



# Electrical Safety Code

Low Voltage Systems  
EHSP-007




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## **Electrical Safety Code for Low Voltage Systems**

### **1. General**

- 1.1.** The guidance in this document sets out the Estates and Campus Services Departments Safety Code on the safe operation and maintenance of low voltage systems and equipment for which it has responsibility.

It has been prepared to provide detailed “safe systems of working” covering activities and/or areas found within the “built estate” in order to meet the requirements of:

- The Electricity at Work Regulations 1989 (EAWR);
- The Health and Safety at Work etc. Act 1974;
- Management of Health and Safety at Work Regulations 1992;
- BS 7671:2018 Incorporating Amendment 1:2020
- University Health & Safety Policy Statement
- Latest Edition IEE Wiring Regulations
- University Health & Safety Policy - Risk Assessment

- 1.2.** Compliance with this document is mandatory:

- 1.2.1. All persons concerned with work to which this code applies must make themselves conversant with requirements of the document;  
1.2.2. Ignorance of the requirements shall not be accepted as an excuse for neglect of duty

### **2. Standards**

- 2.1.** This document is primarily concerned with the safe operation and maintenance of low voltage systems but it is equally important that the low voltage equipment installed:

**2.2.**

- a) complies with the appropriate British Standards and, where applicable, international and/or European Standards;  
b) has been satisfactorily tested;

- 2.3.** It is the Estates Department’s policy that all work and activities undertaken shall conform to the regulations and guidance, contained in 1.1 above.

It is the responsibility of all persons before carrying out any electrical work or repair activity to familiarise themselves with the necessary safety procedures outlined in this documentation. Where any ambiguity exists and also before work is commenced an ‘authorised person’ must be consulted, unless the person themselves are designated an ‘authorised’ person’ as defined in Definitions (see Appendix A) In some cases it will be necessary to arrange formal training sessions to familiarise staff such as with BS 7671 and Electricity at works Regulations 1989.

### 3. Duties

- 3.1. There is a legal obligation on all who may be concerned with the operation of, or work upon, the electrical equipment and systems at the managed premises to conduct their work so as to prevent **danger** or **injury** to themselves and/or others.

They should also be thoroughly conversant with all Regulations governing the work which they may undertake including but not limited to items listed in section 1.1.

### 4. Competence to Work on Systems

- 4.1. No person shall carry out work on any electrical system, appliance or equipment unless designated an Authorised or Skilled Person as defined in Definitions (see Appendix A) an individual's competence to do the work shall be assessed by Management and shall consist of an analysis of the following:

- a) The individual's knowledge of electricity;
- b) The individual's experience of electrical work;
- c) The individual's understanding of the system to be worked on and practical experience of that class of system;
- d) The individual's understanding of hazards which may arise during the work and the precautions which need to be taken;
- e) The individual's ability to recognise at all times whether it is safe for work to continue;
- f) Appointment of Authorised & Skilled Persons shall be in accordance with Appendix F in this document.
- g) Or if the individual is an Approved Electrician or Electrician with qualifications and certificates on RESET portal and is employed by a company who are Approved Members of the NICEIC or ECA they will be deemed a Skilled person. Comprehensive knowledge of and the University's electrical network and systems appropriate to the individual's roles and duties is of vital importance and must be confirmed prior to appointment.

### 5. High Voltage Electrical Systems

- 5.1. The University of Leicester has a HV network of 3 no ring mains from the DNO in coming in the Adrian Building. This included units all underground HV cables, building HV circuit breakers and transformers.
- 5.2. High voltage installations shall only be worked on by an 'Authorised (High Voltage) person' (or a 'Competent' person' working under his/her supervision). To achieve this Estates will outsource the maintenance and operational switching of all HV network devices.
- 5.3. Access to all substations and enclosures that house HV equipment is restricted and only permitted under a 'Limitation of Access HV' (PTW11), issued by Authorised Persons.

### 6. Low Voltage Electrical Supplies, Installations and Equipment

- 6.1. Low voltage electrical installations commence at the outgoing side of the main switch that is supplied by the secondary side of a transformer. Where a distribution system is supplied from the supply company's low voltage mains, these rules shall be applicable to all switchgear and apparatus installed after the supply company's equipment.
- 6.2. Voltage Definitions are defined in Appendix A, A9



## 7. Requirements for Persons Involved in Electrical Installations or Maintenance

- 7.1. All persons involved in the installation, maintenance or repair of any electrical equipment shall be conversant in the understanding and interpretation of the regulations and guidance set out in 1.1, together with any other requirements set out in this PERMIT TO WORK.
- 7.2. All persons involved in the installation, maintenance or repair of electrical equipment shall receive training in emergency resuscitation through an appropriate organization.
- 7.3. All tradesmen who come into contact with electrical work shall have a colour vision test as part of their initial medical examination and annually thereafter.

## 8. Safe Methods of Work and Safe Working Practices

- 8.1. Any work planned to be carried out on electrical systems/equipment will require either reference to the UOL Generic Risk Assessments for Electrical Maintenance Work or a detailed assessment for the specific task/job and subsequently the appropriate controls put in place prior to commencing with the work.
- 8.2. All work on low voltage supplies where the issuing of appropriate documentation has been deemed appropriate by an Authorised/Skilled Person will be carried out using the Permit to Work PW13 – (See Appendix D)
- 8.3. A drawing shall be available which clearly indicates the low voltage main and sub-main network applicable to the site/Building. All switchgear shall be clearly shown and suitably identified with points of cross connection and back feed connections highlighted. Drawings, Distribution Board, Test reports (Minor Works & EIC) are available on the interactive electrical installation management system; (<https://www.guardianreports.co.uk/<address required>>) If the person carrying out the work doesn't have access to the Guardian portal it will be the responsibility of the Project Manager or Asset Manager responsible for the work to download the documents in PDF format.
- 8.4. Whenever practicable work shall be carried out on equipment or cables that have previously been made electrically **dead**. Before any such work is carried out, the associated isolating switches must be locked in the off position if practicable and the equipment or cables must be tested to verify that they are electrically dead. Lockable stop buttons shall not be used as a means of isolation. (See Appendix B1 – Guidance on acceptable methods of making electrical equipment and conductors **dead** and practical steps to prevent them being made **live** while work is in progress and Appendix B2 – Safeworking procedure for electrical equipment which is to be made **dead** prior to commencement of work)
- 8.5. The locking of switchgear in the “open position” to prevent the unauthorised closure of circuits where work is undertaken shall be strictly adhered to. See Appendix A.21 for key retention procedure.
- 8.6. A mimic diagram or Schematic drawing shall be displayed at low voltage switchboard locations. A sequence of operations shall be established of the tasks that need to be carried out. This shall involve, where necessary a switching schedule.  
  
**Note:** It is not recommended that the “Permit to Work – Electrical Equipment/Systems Made Dead” system should be used for Final Circuit Isolation within a department).
- 8.7. A personalised “safety locking” policy is to be implemented; this is where each Skilled Person has a unique personal padlock and a caution notice which includes his name. This will enable a final circuit etc. to be locked off at the point of isolation and shows others that the system is being worked on by the person named on the caution notice. (See sub-section 11 - Distribution Switchrooms and Appendix C). Contractors shall issue their own unique personal padlocks and caution notices.
- 8.8. Where it is considered that there is a need for a second person to be present in the interests of safety, supervision shall be consulted before proceeding.

## 9. Faculty/Department Isolation (Staff Protection)

- 9.1. When work is to be carried out on a final circuit a “LOW VOLTAGE PERMIT TO WORK” (PW 13) is not normally required if safe isolation can be made at the distribution board or local isolator.
- 9.2. Before commencement of work affecting a Faculty or Department, a check shall be made with the Senior Member of that location with regard to what essential supplies and life safety systems (including emergency lights, Fire Alarms and gas detection) will be affected, *Safety Locks and/or Locking Kits must be applied to the circuit in question*. This confirms that the isolation has been carried out in accordance with the EAWR 1989 and that the circuit has been made safe and will remain safe for the duration of the work

## 10. Working on “Live” Equipment

### 10.1. The guidance of this code is generally to restrict work on or near live low voltage conductors, which for all practical purposes is limited to:

- diagnostic testing, e.g. voltage/current/thermographic measurement;
- the removal and replacement of fuse carriers in final circuits;
- the removal and replacement of plug-in components;

Certain precautions should be taken to ensure that the safety of the individual carrying out the type of work referred to above is not compromised:

- a) No person shall work alone on or near exposed live electrical equipment or cables. A “named” person who has appropriate “first aid training should be in attendance.
- b) Adequate working space, lighting and the control of the work area by barrier/restricted access, and adequate notices.
- c) Only tools in a sound condition and test equipment complying with HSE Guidance Note GS38 (*Electrical test equipment for use on low voltage electrical systems*) shall be used, suitably insulated shoes in serviceable order or a rubber mat shall also be used. Suitably insulated gloves should be worn whenever there is a risk of direct contact with a live conductor or conductive part. Where practicable live conductors shall be screened off.
- d) If the equipment is not IP2X or IPXXB standard, a check of all the precautions proposed including the use of the correct PPE should be confirmed before proceeding with the work activity;
- e) Where current transformers are installed in conjunction with auxiliary apparatus or test equipment, in no circumstances shall be secondary winding be open circuited whilst the primary winding is still electrically live.

