

1. SCOPE

Overhead line maintenance work may involve several **Working Parties** working within one **Isolated** zone and may also necessitate disconnection of the point(s) of work from the **Primary Earths**.

This **Approved** Procedure may be used when such maintenance is being carried out on wood pole overhead lines up to 33kV provided there is a unique identification system applied to the poles which are to be worked on. An example of this identification system would be the line numbering system used in Manweb.

This Procedure should be read in conjunction with PSSI 4.


2. ISSUE RECORD

This is a Reference document. The current version is held on the Energy Networks Intranet Document Library.

It is your responsibility to ensure you work to the current version.

Issue Date	Issue No.	Author	Amendment Details
October 1998	1		Initial issue.
October 2012	2	Rob Edwards	Removal of a prescribed scale to which plans shall be provided.

3. ISSUE AUTHORITY

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4. REVIEW

This is a Reference document which has a 5 year retention period after which a reminder will be issued to review and extend retention or archive. The proposed revision date can be viewed in the Management Safety Procedures Document Index, DOC-00-238.

5. DISTRIBUTION

This document is part of the Management Safety Procedures Manual but does not have a maintained distribution list.

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7. DANGERS

The main **Dangers** to personnel working on overhead lines are electric shock, burns or falling, arising from incorrect identification of the **Apparatus** or, from rise in potential due to badly connected or insecure **Earthing Devices**. It shall be the duty of the **Senior Authorised Person** responsible for the work to ensure that suitable precautions are taken to prevent **Danger**.

8. DEFINITIONS

Terms printed in bold type are as defined in the ScottishPower Safety Rules (Electrical and Mechanical) 4th Edition.

Terms printed in italics are as defined in the Definitions document (OPSAF-11-002) of the Management Safety Procedures.

9. TRAINING

Persons working to this Procedure shall be given appropriate training and shall have sufficient technical knowledge and experience of the work to be undertaken.

Each **Senior Authorised Person** and each **Authorised Person** shall be conversant with this Procedure.

Before each occasion when the Procedure is to be used, the **Senior Authorised Person** shall confirm that members of the **Working Party(s)** understand the procedures detailed in this Safety Procedure.

10. APPROVED PROCEDURE

10.1 General

The Procedure is designed to give greater flexibility when more than one **Working Party** has work to complete within one **Isolated** zone during an overhead line shutdown.

The Work Location shall be the **Isolated** zone bounded by the **Primary Earths**. There may be a number of Work Areas within the Work Location.

A **Permit for Work** shall be issued to the **Authorised Person** in charge of each **Working Party** for the work to be carried out by that **Working Party**.

Permits for Work may all be issued at one point where the Work Location shall be identified and proved not **Live**.

10.2 Control

Where more than one **Senior Authorised Person** or **Authorised Person** are involved in **Switching** and issue of **Permits for Work** relevant to the same Work Location, it shall be the responsibility of the **Control Person** to ensure that the responsibilities of each **Senior Authorised Person** and **Authorised Person** are clearly defined.

10.3 Pre-Shutdown Procedure

10.3.1 Patrol

A **Senior Authorised Person** shall brief suitably trained **Authorised Persons** to patrol the overhead line to be worked on.

The purpose of this patrol shall be to ensure that:

- (i) On site pole and line numbers correspond with the numbering on the Master Plan;
- (ii) Identification on each pole is secure and legible.

10.3.2 Plans

A Master Plan showing the boundaries of all Work Areas within the Work Location shall be produced. The Master Plan shall be of a suitable scale such that all relevant information (e.g. line and pole number, substation name and number, etc) can be clearly read and related to the topography of the area.

Apparatus to be worked on, and the work to be carried out, shall be indicated on the Master Plan.

Individual Work Plans identifying the relevant Work Areas for each **Working Party** shall be produced from the Master Plan.

The Master Plan and Individual Work Plans shall be checked by the **Senior Authorised Person** who is to issue the **Permits for Work**.

10.3.3 Briefing

The **Senior Authorised Person** who is to issue the **Permits for Work** shall brief the **Working Parties** before the shutdown and issue an Individual Work Plan to the **Authorised Person** in charge of each **Working Party**.

A copy of the relevant section of the **System** diagram shall also be provided.

