstrate that your safe system of work is of an equal or higher standard.

2 Definitions

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

Title	Definition
<i>Automatically Controlled</i>	Operation of Equipment by control systems such as protection, pressure devices and voltage control
<i>Remotely Controlled</i>	Operation of Equipment from points remote from the Equipment itself such as on site from the Substation Control Point or Remote Control Point

3 Dangers

The **System Danger(s)** to personnel working on **Equipment** which has automatic and/or remote control systems, may arise from the inadvertent operation of the **Equipment**, if these systems have not been **Isolated** from the **Equipment**. These are:

- Electric shock due to inadvertent re-energisation
- Inadvertent operation of moving parts
- Sudden release of high pressure and noise due to inadvertent operation

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4 Work on Equipment which is Automatically and/or Remotely Controlled

- 4.1 When work is to be carried out on **Equipment** that is *Automatically Controlled* and/or *Remotely Controlled*, **Point(s) of Isolation** shall be established to prevent inadvertent operation.

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4 Work on Equipment which is Automatically and/or Remotely Controlled

- 4.1 An example of where inadvertent operation may occur is during circuit breaker maintenance, where the **Safety Document** allows the restoration of motive power.

Remote operation via the local remote switch, which is possible when restoring motive power, is controlled by the implementation of the appropriate ROMP procedure. This will allow maintenance of the local / remote switch to be carried out.

The **Senior Authorised Person** shall ensure **Point(s) of Isolation** are established on the protection (e.g. 'S' links where fitted) and where applicable intertrip receive isolation links. This ensures the **Safety Document** recipient is in sole control of the operation of the **Equipment**.

Reference shall be made to protection drawings to determine **Point(s) of Isolation**.

Figure 4.1 – Example of Protection Multiple “S” Link Isolation



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5 Work on Automatic and/or Remote Control Systems

- 5.1 When work on the *Automatically Controlled* and/or *Remotely Controlled* system is to be carried out with the **Equipment** in service, the **Senior Authorised Person** shall first obtain agreement from the appropriate **Control Person(s)** for the work to proceed.

The **Senior Authorised Person** shall ensure that any inadvertent operation of **Equipment** is prevented.

The **Senior Authorised Person** shall ensure that **Personnel** in the vicinity of **Equipment** which may operate as a result of work carried out are not exposed to **Danger**.

The **Senior Authorised Person** shall cancel the agreement for work to proceed with the appropriate **Control Person(s)**.

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5 Work on Automatic and/or Remote Control Systems

- 5.1 Examples of work on Automatic and/or remote control systems in service are:-

- Operational test on Diesel Generator control system
- In service DAR tests / fault finding
- Trip Tests
- Intertrip Equipment

Appendix A - Authorisation Matrix for Contractors Personnel

Contractors appointment under this NSI shall be limited to the following sections.

Contractor Personnel	Person	Competent Person	Authorised Person	Senior Authorised Person
Sections	N/A	N/A	N/A	N/A