Live working other than as specified above should not be normally considered. The Electricity at Work Regulations 1989 makes it illegal to work on or near live equipment without first complying with Regulation 14:

#### Regulation 14

*No person shall be engaged in any work activity on or so near any live conductor (other than one suitably covered with insulation material so as to prevent danger) that danger may arise unless:*

*It is unreasonable in all the circumstances for the conductors to be dead*

*And*

*It is reasonable in all the circumstances for the person to be at work on or near the conductor while it is live*

*And*

*Suitable precautions (including, where necessary, the provision of suitable protective equipment) are taken to prevent injury.”*



## 11. Distribution LV Switchrooms

- 11.1. Switchrooms shall be kept free from all obstructions (e.g. surplus materials or spares) to minimise the possibility of persons falling or otherwise injuring themselves while working in the switchroom.
- 11.2. Unattended switchrooms shall be kept locked and access shall be restricted to authorised personnel only. Sub-main distribution boards shall also be kept locked at all times when unattended.
- 11.3. Where considered appropriate, nominated and other suitably trained persons with approved authorisation may also be given access to particular areas which come within their responsibility.
- 11.4. Where there is shared access to rooms containing distribution boards (i.e. cleaners cupboards, IT Server rooms) the distribution boards must be kept locked at all times

## 12. Colour Harmonisation - Circuit Identification and Updating

- 12.1. All single-phase wiring will be carried out in the following colours: phase/line conductor – **Brown**; neutral conductor – **Blue**; protective conductor/earth - **Green and Yellow**
- 12.2. Three-phase wiring to use the following colours: L1 **Brown**, L2 **Black** and L3 **Grey** This enables line (phase) colours to be identified without ambiguities;
- 12.3. Mixed installations - Care has to be taken where additions or alterations are made to older (pre 2004) installations as there will be a mixed of old and new colours.

### SINGLE-PHASE INSTALLATIONS

Conductor	Old Colours	New Colours
Phase	<b>Red</b>	<b>Brown</b>
Neutral	Black	<b>Blue</b>
Protective conductor	<b>Green-and-</b>	<b>Green-and-</b>



### THREE-PHASE INSTALLATIONS

- 12.4. There is a need to identify cores specifically. The following marking is:

Conductor	Old Colours	New Colours
Phase L1	Red	Brown
Phase L2	Yellow	Black
Phase L3	Blue	Grey
Neutral	Black	Blue

- 12.5. All circuit identities on switches and distribution boards shall be clear and accurate.
- 12.6. When rearrangements or additions to circuits or distribution boards are carried out, the identities on switches and distribution boards shall be updated at the same time. In these cases temporary labels shall only be used in exceptional circumstances and then only for a limited period. The final circuit information must be updated on the Guardian web portal where Distribution Board Charts can be updated and printed off. The revised distribution chart should be mounted on or adjacent to the distribution board, protected in a laminated sheet.
- 12.7. (<https://www.guardianreports.co.uk/<address required>>) If the person carrying out the work doesn't have access to the Guardian portal it will be the responsibility of the Project Manager or Asset Manager responsible for the work to upload certificates or download documents in PDF format.

### 13. Testing

- 13.1. The Electricity at Work Regulations 1989, Regulation 4(4) states that "Any equipment provided under these Regulations for the purpose of protecting persons at work or near electrical equipment shall be suitable for the use for which it is provided, be maintained in a condition suitable for that use and be properly used"
- 13.2. Electrical installation testing shall be carried out in accordance with the current version of BS 7671 IEE Regulations. The aim of these Regulations as always is to promote best practice when installing and maintaining systems, electrical safety, and provided this is borne in mind, the need for testing will always be apparent.
- 13.3. When carrying out the replacement of damaged or faulty equipment and the fixed wiring installation has to be worked upon, then tests should be carried out and a minor works certificate issued. (This could mean improvements to the circuit are required above and beyond the initial replacement works)
- 13.4. Copies of all testing records must then be uploaded onto the Guardian Web Portal for compliance checking and updating records, either Minor Works Certificates (MWC) or Electrical Installation Certificates (EIC). In addition a further copy is to be issued to the Project Manager or Works Supervisor for inclusion in H&S files - O&M manuals. (<https://www.guardianreports.co.uk/<address required>>) If the person carrying out the work doesn't have access to the Guardian portal it will be the responsibility of the Project Manager or Asset Manager responsible for the work to download documents in PDF format.
- 13.5. Good practice and the requirements of the Health and Safety at Work etc. Act 1974, the Electricity at Work Regulations 1989 and the Work Equipment Regulations 1992 require test instruments to be regularly checked, maintained and re-calibrated and the serial numbers shall be recorded along with test results in a master log of equipment. For UoL Estates operatives this will be held by the Estates Reactive Maintenance Store for Contractors it will be held at their respective offices and will be available for inspection.
- 13.6. Only test probes conforming to British Standards shall be used in conjunction with portable test equipment unless such equipment requires wiring into the system being tested (e.g. connections to current transformers, etc.) when approved connectors shall be used.
- 13.7. Electricians test equipment shall conform to the requirements of HSE document GS38 (*Electrical test equipment for use on low voltage electrical systems*) and be proved before and after use on a known live source.



- 13.8. Electrical test equipment before being used must be personally checked to ensure the equipment is safe for use and inspected for damage, especially mechanical damage to insulation parts (Records are to be kept of inspection and testing of the equipment). Test equipment **must** be checked on a known source (proving unit) before and after proving that a circuit is dead.
- 13.9. Personal Protective Equipment including rubber gloves, insulated shoes, goggles, rubber mats etc shall be utilized to ensure the safety of the individuals carrying out testing in the vicinity of live connections.
- 13.10. Only suitable apparatus shall be used when testing close to distribution transformers because of the danger of high prospective fault current levels. Also, testing personnel must be aware not to introduce added hazards when carrying out certain tests i.e. heavy current tests.
- 13.10 Tools should be fit for purpose – Trade-staff should have a comprehensive set of safe and functional tools for use on electrical systems.

#### 14. Types and Use of Portable Tools

- 14.1. Battery powered or Low voltage 110 volt centre tapped portable tools shall be used where possible and in particular hazardous areas. Portable inspection lamps must be of an approved design suitable for the environment in which they are used. These shall be of the separated extra low voltage type.
- 14.2. When there is no other alternative to the use of 230 volt portable tools, PRCD (Portable RCD usually with an RCD incorporated into a plug) protection shall be utilised.

#### 15. Servicing and Maintenance

- 15.1. All low voltage equipment and installations should be regularly inspected, serviced and tested to ensure that they are maintained in a safe and serviceable condition.

#### 16. Alarm Systems

- 16.1. Where any **fire alarm isolations** or **impairments to fire systems**, including fire stopping & fire doors, these must be notified 72 hours in advance submitted on FIRE SYSTEMS IMPAIRMENT PTW form (PW14) (Appendix G)
- 16.2. Where an alarm system is to be muted or disconnected for any reason, all departmental heads of the areas served by the system to be disconnected shall first be notified.
- 16.3. Where an alarm system is linked to the Security Office (via DRAX), the Security Office/External Control Room shall be notified before and after any work is carried out.
- 16.4. *If alarm systems are to be left disconnected overnight the UOL Insurance & Risk Manager and the University Security Team must be notified before 3pm to confirm the acceptable level of cover needed for the Universities Insurance cover***
- 16.5. Before any testing of an alarm system takes place, all personnel who are required to respond to the alarm shall first be notified.



