



ELECTRICAL SAFETY POLICY

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Glossary

ACoP	Approved Code of Practice
BS	British Standard
DfE	Department for Education
H&S	Health and Safety
HSE	Health & Safety Executive
HSG	Health & Safety Guidance
IT	Information Technology
LV	Low Voltage
SOP	Standard Operating Procedure
UK	United Kingdom

1. INTRODUCTION

The Education Alliance attaches great importance to the health and safety of students, staff and visitors, its property, assets and systems.

The Trust also has a legal and moral responsibility to manage and reduce all significant and major organisational risks. The provision and maintenance of safe workplaces and safe working practices (so that students, staff and the public are not injured or suffer ill-health as a result of any work activities) are fundamental parts of the Trust's Risk Management Strategy.

This document outlines The Education Alliance's policy on Electrical Safety.

2. SCOPE

This document is intended for use by all staff involved with electrical systems in the Trust. It is the responsibility of management and technical staff to comply with the Electricity at Work Regulations 1989 which impose duties on employers and employees in respect of electrical systems, equipment and conductors, work activities on, or near, electrical equipment, which require precautions to be taken against death and risk of personal injury arising from those activities.

This document contains Electrical Safe Working Practices and Procedures both of a technical and managerial nature, and gives important supplementary information for use in conjunction with standard operational procedures for electrical safety.

This policy applies to all electrical systems designed and installed for the distribution of electricity and associated electrical equipment in Trust Premises, so that they may be operated and maintained safely when approved operational procedures are followed.

Particular procedures will apply to ensure the health and safety of those likely to be affected by maintenance, testing and repair of electrical systems or equipment, to ensure that the work is carried out without danger so far as is 'reasonably practicable'.

2.1 High Voltage Networks

High Voltage networks and associated systems (including local LV transformation) are the sole responsibility of, and wholly maintained by the Distribution Network Operator (DNO), currently Northern Powergrid. All on-site HV substations are identified with warning notices. These areas are locked and access controlled by the DNO alone.

The Education Alliance has no responsibility for the High Voltage networks feeding any of their sites, nor do they have responsibility for HV substations located on them.

3. POLICY STATEMENT

The Electricity at Work Regulations 1989 impose duties on 'employers' to comply with these insofar as they relate to matters which are within their control. These duties are in addition to those imposed by the Health and Safety at Work Act 1974.

The Education Alliance, as Duty Holder, is committed to electrical safety for its students, employees and visitors, who use, operate or maintain electrical equipment and/or systems on their premises.

The Education Alliance will ensure that all electrical systems are correctly designed, installed, maintained and used, adopting in detail as its standard the guidance and procedures of HSE Guidance and associated British Standards, as far as is reasonably practicable.

The Education Alliance is committed to achieving electrical safety by self-regulation, by ensuring that all staff are aware of their responsibilities, by establishing safe working practices and procedures, appropriate training, monitoring procedures, and by maintaining clear and concise records of activities.

To achieve the objectives, The Education Alliance accepts that a high level of management commitment, professional competence and adequate resources are required. All staff will do all that is reasonably practicable to achieve compliance with appropriate health and safety advice, statutory and other related guidance.

The Education Alliance shall ensure that all Trust staff and external contractors employed by the Trust who are required to work on electrical installations and appliances are competent to do so in terms of experience and training.

4. DUTIES & RESPONSIBILITIES

4.1 Chief Executive Officer

The Chief Executive Officer has the overall responsibility for all Health and Safety matters relevant to The Education Alliance.

4.2 Designated Person (Head of Business Operations)

The Designated Person may choose to appoint, in writing, an Authorising Engineer (AE) Low Voltage (LV) for the electrical systems and installation under The Education Alliance's control.

4.3 Authorising Engineer (AE)

If appointed, the Authoring Engineer LV is an external consultant responsible for implementing and monitoring the application of Electrical safety guidance for Low voltage systems.

