

**1. SCOPE**

This section of the Live Working Manual details the procedures to be followed when a single phase meter is to be changed **Live**. The procedure applies the principles established by the ScottishPower Safety Rules (Electrical and Mechanical) to achieve **Safety from the System** and in particular Power Systems Safety Instruction 12 - Low Voltage Apparatus (OPSAF-10-012).

**2. ISSUE RECORD**

This is a Reference document. The current version is held on the EN Document Library.

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

<b>Issue Date</b>	<b>Issue No</b>	<b>Author</b>	<b>Amendment Details</b>
May 2004	3	Jack Neilson	Minor editorial changes to re-style document to current PowerSystems format. 4 Pages.
July 2019	4	Colin Rundell	Addition of <b>Approved</b> PPE and accompaniment requirements. Minor format changes

**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.

**5. DISTRIBUTION**

This document is part of the Live Working Manual but does not have a maintained distribution list.

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## 7. REFERENCE OR RELATED DOCUMENTS

OPSAF-10-012 (PSSI 12) **LV Apparatus**  
OPSAF-12-061 (LWM 2.6) **Low Voltage** Mains/Service Continuity and Polarity Testing  
OPSAF-12-025 (LWM 8.2) Insulated Gloves for Electrical Purposes other than **HV** Rubber Glove Working

## 8. DEFINITIONS

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

## 9. GENERAL

9.1 **Live** single phase meter changes shall only be carried out in exceptional circumstances. The reason that is usually given as justification of the decision to undertake a **Live** meter change is that there is no means of isolation local to the meter.

In such circumstances the preferred option is not to change the meter **Live**, but, where reasonably practicable, a cut-out shall be installed at the meter position so that local isolation is made available. The requirement for a **Live** meter change is then eliminated.

Only where it is not reasonably practicable to install a new cut-out (e.g. where there is insufficient space at the meter position) shall the meter be changed **Live**. This procedure is covered by steps 3(a) to 14(a) below.

Three phase meter changes shall only be completed with the **Apparatus Isolated**.

9.2 Meters that have moulded meter tail security blocks fitted shall not be changed **Live** as the phase and neutral (earth) conductors shall not be exposed at the same time.

9.3 Meters which are mounted immediately above or adjacent to metal trunking shall not be changed **Live** as it is not practicable to comply with PSSI 12 Section 13.3 (iii) with regard to screening or shrouding requirements.

## 10. PROCEDURE

10.1 Personal Protective Equipment, tools and test equipment requirements:

For this procedure the following are the minimum PPE requirements, besides other normal workwear:

- **Approved** FR coveralls shall be worn, fastened at the ankles, wrists and neck,
- a minimum of light eye protection, upgraded to **Approved** full face visor when making or breaking any **Live** electrical connections,
- **Approved** insulated gloves to be worn at all times when carrying out work using this procedure.

These minimum PPE requirements may be increased by the **Authorised Person** as a result of the site specific risk assessment e.g. wearing leather protective outer glove over insulated gloves etc.

Only **Approved** insulated tools, shrouding and test equipment shall be used to carry out this procedure.

## 10.2 Accompaniment

The **Authorised Person** carrying out this procedure shall be accompanied by another suitably **Authorised Person**.

## 10.3 Procedure WL1.60 - Changing Single Phase Meter

All tests referenced in this procedure shall be carried out in accordance with OPSAF-12-061 (LWM 2.6).

Step 1 Check existing meter for signs of interference, damage or distress e.g. excessive heat. Test for surface voltage. Do not proceed if there is any concern.

- Step 2
- (i) Check polarity at the nearest socket outlet in customer's premises, using an **Approved** tester.
  - (ii) Tape the meter seals to the meter body to prevent inadvertent contact between the seals and meter terminals on removal of terminal cover.
  - (iii) Switch off customer's main switch(es).
  - (iv) Remove meter terminal cover.
  - (v) Check polarity at meter terminals using an **Approved** tester.
  - (vi) Identify all of the meter tails and mark each one accordingly i.e. L or N.

If the polarity is incorrect at (i) or (v) above, replace meter terminal cover, reseal, and immediately contact Supervisor.

Where reasonably practicable, a new cut-out shall be installed by the following procedure:

- Step 3 Loosen the meter terminal screws on the **Live incoming** meter tail, remove the tail from the terminal and apply an **Approved** insulated end-cap
- Step 4 Loosen the meter terminal screws on the incoming neutral meter tail, remove from the terminal and apply an **Approved** insulated end-cap.
- Step 5 Repeat for the outgoing meter tails ensuring **Approved** insulated end-caps are applied.
- Step 6 Remove old meter from board.
- Step 7 Fix the cut-out to the meter board
- Step 8 Connect the neutral incoming meter tail into the neutral block of the single phase cut-out.
- Step 9 Connect the **Live incoming** meter tail into the fuse unit of the single phase cut-out.
- Step 10 Fix new meter to board having previously loosened all meter terminal screws, taped seals to meter body and ensured that the meter is sound.
- Step 11 Install and connect new meter tails (or moulded block) from top end of new cut-out to meter terminal. Repeat for other tails exposing only one at any time.
- Step 12 Check the polarity, neutral loop and, where practicable earth loop impedance at meter terminals using **Approved** tester.
- Step 13 Replace meter terminal cover.
- Step 14 Switch on customer's main switch(es).
- Step 15 Check polarity same socket outlet in customer's premises using the method detailed in Step 2.

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- Step 16      Reseal all equipment.
- Step 17      Ensure all customer distribution switches are left "as found".
- Where it is not reasonably practicable to install a new cut-out the following procedure shall be applied:
- Step 3a      Loosen the meter terminal screws on the **Live incoming** meter tail and remove the **Live** tail from the terminal and apply an **Approved** insulated end-cap.
- Step 4a      Loosen the meter terminal screws on the neutral incoming meter tail, remove from the terminal and apply an **Approved** insulated end-cap.
- Step 5a      Repeat for the outgoing meter tails ensuring **Approved** insulated end-caps are applied.
- Step 6a      Remove old meter from board.
- Step 7a      Fix new meter to board having previously loosened off all meter terminal screws, taped seals to meter body and ensured meter is sound.
- Step 8a      Replace meter tails in reverse order from which they were removed with only one meter tail exposed at any time.
- Step 9a      Check the polarity, neutral loop and, where practicable earth loop impedance at meter terminals using **Approved** tester.
- Step 10a     Replace meter terminal cover.
- Step 11a     Switch on customer's main switch(es).
- Step 12a     Check polarity at same socket outlet in customer's premises using the method detailed in Step 2.
- Step 13a     Reseal all equipment.
- Step 14a     Ensure all customer distribution switches are left "as found".