## 17. Monitoring Safety Performance

17.1. A positive safety culture is essential for the safety of those at work and others (students, visitors etc) on UoL controlled property. Such a culture can only effectively be engendered and sustained by managers and supervisors taking an active interest in all safety issues and particularly from an electrical safety viewpoint by them:

- Visiting work sites and communicating on safety issues;
- Visiting workshops, substations and switchrooms and insisting on high standards of tidiness together with all other safety requirements;
- Been seen by the workforce as taking a positive safety attitude and giving effective safety leadership;

## 18. Management of records

18.1. To ensure total compliance with the Electricity at Work Regulations 1989 & Duty Holder responsibility have provided a website to comply with Regulations 4(1) & 4(2) and Paragraph 69 – ‘*all systems shall at all times be of such construction so as not to give rise to danger*’ AND – ‘*evidence of maintenance via test & inspection records, must be kept throughout the working life of an electrical system.*’

18.2. Where changes to the existing systems are made these changes must be recorded to ensure that all of records in the form of network drawings, electrical installation condition reports, and distribution board schedules are current.

18.3. Changes to the system are controlled via the Guardian website change control system.

This is essential and enables UoL to effectively control the work on our system. (<https://www.guardianreports.co.uk/leicester/default.aspx>) If the person carrying out the work doesn't have access to the Guardian portal it will be the responsibility of the Project Manager or Asset Manager responsible for the work to upload certification or download the documents and issue in PDF format.

18.4. Changes to the system that will require the updating of records include the following;

- install or removal of a circuit
- install or removal of a sub-main cable
- install or removal of equipment e.g. distribution board, isolator
- upgrade or reduce protective device type or rating
- alteration to a circuit or sub-main e.g. add socket outlets or lighting points

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## Appendix A

### Definitions

#### Personnel

- A.1 **Authorising Engineer (low voltage)** – Engineer(s) with appropriate experience and technical knowledge, appointed in writing by the Estate Management, to give authority to advise on and monitor the safety arrangements for the electrical low voltage energy supply and distribution systems of that organisation to ensure compliance with the relevant Regulations and to assess the suitability and appointment of candidates in writing to be “Senior Authorised/Authorised Persons.”
- A.2 **Authorised Person (including Senior Authorised Person)** – an individual possessing adequate technical knowledge and having received appropriate training, appointed in writing by the Authorising Engineer (ETA Projects) to be responsible for the practical implementation and operation of management’s safety policy and procedures on defined electrical systems.
- (Practical HV Switching and Maintenance will be carried out by Central Power Ltd as the Universities designated contracted SAP)
- A.3 **Project Manager/Engineer** – an individual possessing adequate technical knowledge and having received appropriate training to contract manage works packages and has been appointed to the project to provide Health & Safety Management to HSAW Act 1974, the Electricity at Work Regulations 1989. They shall be competent to issue permits and ensure Contractors and Skilled Persons are of a standard required by this guidance.
- A.4 **Skilled Person (electrical)** – Person who possesses, as appropriate to the nature of the electrical works to be undertaken, adequate education, training and practical skills, and who is able to perceive risks and avoid hazards which electricity can create.
- Qualifications: NVQ level 3, BTec 3, C & G. Latest IET Wiring Regulations (BS 7671) Plus appropriate training and refresher training
- In Addition they are if required to install or alter electrical circuits, they should have attained C&G 2381 including most current updates. And if required to undertake testing they should have attained C&G 2394/2395.
- A.5 **An Accompanying Safety Person (ASP)**, is a person not involved in the work or test who has received training in emergency first-aid for electric shock and who has adequate knowledge, experience and the ability to avoid danger, keep watch, prevent interruption, etc. Is this current working practice?
- A.6 **Contractor’s Skilled Person** – where a contractor has been appointed to provide Skilled Persons for a system it will be the contractor’s responsibility to ensure that each Skilled Person is of a standard required by this guidance.
- A.7 **Contractor’s staff** - contractor’s staff may act as Skilled Persons and/or instructed persons providing the authorised person in overall charge of job safety is satisfied that they meet the standards detailed in this safety code.
- A.8 **Instructed person (electrical)** – Person adequately advised or supervised by a Skilled Person (as defined) to enable that person to perceive risks and to avoid hazards which electrically can create.

A.9 **Designated Person** – an individual who has overall authority and responsibility for the low voltage electricity system within the premises and who has a duty under the HSW Act 1974 to prepare and issue a general policy statement on health and safety at work, including the organisation and arrangements for carrying out that policy. This person should not be the Authorising Engineer.

A.10 **Duty holder** – a person on whom the Electricity at Work Regulations 1989 impose a duty in connection with safety.

#### General

A.11 **Voltage, nominal** – Voltage by which an installation (or part of an installation) is designated. The following ranges of nominal voltage (rms values for ac) are defined:

- **Extra-Low** Not exceeding 50V ac or 120V ripple free dc, whether between conductors or to Earth.
- **Low** Exceeding extra-low voltage but not exceeding 100V ac or 1500V dc between conductors or 600V ac or 900V dc between conductors and Earth. (It should be noted the nominal voltage varies across the University buildings dependent on whether Voltage Regulators have been connected to the incoming service.)
- **High** Normally exceeding low voltage.

A.12 **Charged** – means that the item has become charged by means such as static or induction charging, or has retained a charge due to capacitance effects even though it may be disconnected from the rest of the system.

A.13 **Danger** – a risk of injury.

A.14 **Dead** – means not electrically “live” or “charged”;

A.15 **Electrical equipment** – includes anything used, intended to be used or installed for use to generate, provide, transmit, transform, conduct, distribute, control, measure or use electricity.

A.16 **Injury** – death or personal injury from shock, electric burn, electrical explosion or arcing, or from fire or explosion initiated by electrical energy.

A.17 **Isolated** – the disconnection and separation of electrical equipment and circuit conductors, by use of an isolating device(s) or alternative means, from every source of electrical energy in such a way that its disconnection and separation is secure.

A.18 **Isolating device** – a purpose designed item of equipment, which provides a secure method of disconnecting and separating electrical contacts and/or circuit conductors at a point of isolation.

A.19 **Live** – means that the equipment in question is at a voltage, by being connected to a source of electricity. This implies that, unless otherwise stated, the live parts are exposed so that they can be touched either directly or indirectly by means of some conducting object and that they are either live at a dangerous potential (over 50 volts AC or 120 volts DC) or at a dangerous energy level.



#### A.20 Notices –

- a. **Caution notice** – a notice in approved form attached to electrical equipment conveying a warning against interference with such equipment, stating, for example, “CAUTION DO NOT INTERFERE”; (Safety Locking Kit)
- b. **Danger notice** – a notice in approved form attached to electrical equipment or sections when live, calling attention to the **danger** of approach to or interfere with such equipment or sections, stating, for example, “DANGER LIVE EQUIPMENT”. (Safety Locking Kit)

#### A.21 LV Sanction to Work On/Near Live Equipment –

**LV Sanction to Work (PW-15)** is primarily a statement that the designated Authorised Person or Project Manager as defined in Definitions (see Appendix A) will allow **LV electrical work** to proceed, instructing the Skilled Persons (electrical) to carry out LV isolations in accordance with the definitions in this document. The works on the permit are to be managed and coordinated by the Authorised Person or Project Manager including but not limited to coordinating with the relevant parties/departments to notify and agreed the isolations, defining the extent of the equipment or areas to be isolated prior to any isolations starting. (Appendix E)

The information given in the permit must be precise, detailed and accurate. It must confirm the Authorised Person or Project Manager has received and approved RAMS, program of work highlighting the dates and times isolations are required, draft copies of Low Voltage Permit to Work/Safe Isolation procedures from the Contractor Skilled Person carrying out the isolations.

The Low Voltage Permit to Work/Safe Isolation should be based around the IET safe working practices or utilize UoL PW13, copy attached.

The Low Voltage Permit to Work/Safe Isolation is to be completed and signed by the Contractor Skilled Person carrying out the isolation work and include confirmation that circuits have been made safe, tested, include details of the points of isolation, earthing if applied, signage, time and date. Once the works are completed the Contractor Skilled Person must sign, date and time, confirming that testing has been completed and the isolations removed.

Before the **LV Sanction to Work (PW15)** permit can be closed the electrical test certification must be issued to the Project or Asset manager responsible for the project. Copy of the Low Voltage Permit to Work/Safe Isolation must be returned as soon as practicable to the Project or Asset Manager along with the electrical test certificate (EIC or MWC). The Project or Asset manager will then send the electrical test certification to a UOL Appointed Person for checking and filing on the Guardian Portal (<https://www.guardianreports.co.uk/leicester/default.aspx>)

#### A.22 Permit to Work –

**Low Voltage Permit to Work (PW13)** is primarily a statement that a circuit or item of equipment is safe to work on. The information given in the permit must be precise, detailed and accurate. It must state which equipment, etc has been made safe, the steps by which this safety has been achieved and it must state exactly what work is to be done. (Appendix E) the person issuing the permit must carry out all the isolation, proving and switching activities.

