

1. SCOPE

This document details the policy for work on **Live** electrical **Apparatus** and provides guidance to authorised **Persons** on the circumstances under which work on **Live** electrical **Apparatus** (including **Live** testing) can be completed.


2. ISSUE RECORD

This is a controlled maintained document.

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Issue Date	Issue No	Author	Amendment Details
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3. ISSUE AUTHORITY

Author	Owner	Issue Authority
Name Phil Currie Title Policy & Operational Safety Manager	Name Phil Currie Title Policy & Operational Safety Manager	Name Doug Wilson Title Health & Safety Director  Date: <u>06-10-08</u>

4. REVIEW

This document shall be reviewed as dictated by business change. The proposed revision date can be viewed in the Live Working Manual Document Index DOC-00-236.

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6. DEFINITIONS

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

7. LIVE WORKING POLICY

7.1 General

Work on or near electrical **Apparatus** shall, where reasonably practicable, be completed with the equipment not **Live**, i.e. **Isolated**, with precautions taken to secure the isolation and, where appropriate to prevent **Danger**, with the **Apparatus** connected to earth.

Live Work (including testing) on electrical **Apparatus** shall be restricted to the **Approved** procedures listed in this manual.

The term '**Live** work' is used in the context of the Electricity at Work Regulations and refers to work on **Live** uninsulated conductors, so near to the conductors that there is **Danger**.

Generic risk assessments have been completed for **Live** work and are held in the SHE 2000 database.

7.2 LV Cables & LV O/H Lines

The normal method of work for jointing **LV** cables and work on **LV** O/H lines, including both planned and fault work, is to work **Live** where there is an **Approved** procedure.

The decision to work either not **Live**, or **Live** on cables or on O/H lines shall be taken as follows:

7.2.1 Cable jointing and O/H line work on the **LV System** - not **Live**

Not **Live** work shall be completed when:

- To make the **System** not **Live** would have no effect on any connected customers;
or
- The on-site risk assessment for an **Approved Live** working procedure indicates unacceptably high risks;
or

- Appropriate **Approved** control measures for a particular **Live** working procedure cannot be taken;
or
- **Company** procedures stipulate that a particular task must be done not **Live**.

Although the work under the above circumstances should be carried out not **Live**, all work shall follow **Approved Live** working procedures to minimise the risk of electrical injury in the event of the cable or O/H line becoming energised as a result of an **LV** backfeed or private generation connected.

There may be limited occasions when the risks associated with isolating the **LV System** to allow the above work to be carried out not **Live**, may outweigh the risks of working **Live**. This could include the requirement for **Live** phasing and neutral checks, and non-electrical risks such as the potential for violence to staff effecting the isolation, working at height etc. When the decision is taken to work **Live** under those circumstances, the justification shall be recorded on the START safety check form.

7.2.2 Cable jointing and O/H line work on the **LV System - Live**

Live work shall be completed when:

- To make the **System** not **Live** would remove the supplies from one or more customers.
- The work may be done **Live** but only if each of the following conditions apply:
 - It is not reasonably practicable to provide an alternative supply to those customers who would be affected if the **System** were to be made not **Live** at the point of work. The use of a generator for customer(s) to provide an alternative supply, in order to make the **System** not **Live** for work, would only be required in exceptional circumstances where there were abnormal **System** conditions.
 - All the risks associated with implementing the **Approved Live** working procedures have been identified and are acceptable. This risk assessment shall take into account factors such as environmental conditions, public safety and the presence of faulty or damaged cables or equipment with the risks recorded on the START safety check form.
 - Appropriate **Approved** control measures are implemented.
 - Authorised in writing for **Live** work: and
 - **Approved Live** working procedures implemented

- Appropriate PPE used.

7.3 AUTHORISATION

Work on or so near **Live** electrical equipment may only be carried out by **Persons** who are competent to do so, i.e. those who are properly trained, assessed and possess the necessary technical knowledge and experience to prevent **Danger** or injury. Those **Persons** shall be authorised in writing to work on or so near the **Live System** with the Certificate of Authorisation will be retained in their Safety Rules Handbook.

Authorisation procedures will be in accordance with MSP 5.1 (OPSAF-13-001).

7.4 RISK ASSESSMENTS

Risk assessments have been made for all **Live** working procedures contained in this manual and conclude that for **Approved Live** work undertaken under normal conditions, there is a low level of risk. These specific risk assessments are held in the SHE 2000 database.

A list of variable factors, which are dependent on site conditions and are relevant in carrying out an on site risk assessment, and determine whether or not the work should commence on or near **Live** electrical equipment are contained in the risk assessment in Appendix 1 to this document.

7.5 ACCOMPANIMENT

7.5.1 Accompanying Person

MSP 1.1 (OPSAF-11-003) provides guidance on the accompaniment of **Persons** carrying out **Live** work or testing. The accompanying **Person** shall clearly understand his role towards achieving the required safe system of work and shall be trained to recognise **Danger** and shall, if necessary, be capable of rendering assistance in the event of an emergency. The accompanying **Person** shall hold a basic First Aid Certificate or a 'P' authorisation in First Aid.

