PR-NET-OSM-043

ACCESS TO SUBSTATIONS AND SWITCHING SITES

OPERATIONAL SAFETY MANUAL - SECTION 6.1

Scottish & Southern Electricity Networks

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1 Introduction

1.1 This document defines the **Approved** procedure for the management of persons accessing substations and **Switching-site**s on the **System**.

1.2 Compliance with the following procedure **Shall** enable staff to work safely and reduce the risk of injury to themselves and their colleagues and members of the public.

2 Scope

2.1 The scope of this document **Shall** be limited to persons who are required to access substations and **Switching-site**s (including cable compounds etc.) and who hold the appropriate competence and authorisation to carry out specified duties.

2.2 The procedures included herein have been developed to minimise incidents associated with human error by ensuring that:

- A consistent approach is maintained for the management of access to substations and **Switching-site**s on the **System**
- At all times consideration is given to the operating characteristics of the **System** and the **Dangers** imposed

2.3 This document applies to Grid, Primary and Secondary Substations and **Switching-site**s energised at nominal **System** voltages up to and including 132kV. Sites may be either enclosed or open.

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 Distribution Operational Safety Rules – Operational Safety Manual – Section 1.1
PR-NET-OSM-028	Switching Terminology and Approved Abbreviations - Operational Safety Manual - Section 4.4
PR-NET-OSM-030	Identification of Apparatus - Operational Safety Manual – Section 4.6
PR-NET-OSM-037	Management of Operational Restrictions - Operational Safety Manual – Section 4.13
PR-NET-OSM-011	Management of Work or Testing in Substations with Exposed Live Busbars and/or Gas Insulated Apparatus - Operational Safety Manual – Section 6.2
WI-NET-OSM-002	Personal Protective Equipment and Workwear for Live Environments
WI-NET-OSM-014	SSEN Transmission Site Login Process for SSEN-D Staff – Operational Safety Manual - Section 6.1.1.
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 definitions. Definitions used within this **Approved** procedure are defined within the list presented immediately below, or within Section 2 of the **Operational Safety Rules**.

4.2 **Operational Safety Rules (OSR)**

The **SSEN-D** Distribution set of rules, as read with related documents and procedures, that provide generic safe systems of work on the **System** therefore ensuring the health and safety of all who are liable to be affected by any **Danger** that might arise from the **System**.

5 General Responsibilities

5.1 Persons who are required to operate and undertake work on the System, **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 **Shall** 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 enter substations and **Switching-site**s **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 a report of an insecure site has been received, staff **Shall** be dispatched to assess the condition of the site, reporting any findings back to the Customer Contact Centre (CCC).

7.2 Where vandalism to a substation or **Switching-site** has been identified, the **Control Engineer Shall** be notified and record made of the location and any damage that has occurred.

7.3 Event records **Shall** be reviewed periodically to identify vulnerable sites, therefore allowing counteractive measures to be deployed.

7.4 Where available, substation log books **Shall** be filled in.

8 Personal Protective Equipment

8.1 Persons who are required to undertake work or Switching duties on the **System Shall** wear suitably **Approved** Personal Protective Equipment (PPE). Where additional warning labels or labels that identify a hazard exist, appropriate PPE **Shall** be worn.

8.2 As a minimum, PPE **Shall** meet the requirements of WI-NET-OSM-002.

9 Procedure

9.1 Access and Egress

9.1.1 Where reasonably practicable, access and egress routes to substation and switching sites **Shall** be adequately illuminated. Consideration **Shall** also be given to unduly adverse weather conditions that might impact on site working conditions.

9.1.2 Access and egress routes to substations and switching sites **Shall** be inspected to ensure the routes are clear of obstructions and no hazards exist. This is particularly important for emergency exit routes.

9.2 Illegal Entry and or Vandalism

9.2.1 Prior to entry, substations and switching sites **Shall** be visually inspected for evidence of illegal entry and or vandalism. At all times care **Shall** be taken to avoid **Danger**.

9.2.2 Where the results of illegal entry or vandalism are confirmed and a risk to public, staff or the **System** exist, the **Control Engineer** and Security Bureau **Shall** be notified without undue delay.

9.2.3 The **Control Engineer Shall** make a record of the location and damage and establish the authorisation level of the person on-site. The minimum authorisation level required for any further action **Shall** then be decided.

9.2.4 Where the person on-site does not hold the authorisation level required, they **Shall** maintain a presence on site and observe applicable safety precautions until a suitably **Authorised Person** arrives.

9.2.5 Where the results of illegal entry or vandalism present a **Danger** to others including the general public, the area **Shall** be:

- Vacated and a minimum distance of 5 metres from any **Plant** and **Apparatus** maintained until repairs of a temporary, or preferably permanent, nature are carried out, or
- Secured using a physical barrier

9.2.6 In all cases, the objective **Shall** be to eliminate the immediate **Danger**.

9.2.7 The **Control Engineer Shall** introduce a suitable information or defect symbol on the control diagram reflecting the occurrence of illegal entry or vandalism. This ‘abnormality pin’ **Shall** remain until the **Control Engineer** has been notified that corrective repair have been carried out in such a way that the immediate **Danger** has been eliminated.

