Arrangements for Isolation of Power Supplies
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For work on LV electrical equipment or circuits, it is important to ensure that the correct point of isolation is identified, an appropriate means of isolation is used and the supply cannot inadvertently be reinstated while the work is in progress. Caution notices should also be applied at the point(s) of isolation, and the conductors must be proved to be dead at the point of work before they are touched.

A fundamental principle is that the point of isolation should be under the control of the person who is carrying out the work on the isolated conductors. The means of isolation can be an adjacent local isolation device such as a plug and socket, switch-disconnector, circuit breaker, fuse etc, as appropriate, which is under the direct control of the competent person carrying out the work. These devices can be used without further precautions provided there is no foreseeable risk that the supply could be reinstated by others.

*When there is no such local means of isolation or there is a risk of reinstatement of the supply as above, the circuit or equipment to be worked on should be securely isolated by one of the following methods.*

**Isolation using a main switch or distribution board (DB) switch-disconnector.** Isolation of equipment or circuits using the main switch or DB switch-disconnector is the preferred method. The point of isolation should be locked off using a unique key or combination retained by the person carrying out the work. In the case of multiple isolations on a DB, a multi-lock hasp can be used to prevent access to a main isolator until such time that all persons working on a system have completed their work and removed their padlocks from the hasp.

If locking-off facilities are not provided on the relevant switch then a locked DB door or locked switch-room door is acceptable provided the key or combination is unique, and is retained by the person doing the work. Again, multi-lock hasps can be used to control multiple isolations, although a key box or similar system may be needed to retain and control access to the main door key.
Safe Isolation Practice
Where it is intended that more than one person will be working on circuits supplied from a DB, (i.e. multiple isolations) and a multi-lock hasp cannot be used to secure the main point of isolation, individual isolation of each circuit by one or more of the methods shown below is recommended, to prevent inadvertent reinstatement of the supply. The principle is that each person carrying out such work should have control of their own point(s) of isolation and not rely on others to prevent inadvertent energisation.

Isolation of individual circuits
Where it is not practical to isolate a distribution board, individual circuits supplied from it can be isolated by one of the methods described below, depending on the type of protective device used. However, bear in mind the overriding advice to avoid energising any outgoing electrical distribution services, preferably until the distribution switchgear and all connected circuits are complete and have been inspected and the relevant tests carried out.

If any items required to carry out the procedures recommended below are not manufactured for the DB in question or cannot be obtained through retail/trade outlets, it is acceptable to disconnect the circuit from the DB as long as the disconnected tails are made safe by being coiled or insulated. Suitable labelling of the disconnected conductors is important to prevent the supply being re-instated, particularly if other electricians are present.

It should be remembered that work carried out inside a live DB is regarded as live working when there is access to exposed live conductors. In this case the appropriate precautions should be taken as described in HSG85 with respect to Regulation 14 of the Electricity at Work Regulations.

Isolation of individual circuits protected by circuit breakers
Where circuit breakers are used the relevant device should be locked-off using an appropriate locking-off clip with a padlock which can only be opened by a unique key or combination. The key or combination should be retained by the person carrying out the work.
**Note**
Some DBs are manufactured with ‘Slider Switches’ to disconnect the circuit from the live side of the circuit breaker. These devices should not be relied upon as the only means of isolation for circuits as the wrong switch could easily be operated on completion of the work.

**Isolation of individual circuits protected by fuses**
Where fuses are used, the simple removal of the fuse is an acceptable means of disconnection. Where removal of the fuse exposes live terminals that can be touched, the incoming supply to the fuse will need to be isolated. To prevent the fuse being replaced by others, the fuse should be retained by the person carrying out the work, and a lockable fuse insert with a padlock should be fitted as above. A caution notice should also be used to deter inadvertent replacement of a spare fuse. In addition, it is recommended that the enclosure is locked to prevent access as stated above under ‘Isolation using a main switch or distribution board (DB) switch-disconnector’.

The Company being NICEIC registered follows the guidelines from the NICEIC pocket guide notes.

Signed for and on behalf of the company

Jo Shuttlewood – HR Director
GUIDE TO ISOLATION PROCEDURE (continued)

Step 3
(Steps 1 and 2 are shown overleaf)

Using a voltage detection instrument, check that there is no
dangerous voltage present on any circuit conductor to be
worked on. It is important to confirm that conductors are
not energized, for example, due to a wiring fault. Check
terminal voltages between: (1) earth and line, (2) neutral
and line (as shown) and (3) earth and neutral.

Notes:

a. In practice the equipment being worked on is likely to be
remote from the consumer unit, for example, a socket-outlet
located remotely from the means of isolation. In this case it is
necessary to check that all the socket-outlet contact terminals
are dead.

b. When checking for a voltage between an earth terminal and
live (including neutral) terminals, the test probe should make
contact with the earth terminal first, to reduce the risk of the
remaining probe becoming live.

NOTES (also see notes overleaf)

(6) The Electricity at Work Regulations 1989 require precautions to be taken against the risk of death or personal injury from electricity in work activities. Regulation 12 requires that, where necessary to prevent danger, it is a suitable means is available for cutting off the supply of electrical energy to any electrical equipment, and isolation of any electrical equipment.

(7) The Health and Safety Executive booklet HSG25 - Memorandum of guidance on the Electricity at Work Regulations 1989 is intended to help duty holders meet the requirements of the Regulations.

Step 4

Prove the voltage
detection instrument
again against the
known source to
check that it was
functioning correctly
when the circuit(s)
were tested for the
presence of voltage.