Danger in this context is taken to apply to the **Danger**, which could result from the action of the **Persons** involved, and not to some intrinsic weakness of design or workmanship. Subject to a visual inspection and a risk assessment, all **Plant** and **Apparatus** is assumed to be adequate for the purpose, correctly constructed, installed and maintained.

7.5.2 Operation

The operation of **Plant** or **Apparatus** in their normal operating mode may be carried out without **Danger** providing routine procedures and suitable equipment are correctly used. Suitably **Authorised Persons** do not, therefore, require to be accompanied when carrying out

HV and LV Switching (excluding the application of **Portable Earths**, see PSSI 2 (OPSAF-10-002), Paragraph 5.14).

7.5.3 Accompanied Work

Any work on **Live HV** conductors, or the exposure of **HV** conductors which have not been **Isolated** and **Earthed**, and which requires the handling or application of **Approved** insulated tools, insulated devices, or instruments to those conductors requires accompaniment.

Approved voltage indicators or Victor may be used unaccompanied provided that an on-site risk assessment is carried out and adequate precautions are taken as detailed in the LWM 2.3 (OPSAF-12-005).

The following types of work or testing on **HV** and **LV Apparatus** shall only be carried out while accompanied:

- Work on **HV Spouts of Metal-Enclosed Switchgear**
- PSSI 3.
- Work on **Live LV Apparatus**
- PSSI 12 Paragraph 9 (i) where risk assessment shows it is required.

8. APPENDIX 1 - LIVE WORKING RISK ASSESSMENT

Risk Assessment Title:- Live Working Generic Risk Assessment	Who is Affected	Likelihood	Severity	Outcome without Controls	Controls to be applied to reduce Risk or Danger	Likelihood	Severity	Outcome	Final risk rating for task
<p>Task Description, Issues, Risks & Hazards</p> <p>Work on or adjacent to Live Exposed conductor: -</p> <ul style="list-style-type: none"> Jointing work Work on LV pillars, distribution boards, control panels etc Work on metering both CT and Whole Current Work on Overhead Lines <p>Associated Hazards & Issues considered: -</p> <ul style="list-style-type: none"> Work Space Confined Pedestrians or third parties Vehicles Access & Egress Excavations & Spoil Other Utilities Visibility (lighting) Environmental Issues Rain, snow, ice Lightning Wind Water Ingress Explosive Gases Electricity Direct Contact Induction Inadvertent Re-energisation Adjacent Earthed Metalwork, pipes scaffold etc Adjacent Live Apparatus Customers Customers affected Types of customers affected Work duration Generators available for abnormal conditions Availability of a specific Live Working procedure. Apparatus General condition of Apparatus i.e. signs of deterioration or damage. 	Authorised Persons	8	10	80 High Risk	<ul style="list-style-type: none"> All staff and contractors competent trained and authorised to carryout specific procedures. All training carried out in a controlled and consistent manner by trained competent trainers. All Live working training and assessment completed using hands on practical methods. Where the confined space controls adopted still present a risk to the person carrying out the Live working procedure, Live working shall not be carried out. A suitable barrier shall be established to prevent inadvertant access to the work area. Were vehicles are considered to be a risk to the work areas, suitable barriers or physical controls shall be established. Clear access and egress shall be established for the work site. Any excess materials which could impact of the work area shall be removed Consideration shall be given to shrouding other utilities equipment, which could impact on the work area. Ensure suitable lighting is available for the work area i.e. low voltage hand lamps, flood lighting etc Provide suitable protection to prevent work area being affected by rain snow stc. Where protection cannot be maintained for duration of work, work shall be postponed until controls can be maintained. Availability of water pumps shall be considered where conditions dictate. Gas monitoring equipment shall be made available where circumstances or condition indicate a risk. Only trained authorised to carryout Live working procedures Work carried out in accordance with the Approved Live work procedure. Ensure all non-authorised persons are prevented from gaining access to work area. Ensure only Approved insulated tools and personal protective equipment is used subject to inspection prior to and after use. All work associated with underground cable shall be treated as Live at all times. All exposed earthed metalwork in the work area shall be shrouded prior to work commencing Adjacent Live Apparatus shall be clearly identified signed and shrouded where its presence is considered a risk. An assessment shall be carried out on the numbers and types of customers affected and consideration shall be given to isolation where this is practicable. Unless controls such as portable shorts have been applied apparatus shall be treated as live during the work. Where Live working is to be carried out and the duration of the work is short consideration shall be given to isolation Live working shall only be carried out where there is an Approved Live working procedure and carried out by a trained competent person. A visual assessment of the Apparatus to be worked shall be carried out prior to commencement of the work. Where any damage or defects are identified, the Live working shall cease. 	2	8	16	LOW