9.2.8 Where it is suspected that intruders may be inside the substation or switching site, no attempt **Shall** be made to enter that site, nor **Shall** any effort be made to confront any intruder. The emergency services **Shall** be notified without delay.

9.2.9 Entry by any member of the emergency services **Shall** be in accordance with the following:

- Non-competent persons **Shall** only be permitted to enter a substation or switching site under the **Personal Supervision** of a **Competent Person**
- The **Competent Person Shall** not supervise more than 2 non-competent persons in a substation.
- The **Competent Person Shall** carry out a risk assessment and safety briefing ensuring the non-competent persons have a good understanding of the safe access and egress routes, known trip hazards and **Dangers** posed from **Live** equipment.

- Where the **Competent Person** cannot adequately supervise the non-competent persons, all individuals **Shall** leave the site immediately, ensuring the site is secure so far as is reasonably practicable.

9.3 Access to Operational Premises

9.3.1 On arrival, the location of the substation or switching site **Shall** be positively identified. Positive identification requires confirmation of a minimum of three of the following indicators:

- Substation name plate (preferred method of identification where practicable)
- Substation unique identification number (preferred method of identification where practicable)
- Circuit designation labels compared with operational diagram or control diagram
- Number of switches compared with the control diagram
- Location compared with substation name on Geographical Information System (GIS) drawing

9.3.2 Statutory labels and signage **Shall** be subject to the requirements of PR-NET-OSM-030 Identification of Apparatus - Operational Safety Manual Section 4.6. Where labels and signage are missing or are in poor condition, they **Shall** be replaced with an equivalent.

9.3.3 Where an **Operational Restriction** label exists, entry **Shall** be subject to the requirements of PR-NET-OSM-037 Management of Operational Restrictions - Operational Safety Manual Section 4.13.

9.3.4 Where the substation or switching site is monitored by a security system, the Security Bureau **Shall** be contacted directly and entry details communicated.

9.3.5 When accessing any substation or switching site to carry out work for longer than a 15 minute period, the Control Centre **Shall** be contacted and entry details communicated. Where applicable all entry details **Shall** also be recorded in the substation log book.

9.3.6 Entry locks and locking devices **Shall** be inspected prior to opening. Hazard such as sharps (needles, razor blades, etc) **Shall** be removed and disposed of by suitably competent persons. Where an entry lock or locking device is damaged or non-functional, it **Shall** be replaced with an equivalent or otherwise secured to prevent unauthorised access.

9.3.7 Where the substation or switching site involves controls for automatic firefighting equipment protecting the area where work or operational **Switching** is to be carried out, the automatic firefighting equipment **Shall** be rendered inoperative, and a **Caution Notice** attached.

9.3.8 At all times the substation or switching site **Shall** be treated as **Live** unless proven otherwise. Persons entering a substation or switching site **Shall** enter with caution, sense checking (sight, sound, smell) the area they are manoeuvring through or working in, to identify any possible hazard that might exist. Hazards may include fires, explosions, smell of burning, smoke, arcing, SF6 leak etc.

9.3.9 Access to operational premises **Shall** not be undertaken where lighting is assessed to be insufficient.

9.3.10 In the event of circuit-breakers or other **Apparatus** operating on-site, the person or **Working Party** on-site **Shall** leave the locality in a controlled manner using the designated egress route, assembling at a safe location. The **Control Engineer Shall** be contacted directly to verify the operation of any equipment.

9.4 Access under Fault Conditions

9.4.1 When attending a substation or switching site during response to a fault, there is an increased likelihood of **Danger** when accessing the site, due to the unknown integrity of the **Plant** and **Apparatus** contained within.

9.4.2 Substations or switching sites may be accessed without informing the **Control Engineer**, to visually assess the condition of **Plant** and **Apparatus**, or to check operation of fault passage indicators in accordance with section 9.3.

9.4.3 Should the assessment indicate a **Danger** to public safety and / or the integrity of the **Plant** and **Apparatus**, this **Shall** immediately be reported to the **Control Engineer**. The area **Shall** be vacated and a minimum distance of 5 metres from any **Plant** and **Apparatus** maintained until further communication from the **Control Engineer** advising further steps.

9.5 Demarcated Areas

9.5.1 Demarcation of a work area is a main control measure in achieving safety from the **System** in outdoor compounds by ensuring clear boundaries between safe and potentially unsafe workplaces. The selection and erection of demarcation equipment **Shall** be subject to the requirements of PR-NET-OSM-011 Management of Work or Testing in Substations with Exposed Live Busbars and/or Gas Insulated Apparatus - Operational Safety Manual Section 6.2.

9.5.2 The decision to erect demarcation **Shall** be the responsibility of a **Senior Authorised Person**. Demarcation **Shall** be achieved using independently supported free standing equipment or permanent equipment.

9.5.3 Entry to a demarcated area is only permitted by a member of a **Working Party** under the terms of the **Safety Document**.

9.5.4 No person **Shall** enter or exit a demarcated work area by crossing over or under any chain or barrier. The designated access point **Shall** be used without exception.

10 Access to SSEN-T Operational Sites

10.1 For access to SSEN Transmission sites SSEN-D Staff will require the Atlas SOS Application see WI-NET-OSM-014 SSEN Transmission Site Login Process for **SSEN-D** Staff OSM section 6.1.1

11 Revision History

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