

Department of Physics: Working with Electricity

Suggested Procedure for Working Live

Live working, is working with equipment that is energised or contains stored energy, and there is any possibility of a danger of injury.

In general, it is unlikely that a student would be given permission to work live, except under the constant supervision of a competent person.

First establish that live working is justified. Note that four criteria must always be met:

1. It must be unreasonable in all the circumstances to do the work when the equipment is dead.
2. It must be reasonable in all the circumstances for someone to be near it while it is live
3. The person carrying out the work must be competent to do it (and this includes having an understanding of the limits of their own competency).
4. The person doing the work must have the right tools and equipment.

Working live on your own, or out of hours, is FORBIDDEN.

Do a risk assessment, which will incorporate at the very least the following in its safe system of work:

1. Plan the work, obtaining information about the electrical system
2. Establish an adequate clear working space, head room, lighting, with no tripping hazards or obstructions. At least 3 ft (approx. 0.9 m metric) clear working space is recommended for parts live at 415 V, or 4 ft 6 in (approx. 1.4 m metric) for parts live on both side of the work, although this situation should be avoided wherever possible by, for example, screening.
3. Access to the area should be prohibited to all those not directly involved with the work. The live equipment should not be left unattended unless adequate security arrangements can be made (e.g. locking the door and erecting a warning sign)
4. A warning sign should be erected to indicate that live working is being undertaken
5. Prevent anyone touching parts at dangerously different potentials at the same time either directly or through the use of tools– install temporary barriers, insulating screens, etc.
6. Ensure adequate training and competence of those doing the work – they should recognise their own limitations
7. Only properly insulated tools should be used, with insulation robust enough to be proof against mechanical damage. Test instruments should have insulated probes and fused leads – see GS 38 (available as a free download).
8. Protective equipment and clothing should be provided and used where it would reduce the risk of contact with live parts or earth.
9. Horizontal surfaces and projections inside control cabinets should not be used for temporary storage of tools and other equipment
10. There should normally be someone close by who is aware of what you are doing, can make the equipment dead and render first aid or get assistance.