4.4 Authorised Person (AP)

As a result of The Education Alliance not having any suitably qualified or experienced personnel within their structure, they will appoint external Authorised Persons who will be responsible for the practical implementation and operation of the systems and installations for which management is in control of and for which the Authorised Person(s) LV has been appointed.

4.3 Competent Person (CP)

As a result of The Education Alliance not having any suitably qualified or experienced personnel within their structure, they will appoint external Competent Persons (LV) who shall comply with this safety policy and the relevant school's operational procedures and guidance manuals which are located within each respective school's Estates Department.

4.4 Site/Premises Managers

Site/Premises Managers shall ensure that:

- The policy is brought to the attention of all managers/heads of department to cascade to their staff members.
- Identified actions arising from risk assessments in relation to this are implemented.
- Relevant staff are informed, educated and correctly trained in electrical matters.
- Identified risks that cannot be managed by means available to them are referred to their senior manager within their area for further action.

In addition, Site/Premises Managers shall ensure that the following is carried out:

- Users undertake visual inspection checks of equipment before use and that any circuits and/or equipment in need of repair is reported immediately to the Estates Department.

- Provide access to systems for the purpose of routine testing and inspection.
- Provide access to portable electrical equipment for testing and inspecting at mutually convenient times.
- Any electrical equipment delivered to and used in the Trust has been tested and cleared for use by the Estates Department.
- Condemned equipment is not used and is correctly identified as condemned prior to disposal.

4.5 Employees

The primary responsibility for day to day safety of portable equipment when in service lies with the staff, whether being used by a member of staff, student or visitor.

Any staff member using or allowing students to use portable electrical equipment shall, before using it, personally check that the equipment, including the flexible cable and plug top, is free from mechanical damage and that there is a current safety test label attached.

For details of visual checks on portable equipment refer to the Procedures in section 5.10 of this document.

Any defective equipment must not be used. A warning label shall be fitted and the Estates Department informed.

All portable equipment shall be maintained in a safe condition in accordance with the requirements of the Electricity at Work Regulations 1989. The Estates Department shall be notified of any electrical equipment brought on site.

All new portable electrical equipment delivered to stores, or direct to the user, shall not be used until it has undergone a visual examination by the Estates Department and deemed safe for use and subsequently a portable appliance test (PAT) will be completed at the earliest opportunity.

Managers are to inform the Estates Department of any electrical equipment brought in by patients or students, and to ensure that it is not used until a discussion has taken place with the Estates Department as to the need and subsequent testing of that equipment.

It is the responsibility of each member of staff to ensure that his/her own personal electrical items are not used at work until the item has been PAT tested.

4.6 Employees

All employees have a responsibility for electrical safety and will:

- Co-operate fully towards achieving a health and safety culture and the aims of the policy
- Be aware of their responsibilities in protecting the assets of the Trust, staff and students at all times
- Report all electrical related incidents within Trust owned and leased properties.

The Estates Team are available to advise and help with any electrical concerns.

5. PROCEDURES

5.1. Competency/Authorisation

To comply with the Electricity at Work Regulations 1998 The Education Authority will ensure:

- All employees required to work with, or in close proximity to, live electrical conductors must be authorised to carry out the work. It should be noted that the knowledge, training and level of supervision required for different jobs will vary considerably.
- The Competent Person to be appointed in writing by the Authorised Person for duties that are clearly identified and defined in a 'Certificate of Appointment'.
- Each Competent Person appointed will be issued with a copy of the 'Certificate of Appointment' with a second copy being retained on file.
- The Authorised Person will maintain a register of persons appointed.
- The Authorised Person will review each person appointed at intervals not exceeding three years.

5.2. Training Requirements

Those who are appointed in writing to carry out the control measures and specific duties will be suitably informed, instructed, trained and assessed ensuring that tasks are carried out in a safe and technically competent manner.

