

PWYLLGOR IECHYD A DIOGELWCH HEALTH & SAFETY COMMITTEE

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| DYDDIAD Y CYFARFOD: DATE OF MEETING: | 10 July 2023 |
| TEITL YR ADRODDIAD: TITLE OF REPORT: | (Revised) Electrical Safety Policy Low Voltage 145 |
| CYFARWYDDWR ARWEINIOL: LEAD DIRECTOR: | Andrew Carruthers – Executive Director of Operations |
| SWYDDOG ADRODD: REPORTING OFFICER: | Simon Chiffi – Head of Operations |

Pwrpas yr Adroddiad (dewiswch fel yn addas)

Purpose of the Report (select as appropriate)

Ar Gyfer Penderfyniad/For Decision

ADRODDIAD SCAA

SBAR REPORT

Sefyllfa / Situation

The Health and Safety Committee are asked to approve the revised Electrical Safety Policy Low Voltage 145 (Appendix 1) on behalf of the Hywel Dda University Health Board (HDdUHB) . This report provides the required assurance that Policy 190 – Written Control Documentation (WCD) has been adhered to in the review of this policy and is therefore in line with legislation/regulations, available evidence base and can be implemented within the HDdUHB.

Cefndir / Background

1. Brief summary of the WCD:

This policy clearly sets out instructions and expectations for management to fulfil its responsibilities to effectively manage electrical safety for the Health Board.

2. Scope of the WCD:

This policy applies to all staff at all premises owned or occupied by the Health Board*

(* where the responsibility for operational maintenance resides with the Health Board)

3. Reason(s) for reviewing the Policy:

This policy required updating as it had reached its two yearly review period, this has also provided an opportunity to ensure that the policy follows the new policy template and that any changes to the guidance and any supporting technical specifications are also reflected in the new document.

4. Aim(s) of the Policy:

A review of Policy 145 has been undertaken by the site AP's and Electrical Safety Group (ESG), ensuring the document is in line with Welsh Government strategy and current legal and other requirements.

The owning group of the Policy, the Electrical Safety Group, have officially signed off the revised policy on the 23 June 2023. There have been only minor amendments made to the policy from.

4.1 Minor changes

- Job titles updated
- ESG Subgroup added
- Hierarchy amended due to new job roles
- Gender neutral pronouns implemented
- Capital Projects Managers responsibility defined
- All standards updated to the present relevant standards

Asesiad / Assessment

Assurance

1. Equality Impact Assessment (EqIA): (Appendix 2)

An EqIA was sent to the Equality Diversity and Inclusion team, it was requested that all male and female pronouns be eliminated and replaced with gender neutral pronouns. The current Policy has only received minor changes such as job titles and the previous EqiA form updated with the current names, dates, and job titles.

2. Privacy Impact Assessment: – Not Applicable for this document.

3. Evidence base:

The following reference sources have been used in the compilation of this revised Electrical Safety Policy:

- Current HTM guidance document for electrical Safety.
- Current Health and Safety Guidance for electrical safety.
- Review of policy content within the Electrical Safety Group.

4. Compliance with Legislation/Regulations:

Full adherence with the content of this policy will demonstrate that as far as reasonably practicable the Health Board has complied with the necessary guidance documents such as Health and Safety Guidance (HSG) / Health Technical Memorandums (HTM) for health care purposes.

4.1. Interested Parties:

The Health and Safety Committee to which this document is tabled is the owning committee for its approval. To support this approval, this policy has also been officially circulated to the members of the Electrical Safety Group (ESG) for prior consultation, this group also includes the Authorising Engineer (AE) for electrical safety at Shared Services Partnership – Specialist Estate Services – NWSSP-SES.

5. Consultation:

The document has been submitted for consultation with the HDdUHB Authorised Persons (AP) between 16 March 2023 and 23 June 2023 and no comments were received. The Policy was sent out to the ESG for review on the 19 June 2023 with a ESG meeting to discuss and implement changes on the 23 June 2023.

6. Implementation:

The policy will be made available to all staff within the Health Board via the intranet policy page.

7. Monitoring:

It is essential that continued monitoring is carried out to establish the effectiveness of this policy. The outcome of this monitoring will determine what measures are required in order to improve specific aspects of non-compliance or lack of adherence to the policy. Principally this will be the responsibility of the members of the Electrical Safety Group to determine what actions will be necessary. This will then be further escalated to the Health and Safety Committee for future reporting when requested.