**Limitation of Access (PW11 - HV & PW12 - LV).** The information given in the permit must be precise, detailed and accurate. It must state the hazards in the area and restriction in working in the environment.



- A.23 **Risk Assessment & Method Statements (RAMS)** – The purpose of the risk assessment is to adequately control risks, leading to a safe system of working. These assessments must be carried out in-line with the University's Health and Safety Policy. The method statement defines clearly the sequence and extent of the works including the appropriate permits to work required.

Where RAMS are issued specifically for electrical isolation works must include details of the extent of works and areas or equipment affected, the isolations required, locking off procedures, any switching or earthing and the testing sequences. All RAMS shall be uploaded to the RESET portal prior to works commencing.

- A.24 **HV Safety Key Boxes** – Safety Key Boxes shall be held within Main Substation the custody of these will be the responsibility of the Authorised Person(s) (Appendix C)

- Each wall mounted safety key box is to bear the name 'Primary or Working Safety KeyBox'
- Only the Authorised Person(s) shall hold the key to the wall mounted Safety Key Boxes.
- The 'Working Safety Key Box' is to contain the secondary key to safety locks in use, the primary key to remain with the Person applying the isolating lock.
- The Authorised Person(s) is to retain the secondary key until the works are complete or the permit-to-work cancelled;
- In the event of the secondary key being called into use, it is the responsibility of the Authorised Person(s) to ensure all safety checks have been carried out prior to re-energising the circuit in question.

- A.25 **Safety Locks and Locking Kits** – Individual Red Safety Keys and Locking Sets issued from the Reactive Maintenance Stores in The Charles Wilson Building to the Reactive Maintenance team as appropriate (Appendix C)

Additional HV "Red" Safety Padlocks are kept in the HV 'Primary Safety Key Box', as described above

"Blue" Working Padlocks, with individual keys, are also kept in the HV 'Working Safety KeyBox' for use by external contractors or consultants on dual isolations





**Acceptable methods of making electrical equipment and conductor's safe (dead) and practical steps to prevent them being made live while work is in progress.**

**Methods of making dead and isolated are:**

1. The withdrawal of fuse links;
2. The removal of solid links;
3. The operation of circuit breakers (single pole mcb's are accepted as safe isolation on TN systems (not TT) provided neutral and live conductors are proved dead));
4. The opening of switch fuses/fuse switches (and where visible, checking to ensure that the blades have opened);
5. Physical disconnection of conductors (only to be carried out when made **dead**);
6. The withdrawal of a plug from the socket-outlet;

Note: Automatic closing switching devices, such as time switches, must not be used as a means of making circuit conductors or electrical equipment **dead** and **isolated**

**Practical steps to prevent electrical equipment and circuit conductors being made live while work is in progress can include:**

1. the retention of fuse links/solid links and withdrawable circuit breakers and the application of hazard marking tape;
2. Locking circuit breakers in the OFF (open) position and the personal retention of keys;
3. Locking of distribution board and consumer unit doors, posting caution notices and the personal retention of keys;
4. Locking of switchroom doors, posting caution notices and the personal retention of keys, with suitable steps taken to prevent unauthorised access;
5. Padlocking of switch fuses/fuse switches and the personal retention of keys;
6. Removal and personal retention of interlocking keys where these mechanically interlock with switches or circuit breakers;
7. Specially designed interlocking facilities, for example lock-out boxes;

The means of preventing electrical equipment and circuit conductors from being made live should be appropriate for the protection devices installed.

The previously identified means of preventing re-energising should be adopted while work is in progress. Where their application is impractical, procedures such as the use of **caution** notices supplemented possibly by continuous supervision of the point of **isolation**, may need to be considered to satisfy the Electricity at Work Regulations 1989.

Notices shall be in an acceptable format. However, where tape notices may be appropriate; these should generally be restricted to use on individual ways of consumer units and distribution boards, and locations where larger notices are impractical.

**Appendix B2**

**Safe working procedure for electrical equipment which is to be made dead prior to commencement of work**

1. Plan Job - Obtain Permission to Proceed	
2. Identify Distribution Boards/Supplies and specific circuits	
Consider the need for additional precautions and complete RAMS	
4. Issue Permit to Work	
5A. Prove the test instrument 5B. Prove the equipment has been made <b>dead</b> 5C. Re-prove the test instrument	
6. Securely <b>isolate</b> circuit (visible break & safety lock) – with contact details of who controls the key.	
7. Attach temporary <b>earth</b> leads to the equipment, if necessary	
8. Fix <b>danger/warning</b> notices – with contact details of who controls the key.	
9. Ensure understanding of the job before work starts	



### Safety & Working Padlocks

1. **Authorised Persons Padlocks (Black)**, Issued to AP, all with the same suited key. Added to their issued Traka bunch of keys, with a spare key kept in the RM Maintenance Master safe. Additional AP padlocks are fitted to the front of the two Safety Key Boxes, wall mounted in the Adrian Substation, to facilitate controlled issue of HV Safety/Working padlock keys.
2. **HV (Red) Safety Locks** . 20no individually identified padlock & keys. These are kept in the Safety Key Boxes in the Main Substation, when not in use.
3. **Reactive Maintenance, LV Safety Locks and Locking Sets (Red)** Each RM electrician has been issued with individual safety locks and Locking Set, The padlocks have a single key kept in their possession at all times. The Locking Sets include multi hasp locks for co-ordinated isolation, as necessary
4. **HV Working Padlocks (Orange/Blue/Green)** Each HV Ring has a colour coded set of padlocks. Each individual RMU, LHS/RHS Ring Isolator & DNO Feeder Isolators (XX & YY) has the same set of coloured padlocks to prevent unauthorised access inside the substations. The keys for the HV padlocks are issued by the AP managing the work, from the Safety Key Boxes in the Main Substation. The AP must amend the Main Substation Mimic Panel as keys are issued and the status of the HV ring mains is altered i.e. points of isolation, points of earthing.
5. **Contractors (Blue) Working Padlocks** , HV padlock set, engraved/marked with own number, issue to a contractor to replace the HV working padlock and take ownership equipment/ circuit during isolation. Used in conjunction with Multi Hasp Locking sets for co-ordinated isolation events with the AP managing the works.

### Estates Management Team (with electrical responsibility)

Name of Holder	Position	Designation
Richard Thomas	Director of Asset Management and Compliance	Designated Person
Mick Frost	Head of Asset Management	Designated Person
Chris Souter	Senior Electrical Asset Manager	Designated Person & Senior Authorised Person HV & LV
Stuart Little	Building Services Engineer (Electrical)	Authorised Person LV
Neil Hunt	Building Services Engineer	Authorised Person HV & LV
Matt Boylan	Electrical Technician	Authorised Person HV & LV
Mo Suleman	Electrical Technician	Authorised Person LV

### Development Depart

	Number
Managers, Engineers, Architects, Surveyors.	
Supervisors.	

### Miscellaneous

Contractors – (TBC) Are to implement their own isolation and lock off procedures when not managing coordinated isolation with UoL



**Appendix D**

 <b>UNIVERSITY OF LEICESTER</b>	<b>ESTATES and FACILITIES MANAGEMENT DIVISION</b> Mallard House, Brookfield, Leicester LE2 1RO, UK T +44 (0)116 252 2522 F +44(0)116 223 1333	<b>PW-13</b>
<b>Low Voltage Permit to Work</b>		<b>Ref: 83</b>
<p><b>PART 1 - TO BE COMPLETED BY THE AUTHORISED PERSON</b></p> <p>Building: _____ Location: _____</p> <p>I hereby declare that it is safe to work on the following equipment which has been made dead, isolated and earthed in accordance with the requirements of the University Safety Rules and Procedures.          I have physically identified the equipment, explained the extent of the work and demonstrated the safety arrangements to the Person in Charge of the work.          They have also been shown the diagram on the associated Safety Programme No: _____</p> <p>Equipment to be worked on: <input style="width: 300px; height: 20px;" type="text"/></p> <p>Location of Equipment: <input style="width: 300px; height: 20px;" type="text"/></p> <p>Details of Work to be Done: <input style="width: 300px; height: 20px;" type="text"/></p> <hr/> <p>Specific Points Where Equipment is Isolated: <input style="width: 300px; height: 20px;" type="text"/></p> <p>Specific Points Where Equipment is Earthed: <input style="width: 300px; height: 20px;" type="text"/></p> <p>Specific Points Where Danger Signs are Placed: <input style="width: 300px; height: 20px;" type="text"/></p> <hr/> <p>Special Instructions or Safety Measures: <input style="width: 300px; height: 20px;" type="text"/></p> <p>This permit is valid only for the job described and the timescales on this permit. Maximum duration 1 day.</p> <p>Date: _____ Time From: _____ To: _____</p> <p>Authorised Person: _____ Date: _____</p> <p>Signature: _____ Contact No _____</p> <hr/> <p><b>PART 2 - TO BE COMPLETED BY THE PERSON IN CHARGE</b></p> <p>I acknowledge receipt of this Permit to Work and agree to accept responsibility for the work described in Part 1. I will comply with the procedures detailed in the University Rules and Procedures.          I will retain this Permit whilst work is in progress and will return it to the Authorised Person when work is completed or</p> <p>Person in Charge: _____ Date: _____</p> <p>Signature: _____ Time: _____</p> <p>Company: _____</p> <p align="center"><b>IN CASE OF EMERGENCIES CONTACT SECURITY ON 0116 252 2023 OR MAINTENANCE ON 0116 252 2319</b></p>		