Where appropriate, refresher training will be provided (in association with formal re-appointment as required) and records of all initial and refresher training will be maintained. All members of staff including those with managerial responsibilities for electrical systems will receive training commensurate with their duties as identified in the table below:

Role	Training Requirement	Period
Designated Person	Awareness Training	On Appointment
Authorising Engineer	Accredited Authorising Engineer Training Course	Every 5 Years
	Accredited Authorised Persons Training Course	Every 5 Years
	Emergency First Aid Training	Every 3 Years
Authorised Person [this person may be external to the organisation]	Accredited Authorised Persons Training Course	Every 3 Years
	Emergency First Aid Training	Every 3 Years
Competent Person (Electrician) [these may be external contractors]	Accredited Competent Persons Training Course	Every 3 Years
	Emergency First Aid Training	Every 3 Years
Competent Persons (Limited Duties). i.e. Caretakers	Formal Training Provided Locally (For Specific Duties)	On Appointment Reviewed Every 3 Years
	Emergency First Aid Training	Every 3 Years

5.3. Prohibition of Work on Live Conductors

- Work on Live electrical systems is prohibited
- Work on or with Live electrical conductors is prohibited

5.4. Live Functional Testing (Diagnostic Testing)

Specific procedures are in place for testing which shall be adhered to at all times.

A Competent Person (Electrician) are the only persons allowed (when deemed essential), to carry out diagnostic tests on low voltage, single and three phase systems whilst conductors are live. Any such systems will be isolated immediately after the fault is found and prior to remedial work.

The Education Alliance will ensure (generally through an external contractor) that the person(s) has, thorough training and experience, adequate levels of competence for the areas and systems that the employee is required to work on.

5.5. Risk Assessment

- All programmed/planned works to the electrical systems shall be the subject of a risk assessment carried out by an Authorised Person and received by the school's Site/Premises Manager.
- The risk assessment shall also ensure adequacy of lighting, the existence of rubber safety insulation mats to BS921 and the need for any barriers. The Authorised Person shall also determine at local level the consequences of isolation etc. before work proceeds. This will include restrictions in terms of dates and times for any planned isolation.

5.6. Issuing a Safe to Work Permit

- A logbook system shall be used when deemed necessary by the Authorised Person, as described in "5.5: Risk Assessment" above.
- All relevant sections are to be completed as described in the documentation, and this shall be issued by the Authorised Person to the Competent Person undertaking the work.
- Used Safe to Work Permit books shall be retained for record purposes for the life of the equipment/system.

5.7. Completing a Safety Programme (Completed by the Authorised Person)

- Applicable to programmed work or tests on complex Low Voltage Systems (classed as moderate risks). Authorised Persons shall have a thorough working knowledge of the Trust's systems and be suitable qualified and trained.
- The Authorising Person shall complete The Education Alliance permit/safe working documentation including the following;
 - i. A description of purpose of the proposed work or test
 - ii. The sequence of operations required to make the system safe
 - iii. The date of the work
 - iv. Authorised Person's name
 - v. The sequence of operations proposed
 - vi. The location at which each operation is to be performed
 - vii. The identity of each item of switchgear to be operated
 - viii. The operation to be performed
 - ix. The reason for the operation
 - x. Any items (for example keys, locks, signs) required
 - xi. Electrical systems drawings/diagrams specifying isolation points as noted
 - xii. Particular special instructions
 - xiii. Mission critical information, i.e. pre-isolation agreements, contingency plans etc.

- The original safety programme is to be countersigned by the Authorised Person who has knowledge of the particular system and access to a current diagram of the system.
- The Authorised Person will refer to the electrical diagram in the safety programme whilst carryout the work.
- If the work is to be carried out by others then the safety arrangements and all points of isolation/test are to be identified specifically.

5.8. Method for Safe Isolation of an Electrical Circuit (for general works not requiring the Permit to Work)

Applicable for Competent Persons (Electrician) and Authorised Persons.