Argymhelliad / Recommendation

The Health and Safety Committee is requested:

- To approve the revised Electrical Safety Policy for Hywel Dda University Health Board for three years.

Amcanion: (rhaid cwblhau)

Objectives: (must be completed)

| | |
|--|--|
| Committee ToR Reference: Cyfeirnod Cylch Gorchwyl y Pwyllgor: | 2.1 Provide assurance around the UHB arrangements for ensuring the health, safety, welfare and security of all employees and of those who may be affected by work-related activities, such as patients, members of the public, volunteers contractors etc. |
| Cyfeirnod Cofrestr Risg Datix a Sgôr Cyfredol: Datix Risk Register Reference and Score: | Risks have been scored and identified on the Datix system |
| Galluogwyr Ansawdd: Enablers of Quality: Quality and Engagement Act (sharepoint.com) | Not Applicable Choose an item. Choose an item. Choose an item. |
| Parthau Ansawdd: Domains of Quality Quality and Engagement Act (sharepoint.com) | 3.1 Safe and Clinically Effective Care Choose an item. Choose an item. Choose an item. |

| | |
|---|--|
| Amcanion Strategol y BIP: UHB Strategic Objectives: | 3. Striving to deliver and develop excellent services Choose an item. Choose an item. Choose an item. |
| Amcanion Cynllunio Planning Objectives | 5a Estates Strategies Choose an item. Choose an item. Choose an item. |
| Amcanion Llesiant BIP: UHB Well-being Objectives: Hyperlink to HDdUHB Well-being Objectives Annual Report 2021-2022 | 10. Not Applicable Choose an item. Choose an item. Choose an item. |

| Gwybodaeth Ychwanegol: Further Information: | |
|--|--|
| Ar sail tystiolaeth: Evidence Base: | The content of this policy is developed utilising expert advice, with reference to legislation and guidance documentation. |
| Rhestr Termiau: Glossary of Terms: | E.S.G= Electrical Safety Group W.H.T.M=Welsh Health Technical Memorandum H.T.M= Health Technical Memorandum AP= Authorised Person |
| Partïon / Pwyllgorau â ymgynhorwyd ymlaen llaw y Pwyllgor Ansawdd lechyd a Diogelwch: Parties / Committees consulted prior to Health and Safety Committee: | Electrical Safety Group Sub Electrical Safety Group Authorised Persons |

| Effaith: (rhaid cwblhau) Impact: (must be completed) | |
|---|--|
| Ariannol / Gwerth am Arian: Financial / Service: | There are direct financial consequences associated with the content of this policy. |
| Ansawdd / Gofal Claf: Quality / Patient Care: | There are direct patient care consequences associated with this policy across the Hywel Dda University Health Board. |
| Gweithlu: Workforce: | There are direct legal responsibilities for staff (workforce) associated with this policy. |
| Risg: Risk: | There are a variety of related risks associated with this policy, which are individually referenced in the Datix system, complete with the necessary mitigation plans and further actions to be implemented. |

| | |
|--|---|
| Cyfreithiol: Legal: | The Hywel Dda University Health Board has specific legal responsibilities as defined by this policy. |
| Enw Da: Reputational: | There are potentially significant reputational and damaging consequences (claims) on the Hywel Dda University Health Board particularly where there is clear evidence of failings as a result of non-compliance with this policy. |
| Gyfrinachedd: Privacy: | Not Applicable |
| Cydraddoldeb: Equality: | The Equality Impact Assessment for this policy has been included for information. |

ELECTRICAL SAFETY POLICY LOW VOLTAGE (LV)

Policy information

Policy number: 145

Classification:

Corporate

Supersedes: not applicable

V3

Version number:

V4

Date of Equality Impact Assessment:

15/06/2023

Approval information

Approved by:

Health and Safety Committee

Date of approval:

22/06/2023

Date made active:

Enter date made active (completion by policy team)

Review date:

23/07/2026

Summary of document:

This policy contains the protocol for the management of Hywel Dda University Health Board's (H DUHB) Low Voltage (LV) electrical equipment and infrastructure.