 <p>UNIVERSITY OF <b>LEICESTER</b></p>	ESTATES and FACILITIES MANAGEMENT DIVISION	PW-13
Low Voltage Permit to Work		
<p><b>PART 3 - TO BE COMPLETED BY THE PERSON IN CHARGE</b></p> <p>I hereby declare that the work described in Part 1 of this Permit has been:</p> <ul style="list-style-type: none"> <li>* <i>delete as appropriate.</i></li> <li>* satisfactorily completed and that all persons, tools and instruments under my control have been withdrawn.</li> <li style="padding-left: 40px;">or</li> <li>* stopped and abandoned for the reasons given below</li> </ul> <p>_____</p> <p>_____</p> <p>_____</p> <p>Person in Charge: _____ Date: _____</p> <p>Signature: _____ Time _____</p> <p>Company: _____</p> <p>_____</p> <p><b>PART 4 - TO BE COMPLETED BY THE AUTHORISED PERSON</b></p> <p>I hereby declare that the work described in Part 1 of this Permit has been:</p> <ul style="list-style-type: none"> <li>* <i>delete as appropriate.</i></li> <li>* satisfactorily completed</li> <li style="padding-left: 40px;">or</li> <li>* stopped and made safe</li> </ul> <p>The original parts 1 and 2 of the permit have been returned and this permit is now cancelled.</p> <p>Authorised Person: _____ Date: _____</p> <p>Signature: _____ Time _____</p> <p>_____</p> <p style="text-align: center;"><b>For Information</b></p> <p>Before entering:            Let someone know you're going into a switchroom and when you are likely to return. If you are unsure about any aspect of the job, STOP and seek further advice.</p> <p>As you enter:                Check emergency exit doors are accessible and operable. Listen for hissing sounds, if you hear any do not enter. Smell for burning, if you smell burning do not enter.</p> <p>While inside:                Do not touch any electrical equipment. Do not operate any switches except light switches and power sockets. Do not leave sub-station open or unattended. Ladders, steps or scaffolds required for use should be non-conductive and suitable for electrical work. No eating or drinking is allowed in the sub-stations. If you hear hissing sounds - get out. If you smell burning smells - get out.</p> <p>As you leave:                Clean up, Lock up, Return permit and keys to Authorised Person.</p>		



## Appendix E

### Estates Department (In-House Procedures)

#### **DECISION PROCESS FOR ISSUING LOW VOLTAGE PERMIT TO WORK/SAFE ISOLATION PERMIT**

**Under no circumstances will the following type of work involving LIVE supplies be permitted:-**

- a) Disconnection & removal of LIVE incoming supply cables to distribution boards,isolators, etc.
- b) Any modifications to LV ELECTRICAL EQUIPMENT which could give access to LIVECIRCUIT CONDUCTORS.
- c) Connection/disconnection of outgoing CIRCUIT CONDUCTORS in LV ELECTRICAL EQUIPMENT which gives access to LIVE exposed busbars or terminals.
- d) Cable jointing on LIVE LOW VOLTAGE cables.

#### **1. Works requiring the issue of a Permit to Work**

The issue of LOW VOLTAGE PERMIT TO WORK/LV SANCTION TO WORK are required for the following work activities and must be issued by a COMPETENT/SKILLED PERSON OR AUTHORISED PERSON.

- a) Connection/disconnection of outgoing sub-circuit cables from sub-distribution equipment with means of isolation by withdrawing local fuses and/or miniature circuit breakers.
- b) Connection, disconnection, testing and maintenance of sub-circuit cables and connected apparatus associated with lighting, power and motor supplies etc.

Before commencement of work affecting a Faculty or Department, a check shall be made with the Senior Member/Department Heads of that location with regard to what electrical supplies will be affected, then a LOW VOLTAGE PERMIT TO WORK (PW13) or LV SANCTION TO WORK (PW15) shall be completed by the COMPETENT/SKILLED PERSON responsible for the isolation. This permit confirms that the isolation has been carried out in accordance with the EAWR 1989 and that the circuit has been made safe and will remain safe for the duration of the work. When the works are completed the permit must be signed, time and dated, by the COMPETENT/SKILLED PERSON carrying out the isolation works then the form returned to the issuing authority along with test results.

*The circuits and areas where LOW VOLTAGE PERMIT TO WORK/LV SANCTION TO WORK must be issued following initial energisation of supplies as amplified below:-*

- a) LOW VOLTAGE side of 11KV/433V transformer, including cables and/or bus-duct to LV switchboard.
- b) Generator, including stored power packs, prime mover for generator, cables and/or bus-duct to LV switchboard.
- c) UPS, including stored power packs, cables and/or bus-duct to LV switchboard.



- d) LOW VOLTAGE switchboard inclusive of incoming bus-section and outgoing circuitbreakers, fuse switches, miniature circuit breakers etc.
- e) Outgoing cables from LOW VOLTAGE switchboard to **REMOTE** motors, distributionboards, control panels, etc.
- f) Outgoing cables from 415V T.P. & N distribution boards to **REMOTE** three phase motors, heaters, etc.
- g) Any work within plant control panels including incoming or outgoing supply and control circuits which give access to exposed LIVE terminals.

## 2. Permits to Work issued for Access only into Switch Rooms/Plant Rooms

- h) Any construction/maintenance work by other trades in switchrooms where either LOW VOLTAGE OR HIGH VOLTAGE supplies are present 'LIMITATION OF ACCESS LV' (PW12) and/or 'LIMITATION OF ACCESS HV' (PW11) permits should be issued. All such areas should be locked and keys retained by the permit holder when unoccupied.

The foregoing includes new or maintenance work on main switch panels requiring switching operations, locking-off to make safe, fitting of protective barriers, etc.

## 3. Permits to Work issued on a discretionary basis


The issue of LOW VOLTAGE PERMIT TO WORK/LV SANCTION TO WORK are discretionary, where no DANGER will arise, in the considered view of the COMPETENT/SKILLED PERSON (electrical) OR AUTHORISED PERSON required to work on that part of the system that has been made dead as follows:

- a) Connection, disconnection or maintenance work on motors, distribution boards and panels where **LOCAL** isolator facilities are provided adjacent to or forming part of the equipment.  
**Warning Note:** This also includes lamp replacement. Special precautions may also need to be taken where unusual HAZARDS exist such as separate emergency lighting circuits or where 415 volts may be present at lighting switches.
- b) Work on sub-circuits for the purpose of LOW VOLTAGE tests, subject to the appropriate LIVE working precautions being taken.

**NOTE:** WARNING NOTICES should be posted at all times when work is being carried out.



Appendix F

 <b>UNIVERSITY OF LEICESTER</b>	<b>ESTATES and FACILITIES MANAGEMENT DIVISION</b> Mallard House, Brookfield, Leicester LE2 1RQ, UK T +44 (0)116 252 2522 F +44(0)116 223 1333	<h1 style="margin: 0;">PW-11</h1>
<b>Limitation-of-Access HV</b>		<b>Ref: 28</b>
<p><b>PART 1 - TO BE COMPLETED BY THE AUTHORISED PERSON</b></p> <p>Building: _____ Location: _____</p> <p>I hereby declare that it is safe for the following work to be carried out in the location as stated above. I have physically identified the equipment, explained the extent of the work and demonstrated the safety arrangements to the Person in Charge of the work.</p> <p>Work to be Carried Out: <input style="width: 300px; height: 25px;" type="text"/></p> <p>This work does not require a HV permit to work (PW01) or Sanction to Test (PW10)</p> <p>Details of any Risk Assessment/Method Statements: <input style="width: 300px; height: 25px;" type="text"/></p> <hr/> <p>Specific Points Where Danger Signs are Placed: <input style="width: 300px; height: 25px;" type="text"/></p> <hr/> <p>Special Instructions or Safety Measures: <input style="width: 300px; height: 25px;" type="text"/></p> <p>This Limitation-of-Access is valid only for the job described and the timescales on this permit. Maximum duration 1 day.</p> <p>Date: _____ Time From: _____ To: _____</p> <p>Authorised Person: _____ Date: _____</p> <p>Signature: _____ Contact No: _____</p> <hr/> <p><b>PART 2 - TO BE COMPLETED BY THE PERSON IN CHARGE</b></p> <p>I acknowledge receipt of this Limitation of Access HV and agree to accept responsibility for the work described in Part 1. I will comply with the procedures detailed in the University Rules and Procedures. No work other than that specified will be carried out by myself or person in charge. I will retain this Limitation whilst work is in progress and will return it to the Authorised Person when work is completed or suspended.</p> <p>Person in Charge: _____ Date: _____</p> <p>Signature: _____ Time: _____</p> <p>Company: _____</p> <p style="text-align: center; color: red; font-weight: bold;">IN CASE OF EMERGENCIES CONTACT SECURITY ON 0116 252 2023 OR MAINTENANCE ON 0116 252 2319</p>		