10.4 Shutdown Procedure

10.4.1 Identification of Circuit to be Worked On

Authorised Persons who are to receive a **Permit for Work** shall meet the **Senior Authorised Person** who is to issue the **Permits for Work** at one **Point of Isolation** and witness the application of the **Primary Earth** on the circuit to be worked upon.

It is not necessary for the **Senior Authorised Person** to identify each point of work.

10.4.2 Permits for Work

Permits for Work shall be issued by a **Senior Authorised Person** for work to be carried out within the Work Location clearly stating that this Procedure is being used and that the relevant Individual Work Plan has been issued to the recipient.

The **Authorised Person** in charge of each **Working Party** shall be issued with a **Permit for Work** to cover their Work Area(s) within the Work Location.

Where a **Key Safe** is in use, a **Key Safe Key** shall be issued to each **Authorised Person** receiving a **Permit for Work**.

A sufficient number of **Drain Earths**, appropriate to the work to be carried out, shall be issued with each **Permit for Work**. The number of **Drain Earths** issued shall be recorded on the **Permit for Work**.

10.4.3 Work Plan

The **Authorised Person** in charge of the **Working Party** shall have in his possession:

- (i) The Individual Work Plan clearly defining the Work Area(s) for his **Working Party** and identifying the pole and line numbers on which work is to take place. The position of all **Primary Earths** shall be shown on the Plan.
- (ii) A copy of the relevant section of the **System** diagram.

10.5 Responsibilities of the Authorised Person in Charge of each Working Party

The **Authorised Person** in charge of the **Working Party** shall:

- (i) Instruct each member of the **Working Party** on the work to be done.
- (ii) Identify the point of work by:
 - (a) Reference to Individual Work Plan;
 - (b) Checking pole and line numbers correspond to those on the Plan;
 - (c) Checking the name of the substation, if applicable;
- (iii) Verify that the conductors on which they are to work are not **Live** by the use of an **Approved** voltage indicator. The voltage indicator shall be tested immediately before and immediately after use.
- (iv) Apply **Drain Earths**, in accordance with PSSI 4, in the **Approved** manner to protect from induced voltage, impressed voltage or inadvertent backfeed.

The general principle to be adopted when considering the position of application of **Drain Earths** shall be to surround each **Working Party** with **Drain Earths** and, where appropriate, **LV** shorts, such that any disconnection of the circuit from the **Primary Earth** by any **Working Party** shall not cause **Danger**.

- (v) Remove **LV** fuses at a substation pole when the **Drain Earths** do not protect from **LV** backfeed. Prove any adjacent **LV** overhead line on the pole is not **Live**.
- (vi) When working on a substation pole, place an **LV** shorting device on the **LV** overhead line, or other exposed **LV** metalwork.

The **Authorised Person** in charge of the **Working Party** shall not allow work to commence until all **Drain Earths** and **LV** shorts, for which he is responsible, have been applied.

Drain Earths and **LV** shorts shall not be removed until instructed by the **Authorised Person** in charge of the **Working Party**.

10.6 Completion of Work by Working Party

The **Authorised Person** in charge of the **Working Party** shall:

- (i) Instruct the removal of **Drain Earths** applied by the **Working Party**.
No other earth shall be removed.
- (ii) Instruct the removal of **LV** shorting devices and replacement of **LV** fuses.

The **Authorised Person** in charge of the **Working Party** shall check that all **Drain Earths** and other precautions have been removed and **LV** fuses have been replaced.

10.7 Clearance of the Permit for Work

On completion of all work for which he is responsible the **Authorised Person** in charge of the **Working Party** shall ascertain that all **Persons**, equipment, tools, **Drain Earths** and **LV** shorting devices have been removed from the Work Area(s) covered by his **Permit for Work**.

He shall then sign the clearance section of the **Permit for Work** noting any exceptions and return it, together with the **Key Safe Key** where issued, to the **Senior Authorised Person**.

10.8 Restoration

The **Senior Authorised Person** shall cancel the **Permits for Work** and inform the **Control Person** of the cancellation. When all **Permits for Work** associated with the Work Location have been cancelled the **Control Person** shall instruct the removal of **Primary Earths** and other **Switching** to restore the **Apparatus** to service.