Scope:

This document applies to all LV Electrical Equipment used by the H DUHB in relation to the services it provides. All H DUHB staff must be made aware of its requirements.

To be read in conjunction with:

Other related estates policies:

- 144 Operational Maintenance Policy
- 020 Asbestos Policy
- 242 Fire Safety Policy
- 393 Confined Space Policy
- 541 Control of Contractors Policy

Owning group:

Electrical Safety Group (ESG)
22/06/2023

Executive Director job title:

Andrew Carruthers

Reviews and updates:

- 1 New policy 23/10/2013
- 2 No amendments made to this version 20/11/2017
- 3 No amendments 6/7/2021
- 4 Minor amendments 22/06/2023

Keywords

Electricity, Low Voltage

Glossary of terms

| | |
|-------|---|
| AE | Authorising Engineers |
| AP | Authorised Persons |
| CP | Competent Persons |
| DP | Designated Persons |
| HASWA | Health and Safety at Work etc. Act |
| HDUHB | Hywel Dda University Health Board |
| HSE | Health and Safety Executive |
| HSG | Health and Safety Guidance |
| HTM | Health Technical Memorandum |
| LV | Low Voltage |
| WHTM | Welsh Health Technical Memorandum |
| IEC | International Electrical Commission |
| RCD | Residual Current Device |
| WEEE | Waste Electrical and Electronic Equipment recycling |

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Introduction

The Hywel Dda University Health Board, hereinafter referred to as the HDUHB recognises its responsibilities to implement policies and subsequent procedures to ensure that there is continual safe management of the Low Voltage (LV) Electrical Infrastructure in accordance with the statutory requirements, current guidelines and best practice.

This policy document outlines the expectation of the HDUHB for the standards to be provided by the organisation. It also sets out how the organisation will meet its statutory duties to its stakeholders, and provide guidance to staff, patients and others.

The LV electrical infrastructure is a critical resource, which is continually required to ensure that the organisation can conduct its business safely and effectively. Any subsequent loss or mismanagement can have significant consequences.

This document aims to describe in a user friendly and concise manner, the policy and correct procedures for ensuring Electrical Safety for Low Voltage (LV) services for the HDUHB.

The table below identifies the range of Voltage to determine its category as described in HTM06-01.

| | |
|---------------|---------------------------------|
| Category | Extra Low Voltage |
| Parameters | < 50 v |
| Voltage Range | 50 V ac or 120V ripple -free dc |

| | |
|---------------|--|
| Category | Low Voltage |
| Parameters | < 1000 v |
| Voltage Range | 230 V line to neutral, line to earth, or line to line (medical IT) 400 V phase to phase |

| | |
|---------------|--|
| Category | High Voltage |
| Parameters > | 1000 v |
| Voltage Range | 11,000 v line to phase 6350 V line to neutral |

Policy statement

It is the policy of the HDUHB to ensure that all electrical equipment complies with the relevant statutory and industry standards and is inspected, tested, maintained and operated as necessary to ensure that risks to persons who may be affected by the equipment are controlled to a level to remove and avoid any potential danger to health. It is also policy that staff and when appropriate, visitors are given information, instruction and training as appropriate to their involvement with electrical equipment.

The two main areas of legislation covered in this Policy are the Health and Safety at Work etc Act 1974 (HASWA) and the Electricity at Work Regulations 1989 and a recent HSE memorandum of guidance on Electricity at Work Regulations 1989.

Scope

This document applies to all LV Electrical Equipment used by the HDUHB in relation to the services it provides. All HDUHB staff must be made aware of its requirements.

Aim

The purpose of this document is to ensure that there are rigorous processes in place to ensure that Electrical Safety for Low Voltage is managed correctly in line with current legal and other requirements.

Objectives

Through the implementation of this document, the HDUHB aims to achieve the following key objectives in relation to the management of Electrical Safety:

- Compliance with all applicable legal and other requirements.
- Prevention of pollution.
- Prevention of injury, risk and ill health.
- Reduction in expenditure.
- Continual improvement and investment

Main body

Operation of electrical equipment

Where the operation of electrical equipment is concerned, it is the responsibility of the individual to ensure that equipment is operated safely and only items of electrical equipment authorised to be connected to the Health Board's infrastructure is permitted. Ward/Departmental Managers and Supervisors must ensure that all portable equipment is made available for testing as required. It is also their responsibility along with the end user to identify equipment that has not been subject to a periodic portable appliance test (where required).