Before any work can begin, the electrical equipment and conductors need to be identified and then proven dead at the point-of-work by means of an approved voltage indicator, the functionality of which must also be verified with an independent proving unit, immediately before and immediately after the use of the voltage indicator.

The voltage indicator and proving unit shall comply with the requirements of the following Health and Safety Executive guidance document:
GS38: Electrical Test Equipment For Use On Low Voltage Electrical Systems.

When work is to be carried out on low voltage equipment made dead, all reasonably practicable steps must be taken to prevent the electrical equipment and/or conductors being made live inadvertently during the course of the work, including locking-off any switchgear, removal of any fuses, links or similar approved methods. Unless a key box/safe is used, the person working on the equipment should retain any locking-off keys, fuses and links.

In achieving safe isolation, the following steps should be carried out where reasonably practicable:

- The application of a safety system to prevent the circuit breaker or switch being closed or fuse replaced whenever the equipment allows its use. Use of special locking devices to allow the use of safety locks is recommended
- A visible break in air should be obtained (whenever possible).
- For any switchgear “locked off”, an appropriate warning label should be fitted at the device identifying the person(s) who have installed the lock-off.
- The voltage indicator shall be tested to be functional (by means of the proving unit).
- The voltage indicator shall be used to test that the point of work is electrically safe.

- The voltage indicator shall then be tested a second time (by means of the proving unit) to provide further assurance that the test results are true, and confirm the point of work as electrically safe.

5.9. LV System Emergencies

To make safe electrical systems and safeguard them it is crucial that repairs/remedial actions are taken as soon as possible.

The response shall be immediate when:

- A threat exists to the wellbeing of the students, staff and visitors.
- There is a Risk of exposure to live conductors
- Damage to cables or equipment poses a risk to staff, patients or visitors
- Explosive mixtures require remote switching to prevent local hazards

The Actions taken shall include but are not limited to:

- Ensuring any 'live' equipment or conductor is guarded until it can be isolated or made safe.
- Inform the appropriate personnel and department.
- Information on the emergency is given to affected departments
- Alternative supply arrangements are determined (generator or re-routing electrical supplies)
- Inform additional authorised personnel as the need dictates
- Some of the above actions may need to happen simultaneously.

All supply re-instatements after an emergency shall be verified by the duty AP with agreement by all work parties that all applicable safety measures have been removed and/or the repair/remedial work has been completed. Final switching may need to be confirmed by radio dependent upon the site geography. If this is the case, a pre-agreed code word as determined at the face-to-face meeting is to be used to confirm it is safe to continue. Any messages must be clear and concise and repeated by the receiver in each case.

In all cases following the repair/remedial work the LV log book must be completed with the action taken.

5.10. Portable Appliance Testing

Guidance on testing/inspection frequencies is issued from the Institute of Electrical Engineers and from the Health and Safety Executive for office equipment. Where the Education Alliance carries out PAT Testing in house they have specific procedures in place.

All new items of electrical equipment tested and marked as above to be fitted with an asset reference prior to being issued for use on site. This includes electrical items brought into the workplace by staff.

Any item of electrical equipment that fails PAT testing or any aspect of the inspection procedure will be immediately withdrawn from service so that repairs can be carried out. The item of electrical equipment will be inspected and PAT tested following repairs prior to being re-issued for use on site.

In the event of a repair not being possible (spares no longer available), or the repair cost prohibitive compared to new, the item will be scrapped and removed from the Estates asset management system (currently Planet FM).

5.11. Circuit Protection for Hazardous Conditions

All electrical hand tools (drills etc) shall be battery operated unless it is deemed appropriate to use 110V AC (for additional torque). In this case an 110V AC isolating transformer shall be used.

Electrical equipment intended for use in an industrial environment or any portable equipment to be used in damp/wet conditions must be fitted with or used in conjunction with a residual current circuit breaker.

5.12. Fixed Electrical Systems (General)

5.12.1 Periodic testing of LV systems

All fixed LV electrical systems owned by The Education Alliance shall be periodically inspected and tested in accordance with BS 7671: (current edition).

