



INTERLOCKS AND ADJUSTMENTS OF SWITCHGEAR MECHANISMS

OPERATIONAL SAFETY MANUAL - SECTION 4.7

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PR-NET-OSM-031	Interlocks and Adjustments of Switchgear Mechanisms - Operational Safety Manual - Section 4.7		Applies to	
			Distribution ✓	Transmission
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1 Introduction

- 1.1 Interlocks are installed to prevent operation of **Apparatus** and **Plant** outside of normal parameters. Interlock modes include key exchange schemes, electrical, electro-mechanical or mechanical arrangements built into the **Apparatus**. Only under exceptional circumstances **Shall** an appropriately **Authorised Person** carry out operations to override the function of an interlock.
- 1.2 This document defines the **Approved** procedure for the operations to be taken to override the function(s) of an interlock under an exceptional circumstance.
- 1.3 Compliance with the following procedures **Shall** enable staff to work safely and reduce the risk of injury to themselves and their colleagues.

2 Scope

- 2.1 The scope of this procedure **Shall** be limited to **Senior Authorised Persons** to carry out operations that override the function of an interlock on **Plant** and **Apparatus** associated with the **System**.
- 2.2 The procedures included herein have been developed to minimise **System** incidents by ensuring that:
- A consistent approach is maintained for the control and operation of the **System**
 - The recipient of a **Switching** instruction undertakes the relevant planning and communication to ensure human error and associated **Danger** is, as far as is reasonably practicable, avoided
 - At all times consideration is given to the operating characteristics of the **System**

3 References

The documents detailed in Table 3.1 - Scottish and Southern Electricity Networks Documents, should be used in conjunction with this document.

Table 3.1 - Scottish and Southern Electricity Networks Documents

Reference	Title
PR-NET-OSM-006	SSEN Operational Safety Rules – Operational Safety Manual – Section 1.1
PR-NET-OSM-028	Switching Terminology and Approved Abbreviations - Operational Safety Manual - Section 4.4
WI-NET-OSM-002	Personal Protective Equipment and Workwear for Live Environments
N/A	SSEN SHE Handbook (Held in Safety, Health and Wellbeing SharePoint Site)

4 Definitions

- 4.1 The words printed in bold text within this document are either headings, or defined within Section 2 of the **OSR**.

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5 General Responsibilities

- 5.1 Persons who are required to operate and undertake work on the **System** or part thereof, **Shall** have a thorough understanding of the work and ensure on-site risks are suitably assessed and appropriate control measures put in place before, during and after all activities.
- 5.2 Persons must ensure that at all times during the work (or associated testing) **General Safety** arrangements are maintained and that other work areas are not adversely affected by the activities for which they are responsible.

6 Authorisation

- 6.1 Persons who are required to undertake work or **Switching** duties on the **System Shall** hold the appropriate competence and authorisation to carry out specified duties. It **Shall** be the responsibility of the individual to ensure that any actions performed are within the bounds of their competency and authority level.
- 6.2 Competence and authorisation certificates **Shall** be retained personally and be made available upon request.

7 Records

- 7.1 Where it is necessary to carry out operations to override the function of an interlock, the **Control Engineer** giving authority **Shall** record each **Switching** instruction accordingly.
- 7.2 The issue and cancellation of any **Safety Document** relating to adjustments to switchgear mechanisms **Shall** be recorded by the **Control Engineer** as a separate item on the **Switching** schedule. The **Safety Document Shall** be retained for a minimum period of 12 months in-line with management procedures.
- 7.3 The recipient of the **Switching** instructions **Shall** make a written record of all instructions including the issue and cancellation of a **Safety Document** on the appropriate field **Switching** schedule or **Switching** log. Written records **Shall** be retained for a minimum period of 12 months in-line with management procedures.
- 7.4 Associated method statements **Shall** be used to record the reasons for the actions and the methods that will be used to override the function of an interlock.
- 7.5 Where risk assessment forms are used, they **Shall** be retained for a minimum of period of 12 months in-line with management procedures.