 <p><b>UNIVERSITY OF LEICESTER</b></p>	<p><b>ESTATES and FACILITIES MANAGEMENT DIVISION</b></p> <p>Mallard House, Brookfield, Leicester LE2 1RQ, UK T +44 (0)116 252 2522 F +44(0)116 223 1333</p>	<p><b>PW-11</b></p>
<p><b>Limitation-of-Access</b></p>		
<p><b>PART 3 - TO BE COMPLETED BY THE PERSON IN CHARGE</b></p> <p>I hereby declare that the work described in Part 1 of this Limitation has been:</p> <ul style="list-style-type: none"> <li>* <i>delete as appropriate.</i></li>   <li>* satisfactorily completed and that all persons, tools and instruments under my control have been withdrawn.</li> <li style="padding-left: 40px;">or</li> <li>* stopped and abandoned for the reasons given below</li> </ul> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <p>Person in Charge: _____ Date: _____</p> <p>Signature: _____ Time: _____</p> <p>Company: _____</p> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <p><b>PART 4 - TO BE COMPLETED BY THE AUTHORISED PERSON</b></p> <p>I hereby declare that the work described in Part 1 of this Limitation has been:</p> <ul style="list-style-type: none"> <li>* <i>delete as appropriate.</i></li>   <li>* satisfactorily completed</li> <li style="padding-left: 40px;">or</li> <li>* stopped and made safe</li> </ul> <p>The original parts 1 and 2 of the sanction have been returned and this Limitation is now cancelled.</p> <p>Authorised Person: _____ Date: _____</p> <p>Signature: _____ Time: _____</p> <p style="text-align: center; color: red; font-weight: bold;">IN CASE OF EMERGENCIES CONTACT SECURITY ON 0116 252 2023 OR MAINTENANCE ON 0116 252 2319</p>		



**Appendix G**

 <b>UNIVERSITY OF LEICESTER</b>	<b>ESTATES and FACILITIES MANAGEMENT DIVISION</b> Mallard House, Brookfield, Leicester LE2 1RQ, UK T +44 (0)116 252 2522 F +44(0)116 223 1333	PW-12
<b>Limitation-of-Access LV</b>		<b>Ref: 11</b>
<p><b>PART 1 - TO BE COMPLETED BY THE PROJECT MANAGER (Person in Control of Works)</b></p> <p>Building: _____ Location: _____</p> <p>I hereby declare that it is safe for the following work to be carried out in the location as stated above.          I have physically identified the equipment, explained the extent of the work and demonstrated the safety arrangements to the Person in Charge of the work.</p> <p>Work to be Carried Out: <input style="width: 300px; height: 25px;" type="text"/></p> <p>This work does not require a HV permit to work (PW01),Sanction to Test (PW10) or Low Voltage Permit-to-Work (PW13)</p> <p>Details of any Risk Assessment/Method Statements: <input style="width: 300px; height: 25px;" type="text"/></p> <hr/> <p>Specific Points Where Danger Signs are Placed: <input style="width: 300px; height: 25px;" type="text"/></p> <hr/> <p>Special Instructions or Safety Measures: <input style="width: 300px; height: 25px;" type="text"/></p> <p>This Limitation-of-Access is valid only for the job described and the timescales on this permit. Area <b>MUST</b> be secured when unoccupied and/or end of each shift.</p> <p>Date: _____ Date: _____ Time From: _____ To: _____</p> <p>Authorised Person: _____ Date: _____</p> <p>Signature: _____ Contact No _____</p> <hr/> <p><b>PART 2 - TO BE COMPLETED BY THE PERSON IN CHARGE</b></p> <p>I acknowledge receipt of this Limitation of Access LV and agree to accept responsibility for the work described in Part 1. I will comply with the procedures detailed in the University Rules and Procedures. No work other than that specified will be carried out by myself or person in charge.          I will retain this Limitation whilst work is in progress and will return it to the Authorised Person when work is completed or suspended.</p> <p>Person in Charge: _____ Date: _____</p> <p>Signature: _____ Time: _____</p> <p>Company: _____</p> <p align="center"><b>IN CASE OF EMERGENCIES CONTACT SECURITY ON 0116 252 2023 OR MAINTENANCE ON 0116 252 2319</b></p>		


 <b>UNIVERSITY OF LEICESTER</b>	<b>ESTATES and FACILITIES MANAGEMENT DIVISION</b> Mallard House, Brookfield, Leicester LE2 1RQ, UK T +44 (0)116 252 2522 F +44(0)116 223 1333	<h1 style="margin: 0;">PW-12</h1>
<b>Limitation-of-Access LV</b>		
<p><b>PART 3 - TO BE COMPLETED BY THE PERSON IN CHARGE</b></p> <p>I hereby declare that the work described in Part 1 of this Limitation has been:</p> <ul style="list-style-type: none"> <li>* <i>delete as appropriate.</i></li>   <li>* satisfactorily completed and that all persons, tools and instruments under my control have been withdrawn.</li> <li style="padding-left: 40px;">or</li> <li>* stopped and abandoned for the reasons given below</li> </ul> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <hr style="border: 0; border-top: 1px solid black; margin-bottom: 5px;"/> <div style="display: flex; justify-content: space-between;"> <div> <p>Person in Charge: _____</p> <p>Signature: _____</p> <p>Company: _____</p> </div> <div> <p>Date: _____</p> <p>Time: _____</p> </div> </div> <p><b>PART 4 - TO BE COMPLETED BY THE AUTHORISED PERSON</b></p> <p>I hereby declare that the work described in Part 1 of this Limitation has been:</p> <ul style="list-style-type: none"> <li>* <i>delete as appropriate.</i></li>   <li>* satisfactorily completed</li> <li style="padding-left: 40px;">or</li> <li>* stopped and made safe</li> </ul> <p>The original parts 1 and 2 of the sanction have been returned and this Limitation is now cancelled.</p> <div style="display: flex; justify-content: space-between;"> <div> <p>Authorised Person: _____</p> <p>Signature: _____</p> </div> <div> <p>Date: _____</p> <p>Time: _____</p> </div> </div> <p style="text-align: center; color: red; font-weight: bold;">IN CASE OF EMERGENCIES CONTACT SECURITY ON 0116 252 2023 OR MAINTENANCE ON 0116 252 2319</p>		