Inspection and Test records are stored on the Trusts data systems and securely off site and are updated to reflect any additions or changes to the electrical installation.

5.12.2 Circuit identification

All switchgear and distribution boards owned by the Trust shall be uniquely identified by securely attached and prominent asset labels. Each distribution board shall have an on-site circuit chart which allows accurate and easy identification of all circuits connected to the switch board.

Final circuit outlets shall also be labelled to reference them to their controlling switch/fuse and distribution board.

Schematic diagrams showing the Trust's electrical system layout and circuit/switch gear identification references shall be provided and updated as necessary.

5.12.3 New works or additions or temporary works

All new LV work including temporary work and minor additions shall be carried out in accordance with BS7671: (current edition).

All new works certification will be passed to an Authorised Person LV and uploaded to the Trusts records.

5.12.4 LV fixed equipment maintenance

All LV electrical equipment (e.g. ventilation systems, lifts, compressors, boiler plant) shall be regularly inspected, serviced and tested to ensure that it is maintained in a safe and serviceable condition. Test periods shall be determined by the Estates Department and records maintained which will contain brief details of all inspections, routine servicing, repair and modifications.

5.12.5 LV switchgear and wiring

All LV switchgear and installations shall be maintained to ensure safety and operational capability is assured. Maintenance intervals shall not exceed the following periods:

- Manufacturers recommended intervals
- 5 years for visual inspections and testing of fixed wiring
- Thermal survey every 2 years unless risk assessments indicate otherwise.

5.12.6 Lightning conductors

All lightning protection systems shall be inspected and tested every 12 months.

5.13. Contractors

All contractors working on site must conform to the requirements of the Electricity at Work Regulations 1989, statutory instruments, related guidance and Trust procedures. Contractors will also ensure that all their portable appliances are tested in accordance with the frequencies as recommended.

5.14. Records

Suitable and sufficient records are to be maintained and are available as detailed within the policy.

6. MONITORING & AUDIT

An independent audit by the Trust appointed Authorising Engineer (if appointed) is completed at a maximum of 3 yearly intervals. The monitoring of all existing electrical systems carried out in the Trust is actioned by the Estates Department. This is by inspection of any works, by random checking an agreed percentage of work on a regular basis. The checking of all paper work issued and returned completed for each of the jobs. Invoice checking against jobs completed prior to payment to contractors.

For new and refurbished builds the commissioning team will witness compliance to the BS standards.

The results of compliance checking will be reported to the Health and Safety Committee.

7. REFERENCES

- 17th Edition of the IEE Wiring Regulations (BS 7671:2008 (published January 2008))
- Electricity at Work Regulations 1989

Appendix 1 – Definitions and Appointments

DEFINITIONS

- 1. Designated Person**
The Designated Person is an individual appointed by the organisation who has overall authority and responsibility for the low voltage electricity system within the premises and who has a duty under the Health and Safety at Work Act 1974 to prepare and issue a general policy statement to health and safety at work, including the organisation and arrangements for carrying out that policy. This person should not be the Authorising Engineer.
- 2. Authorising Engineer**
An Authorising Engineer is appointed in writing by the Designated Person (if required) to take responsibility for the effective management of the safety guidance. The person appointed should possess the necessary degree of independence from local management to take action within this guidance.
- 3. Authorised Person**
An Authorised Person is appointed in writing by the management on the recommendation of the Authorising Engineer in accordance with this safety guidance and is responsible for the implementation and operation of this guidance with regard to working on, or the testing of, defined electrical equipment.
- 4. Competent Person**
A Competent Person is approved and appointed in writing by an Authorised person for defined work, possessing the necessary technical knowledge, skill and experience relevant to the nature of the work to be undertaken, who is able to prevent danger or, where appropriate, injury, and who is able to accept a permit to work from an Authorised Person.