8 Personal Protective Equipment

- 8.1 Persons who are required to undertake **Switching** on the **System Shall** wear suitably **Approved** Personal Protective Equipment (PPE). Furthermore, where warning labels or signs identify the existence of a particular hazard, additional and appropriate PPE **Shall** be worn.
- 8.2 As a minimum, PPE **Shall** meet the requirements of WI-NET-OSM-002.

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9 General Requirements

- 9.1 A minimum of two appropriately authorised **Senior Authorised Persons Shall** attend site when there is a requirement to carry out operations to override an interlock.
- 9.2 One **Senior Authorised Person** attending site **Shall** be nominated to communicate directly with the **Control Engineer**, receive **Switching** instructions, and carry out the relevant operations.
- 9.3 The second **Senior Authorised Person** attending site **Shall** act as a monitor, verifying all **Switching** instructions issued, the work to be undertaken, the method of work and after completion, the operations undertaken by the nominated **Senior Authorised Person**.
- 9.4 The **Senior Authorised Persons Shall** have adequate knowledge of the **System** and **Apparatus**, or part thereof.
- 9.5 The nominated **Senior Authorised Person** or persons working under their **Personal Supervision, Shall** be the only individuals permitted to carry out operations to override the function of an interlock.
- 9.6 Following **Switching** operations and prior to overriding the function of an interlock, the affected **High Voltage Apparatus Shall** be made safe in accordance with Rule 4.1.1. of the **OSR** and a **Safety Document** issued, where:
- Adjustment of the interlock mechanism introduces potential movement of associated isolator blades or contacts
 - Adjustment or separation of switchgear operating linkages are required.
 - Removal of any lock or cover that forms part of the **Apparatus** interlocking system, or which retains the switch in its operational position
- 9.7 On completion of any adjustment to the interlock mechanism or associated linkages, correct operation of the **Apparatus Shall** be confirmed.
- 9.8 Where there is no risk of movement of the isolator blades or contacts, or where there is no need to separate linkages, it is permissible to override the function of the interlock with the **Apparatus Live**, provided that this can be undertaken safely and within the constraints of the **OSR**. A **Limitation-of-Access** sanctioned by the **Control Engineer Shall** be issued for this work.

10 Procedure

The following procedure **Shall** be applied when carrying out operations to override an interlock:

1. The decision to override the function of an interlock **Shall** be taken by a minimum of two **Senior Authorised Persons** who, following an on-site assessment of the **Apparatus** concerned, are in agreement that appropriate operations are required.
2. The requirement to override an interlock will be fully discussed between the **Senior Authorised Persons** who are to undertake the necessary operations and the **Control Engineer**.
3. The **Senior Authorised Persons** on site **Shall** produce a method statement detailing the reasons for the actions and the methods that will be used to defeat the interlock, this **Shall** include any controls required to ensure that safety is maintained both during and on completion of actions. Where practicable, the method statement **Shall** be made available to the **Control Engineer**.

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4. The **Senior Authorised Persons** on-site **Shall** confirm the agreed actions in the method statement and ensure that they both fully understand, and agree with, the specific action required.
5. The **Control Engineer** and the **Senior Authorised Persons** **Shall** agree the operations to be carried out to override the function of an interlock.
6. Any deviation required from this agreement will render the agreement invalid and work **Shall** cease. Consequently, the **Senior Authorised Person** **Shall** be required to seek a new agreement with the **Control Engineer**.
7. The **Control Engineer** **Shall** issue the appropriate instructions to the nominated **Senior Authorised Person**.
8. All operations will be agreed with and monitored by the second **Senior Authorised Person**.
9. The nominated **Senior Authorised Person**, or a person acting under their **Personal Supervision** **Shall** complete the actions required to override the function of an interlock.
10. On completion of the required operations, the status of the **System**, or part thereof, **Shall** be directly reported to the **Control Engineer** by the nominated **Senior Authorised Person** then confirmed by the second **Senior Authorised Person**.
11. The **Control Engineer** and the nominated **Senior Authorised Person** **Shall** record the completion of all operations as required.

11 Revision History

No	Overview of Amendments	Previous Document	Revision	Authorisation
01	New document created	n/a	1.00	Richard Gough
02				