**Appendix G**

 <b>UNIVERSITY OF LEICESTER</b>	<b>ESTATES and FACILITIES MANAGEMENT DIVISION</b> Mallard House, Brookfield, Leicester LE2 1RQ, UK T +44 (0)116 252 2522 F +44(0)116 223 1333	<b>PW14</b>
<b>Fire System Impairment Permit</b>		<b>Ref: 144</b>
<b>SECTION A - Details</b> Impairment Granted To: _____ Company: _____ Description of Works: _____		
Is a Hot Work Permit Required: <input type="checkbox"/> Yes <input type="checkbox"/> No    If yes, Permit No: _____ In case of long term changes to fire strategy, has adequate authorisation been obtained: <input type="checkbox"/> Yes <input type="checkbox"/> No		
<b>Details of Impairment(s) Required</b> <input type="checkbox"/> Alarm/Detection Isolation <input type="checkbox"/> Means of Escape <input type="checkbox"/> Fire Fighting Equipment <input type="checkbox"/> Smoke Vents <input type="checkbox"/> Sprinklers <input type="checkbox"/> Emergency Lighting <input type="checkbox"/> Directional Signage		
Other Hazards: _____ <b>Location of Impairment(s)</b> Building: _____ Room(s)/Area(s): _____ <b>For Alarm/Detection Isolation only, please state:</b> Zone No(s): _____ Device No(s): _____ Extent of Isolation: _____  Mitigation Required: _____		
<b>Date of Impairment(s)</b> Date From: _____ Date To: _____ Time From: _____ Time To: _____ Do the dates and times include any out of hours working (e.g. Weekends)?: <input type="checkbox"/> Yes * <input type="checkbox"/> No <small>* Fire Alarm Systems must not be left isolated outside of normal hours, except where required by the works being undertaken and agreed with the fire officer, systems shall be isolated/re-instated on a daily basis.</small>		
<b>SECTION B</b> Confirmation of Issuer: I confirm that the above Fire System Impairment can be carried out. All required Risk Assessments and Method Statements (RAMS) state suitable mitigation for the detailed impairment. I confirm that the isolation will not compromise fire safety of individuals and/or buildings within the University.		
Permit Issued By: _____ Signature: _____ Position: _____ Date: _____		
<b>For Alarm/Detection Isolation send copy of permit to Reactive Maintenance (RM) or Authorised Contractor (AC)</b> <small>RM/AC Only - I confirm that the above isolation can and has been carried out. Once isolation is carried out return to permit issuer.</small>		
Isolation Carried Out By: _____ Signature: _____ Details RM/AC: _____ Date: _____		
Confirmation of Receiver: I confirm that all mitigation identified in RAMS and stipulated above are in place and works can proceed.		
Permit Received By: _____ Signature: _____ Contractor: _____ Date: _____		
<b>SECTION C - Cancellation</b> Cancellation by Receiver: I certify that all works requiring the identified impairment are now complete and this impairment can be removed. Once signed return to issuer.		
Permit Received By: _____ Signature: _____ Contractor: _____ Date: _____		
Cancellation by issuer: I confirm that the above fire impairment can be cancelled and the location returned to normal operation.		
Permit Issued By: _____ Signature: _____ Position: _____ Date: _____		
<b>For Alarm/Detection Isolation return this permit to RM or AC to re-instate system</b> <small>RM/AC Only - The works have been completed. The above isolation(s) can be removed and return system to normal operation.</small>		
Isolation Carried Out By: _____ Signature: _____ Details RM/AC: _____ Date: _____		
<small>On completion, a copy of this permit must be sent to the Estates and Campus Services Health, Safety and Compliance Officer</small>		



### Appendix H

 <b>UNIVERSITY OF LEICESTER</b>		<b>Estates and Facilities Management Division</b>		<b>PW-15</b>	
<b>LV Sanction to Work</b>					
<b>Part 1) Details and Requirements</b>					
Building / Department					
Location					
Scope of Work					
This Sanction to Work Certificate issued to:				of:	
Valid from:		hrs	to:	hrs	on:
<b>Confirmation of Information Required to Proceed</b>			<b>Yes</b>	<b>No</b>	<b>Details / Comments</b>
<b>1 Information received and approved</b> <i>If No, you MUST obtain signed authority to work in this area from relevant University Officer</i>					
Suitable and Sufficient Construction Phase Plan or Risk Assessment & Method Statement – Complete EHSF-007/009			<input type="checkbox"/>	<input type="checkbox"/>	
Suitable Contractors Permit to Work/Safe Isolation procedure that meets the requirement of EHSF-005			<input type="checkbox"/>	<input type="checkbox"/>	
Department/Building users have been advised of the works and the implications on their business			<input type="checkbox"/>	<input type="checkbox"/>	
Is the work scheduled for 'out of hours'			<input type="checkbox"/>	<input type="checkbox"/>	
<b>2 Competency of Contractors Skilled Person</b>					
Training or Competency Certificates received			<input type="checkbox"/>	<input type="checkbox"/>	
Is there a requirement for a UOL Authorised Person to be in attendance to carry out or witness the isolations			<input type="checkbox"/>	<input type="checkbox"/>	
Is there a requirement for an Accompanying Safety Person (ASP)			<input type="checkbox"/>	<input type="checkbox"/>	
<b>Declaration – Authorised Person or Project Manager/Engineer</b>					
I confirm that all the above requirements are in place.					
PRINT NAME		Signature		Date	Time
<b>Part 2) Contractor Skilled Person undertaking the works</b>					
I acknowledge receipt of this LV Sanction to Work and agree to accept responsibility for the work described in Part 1. I will comply with the procedures detailed in the <b>University Electrical Safety Code – Low Voltage</b> . I will retain this Sanction to Work whilst work is in progress and will return it to the Project Manager/Engineer when work is completed or confirm all required procedures and precautions are in place if the work is suspended.					
PRINT NAME		Signature		Date	Time
<b>Part 3) Declaration – Contractors Skilled Person (Responsible for the isolation and testing)</b>					
I hereby declare that it is safe to work on the equipment detailed above which has been made dead, isolated and earthed in accordance with the requirements of the <b>University Electrical Safety Code – Low Voltage Safety</b>					
PRINT NAME		Signature		Date	Time
<b>Part 4) Clearance to Work Certificate Return – Contractor Skilled Person (Responsible for the isolation and testing)</b>					
I confirm that the above works have been completed/suspended and made safe. This sanction to work <b>MUST</b> returned with the relevant testing records to the Authorised Person or Project Manager/Engineer.					
<b>Declaration</b> – The above works have been completed/suspended* in accordance with this LV Sanction to Work (*delete as appropriate)					
PRINT NAME		Signature		Date	Time
<b>Part 5) Confirmation of Cancellation of LV Sanction to Work Certificate (Authorised Person or Project Manager/Engineer)</b>					
I confirm that the above works have been completed and the area has been returned to working order and the Department/Building users have been notified. All relevant testing records/work certificates have been issued to the University's Appointed Person.					
PRINT NAME		Signature		Date	Time

## Appendix J

### APPOINTMENT OF A SENIOR AUTHORISED/AUTHORISED PERSON ROLES AND DUTIES

1. The Senior Authorised/Authorised Person (HV & LV) should be responsible for:
  - The practical implementation and operation of these Electrical Safety Rules; and
  - The electrical systems and installations for which estates management is in control of;
  - The verification of test results and checking that records have been updated:
2. The Senior Authorised/Authorised Person (HV & LV) are to be appointed in writing by the Authorising Engineer, Rick Seymour Geoff Yeomans of Eta Projects Ltd
3. More than one Authorised Person may be appointed for a site but, at any one time, only one Authorised Person is to be responsible for that electrical system.
4. The duties of Senior Authorised/Authorised Persons may be summarised as follows:-
  - a) control the work on low voltage systems, prepare inspection, maintenance and safety programs and progress the work;
  - b) ensure that any alterations or installation of equipment do not compromise the electrical system;
  - c) ensure that all records concerning low voltage systems are kept up-to-date;
  - d) ensure that any person working on the system is competent to do so;
  - e) ensure that test equipment is maintained in good condition;
  - f) report in writing any dangerous and/or unusual occurrences to the Deputy Director of Estates & Campus Services.
  - g) appoint in writing Skilled Persons and maintain a register of all appointments;
  - h) define the duties of appointed Skilled Persons on the certificate of appointment;
  - i) ensure that the necessary safety posters are displayed in switchrooms at all times;
  - j) issue and cancellation of safety permits when necessary.
5. Inform the Directors of Estates & Campus Services of:
  - a) any defects found in electrical equipment;
  - b) any dangerous occurrence;
  - c) any dangerous practices observed in the course of his duties.
6. The Senior Authorised/Authorised Person also:
  - Arranges for, supervises or undertakes cable detection or location work within the University of Leicester Campus;
  - Appoints Skilled Persons for defined work and maintains a register of Skilled Person appointments including dates of appointment, the date the appointment is due to expire, details of training and training dates.
  - Ensures that all records for the system for which the Authorised Person is appointed are completed and kept up-to-date.



## CERTIFICATE OF APPOINTMENT - SENIOR AUTHORISED/AUTHORISED PERSON (Sample)

**Recommendation for Appointment as an  
“Authorised Person” (HV/LV)****Certificate Number UOL-50001HVLV***This is to certify that***Mr. Chris Souter**

Is recommended for appointment as an “Authorised Person” (HV/LV) for the purposes of the duties identified below;

**HTM06-03**      ‘Electrical Safety Guidance’ for High Voltage Systems.  
**HTM06-02**      ‘Electrical Safety Guidance’ for Low Voltage Systems.

The appointment applies to the High Voltage Electrical Systems and installation at the University of Leicester and is for the duties scheduled.

The certificate of appointment is valid until the expiry date 21<sup>st</sup> April 2020.

Mr. Geoff Ycomans (C. Eng.)  
Authorising Engineer

*Geoff Ycomans*

Signed 22<sup>nd</sup> April 2017



## Appendix K

### APPOINTMENT OF A SKILLED PERSON (electrical) ROLES AND DUTIES

1. Skilled Persons (electrical) should comply with these Local Rules when carrying out work, whether instructions are issued orally or in writing.
2. The Skilled Person (electrical):
  - a. is responsible to undertake work on the types of systems and equipment for which the appointment is sought;
  - b. is familiar with the types of systems and equipment on which work is to be undertaken;
  - c. possesses technical knowledge or sufficient experience to avoid danger that may be presented by the work to be undertaken;
  - d. has read and understood the "Electrical Safety Code for Low Voltage Systems";
  - e. has adequate knowledge of, and within the last three years has received training in, first-aid treatment for electric shock;
2. Skilled Persons (electrical) should use safe methods of work, safe means of access and the personal protective equipment and clothing provided for their safety.
3. Skilled Persons (electrical), when recipients of a PERMIT TO WORK, should:
  - a. be fully conversant with the nature and the extent of the works to be done;
  - b. read the contents and confirm to the person issuing the PERMIT TO WORK that they are fully understood;
  - c. during the course of the work, adhere to and instruct others under their charge to adhere to, any conditions, instructions or limits specified on the PERMIT TO WORK;
  - d. keep keys in safe custody and correctly implement any management procedure to achieve this;
  - e. when in charge of work, provide immediate or personal supervision as required;
  - f. warn all persons as quickly as possible to withdraw from, and not to work on, the equipment concerned until further notice if, during the course of work, a hazard which could result in danger arises or is suspected. The situation should be reported immediately by the Skilled Person to an Authorised Person.
4. Skilled Persons (electrical) should not start or restart work under a PERMIT TO WORK issued to another Skilled Person.
5. Unless it is unavoidable, the Skilled Person (electrical) is not to leave the location of the work or test until the task is completed. If the Skilled Person (electrical) has to temporarily leave the location of the work or test, the task is to be suspended and adequate safety precautions taken to prevent danger. The work or test is not to be resumed until the Skilled Person has returned to the location of the work or test.
6. Skilled Persons (electrical) clearing a PERMIT TO WORK should do so only after all persons working under the PERMIT TO WORK have been withdrawn from, and warned not to work on, the equipment concerned. Where appropriate, they should ensure that all tools, gear and loose material have been removed, guards and access doors replaced, and the workplace left tidy.





#### **APPOINTMENT OF CONTRACTORS SKILLED PERSONS AND CONTROL OF ELECTRICAL OPERATIONS**

1. Where a contractor has been appointed to provide a Skilled Person (electrical) for a system and installation, it will be both UOL and the Contractors responsibility to ensure that they employ Skilled Persons of a standard equivalent to that required by the Local Rules.
2. The Project Manager or Authorised Person is to issue a personal copy of the “Electrical Safety Code for Low Voltage Systems” to the contractor ensuring a signature for receipt.
3. If the Project Manager or Authorised Person believes that a contractor’s Skilled Person is not working in accordance with the requirements of this document (or to an equivalent standard) or is working in a dangerous manner, the Project Manager or Authorised Person has the authority to stop the work.
4. Where a contractor is providing the services of a Skilled Person, the contractor should also be advised of any suspension or cancellation proceedings and be invited to attend any meetings.

#### **Where contractors are to undertake installation work on an existing system or installation for which estates management has control of the danger**

1. Before any installation work is undertaken by contractors on an existing system or installation for which the Estates has control of the danger, it is recommended that the contractor responsible for the installation work liaises directly with the Project Manager or Authorised Person to ensure that the work is undertaken in accordance with this document (or to an equivalent standard) and that contractor’s method statements agree and are included in the safety program.

#### **Issue of a Permit to a contractor**

1. A contractor’s employee may be issued with a **LV Sanction to Work**, providing the Project Manager/Engineer or Authorised Person completes the actions required by this Electrical Safety Code and is satisfied of the capability and competence of the individual.
2. Project Manager/Engineer or Authorised Person who approved the issue of the contract to the contractor’s company clearly also has a duty to ensure the capability and competence of the company and its employees.
3. The Project Manager/Engineer or Authorised Person should be given confirmation that checks have been made to determine the satisfactory technical and safety competence of the company by taking into account such considerations as:
  - a. company safety policy;
  - b. company accident record;
  - c. qualifications and training of employees;
  - d. adequate insurance;
  - e. adequate physical resources (tools, safety equipment etc.);
  - f. quality assurance checks during the progress of work on site.

This will normally be achieved by completion of UOL EHSF forms

**CERTIFICATE OF APPOINTMENT – SKILLED PERSON (electrical)**

<b>Certificate of appointment as a Skilled Person (electrical)</b>	
Certificate No.....	
This is to certify that .....is appointed as Skilled Person (electrical) for the purposes of the duties identified in the "Electrical Safety Code for Low Voltage Systems."	
The appointment applies only to the University of Leicester Campus and to the electrical systems located therein.	
The appointment is valid for three years only until.....	
Project Manager / Authorised Person	
Signed ..... Name .....	
Date .....	
<b>Appointment record</b>	
<b>LV training record</b>	
<b>Course Title/Apprenticeship Details</b>	<b>Date completed</b>
<b>First-aid training record</b>	
<b>First-aid training</b>	<b>Date completed</b>



### Appendix L

#### APPOINTMENT OF THE AUTHORISING ENGINEER ROLES AND DUTIES

1. Eta Projects Ltd have been appointed in writing as the University's Authorising Engineer. Mr Rick Seymour and Mr Geoff Yeomans are carrying out the duties on behalf of ETA Projects Ltd (Appendix G)
2. The Authorising Engineer is to advise the Estates Senior Management on the safety arrangements for the safe operation and maintenance of the electrical low voltage energy systems of the organisation.
3. The Authorising Engineer role is to:
  - Ensure compliance with the relevant Regulations and cascade any new amendments to such regulations down to the Authorised and Skilled Persons.
  - Assess the suitability and appointment of Senior Authorised/Authorised persons to ensure they have the skills and experience to comply with the duties of the role.
  - Audits of Compliance' with requirements for Management of HV/LV Systems in accordance with Regulations and HSE Approved Code of Practice and HTM06-03 & HTM06-02.
  - Authorising Engineer (HV/LV Systems) 'Governance Audit' in accordance with Health and Safety at Work Act 1974, Regulations and HSE Approved Code of Practice and HTM06-03 & HTM06-02.
  - Participation and attendance at the University's Systems Safety Group meetings
  - Development and preparation of the University's Safety Management and Control 'Policy' and 'Plan' including the infrastructure requirements for the establishment of the University's Safety Systems Management Group'. Including periodically review the 'Electrical Safety Code for Low Voltage Systems' and update as appropriate.
  - 'AS REQUIRED' Consultancy and Advice Provision for the contract period
  - Ensure that the LV training and records are kept up-to-date.
  - Ensure that Authorised and Skilled Persons are carrying out their respective duties as detailed in this Electrical Safety code.



**LETTER OF APPOINTMENT – AUTHORISING ENGINEER (HV & LV)**

Tuesday, 21 May 2019

FAO Kim Shelley

Eta Projects Ltd  
5C-D Bear Lane  
London  
SE1 0UH

Dear Kim

**LLV0007166625P Extension of Contract for the Authorising Engineer Services**

The University of Leicester (the University) is pleased to advise that it wishes to take up the extension option provided for within the above mentioned contract; extending the contract to 31<sup>st</sup> July 2020. Your reference FP4867-1

The terms and conditions applicable during the period of extension will be the same as those which presently prevail for the Contract.

By issue of this Letter for the continued **Authorising Engineer Services** the University is notifying you, and by signing this Letter in the spaces provided below, you are accepting that this Contract be extended until 31<sup>st</sup> July 2020

Two original versions of this Letter are provided. Please sign both original versions in the space provided below – this confirms acceptance of the extension of the Contract by the Supplier. One original version should be returned to Mr Christopher Souter in the University of Leicester’s Estates & Campus Services and the other original retained for your records.

Please contact Chris Souter if you have any questions or queries related to this contract extension.

Yours sincerely,

Chris Souter  
Senior Building Services Engineer  
Estates & Campus Services, University of Leicester



@uniofleicester | uniofleicester

#### For more information

Estates and Campus Services,  
University of Leicester,  
University Road, Leicester,  
LE1 7RH, UK

t: +44 (0) 116 252 2504  
e: [estates@le.ac.uk](mailto:estates@le.ac.uk)  
or [www.le.ac.uk/estates](http://www.le.ac.uk/estates)



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