Ward/Departmental Managers and Supervisors have a duty to ensure that all electrical systems are operated safely so as not to give rise to danger to themselves or any other persons. They must also make sure that staff within their control are made fully aware of how to operate any electrical device that they are expected to use in order to avoid any potential dangers.

Finally, it is the responsibility of **all** staff to take care of themselves and those who may be affected by their acts or omissions when operating electrical equipment. Prior to use, all electrical equipment should be visually checked for any damage to mains leads and equipment casing and only used for its intended purpose. Care **must** also be taken where electrical equipment/appliances may need to be moved or manoeuvred for transportation and/or cleaning purposes, in order to avoid potential for electrical shocks to occur. End users must also ensure that the disconnection and connection of devices to the electrical infrastructure is performed safely and under the appropriate conditions i.e. hands are free of moisture at all times.

Procuring electrical equipment

It is the responsibility of the Procurement Manager and local purchasers to ensure that items of equipment purchased can be safely connected to the Health Board's electrical supplies. On occasion this may require consultation to some degree with technical staff operating from within the Estates Department. Clinical/Non Clinical General Managers and Ward and Departmental Managers, shall ensure that the person(s) procuring electrical equipment are sufficiently knowledgeable to safely select equipment that is suitable for the intended purpose and working environment and is fit for connection to the Health Board's electrical supplies. When selecting equipment, consideration in the first instance must be given to the use of extra low voltage or battery powered equipment.

When selecting fixed electrical equipment, the Estates Department must always be consulted.

Maintenance of equipment

Fixed items of electrical equipment must be routinely maintained in accordance with manufacturer's stipulations or via a suitably adopted Risk Assessment Procedure. The Estates Department will make the necessary arrangements for an appropriate level of maintenance to be in place.

Likewise, arrangements for maintenance are required to be in place for all portable electrical appliances. The Estates Department will undertake this responsibility. However, Ward/Department Managers and Supervisors must ensure that all equipment to be tested is made available when either Estates staff or the nominated contractor is undertaking the periodic tests.

Maintenance of the health board's electrical infrastructure

Maintenance of the fixed electrical installation (e.g., ring mains, lighting circuits, distribution systems etc) is the responsibility of the Estates Department. No other member of staff or contractor shall install

and connect equipment or interfere with the fixed electrical network unless the work has been authorised by the Estates Department's Site Operations Manager/s.

Safety inspection and testing operational safety instructions

It is the responsibility of all staff, without exception, to take reasonable steps so as to establish the visual safety and integrity of any items of electrical equipment before the energy supply is connected to that item and put into use. Any defects must be reported to the local Estates Helpdesk **immediately** and the equipment **must not** be used. The equipment must be then labelled accordingly by staff to avoid use.

To request a repair, users should contact the Maintenance Helpdesk on the following numbers:

| | |
|---------------|-----------------------|
| Carmarthen | 01267 235151 ext 2942 |
| Ceredigion | 01970 623131 ext 5770 |
| Llanelli | 01554 756567 ext 3689 |
| Pembrokeshire | 01437 764545 ext 3463 |

Fixed electrical installations

Safety inspections and testing of the fixed electrical installation and fixed electrical equipment must be carried out at least every five years. The precise frequency is the outcome of a risk assessment. The inspections and tests must comply with the requirements of BS7671: 2018 and IET Guidance Note 3 - Electrical Installation Condition Report. The Estates Department will make necessary arrangements of the maintenance of the Health Board's infrastructure as part of its annual maintenance plan.

Clinical Engineering – patient connected medical equipment

Whilst there is a need to perform electrical safety analysis to include applied parts and periodic testing on medical equipment, it is the responsibility of the user to perform visual inspection and where applicable pre-operational tests of all medical equipment before use. Whenever maintenance is carried out by either in-house Clinical Engineering or an external nominated contractor, it will be subject to electrical safety testing in accordance with the latest guidance in Managing Medical Devices issued by the Medicines & Healthcare Products Regulatory Agency and the latest IEC – 60601-1 prior to being taken back into service. It is the user's responsibility to ensure that equipment has a valid "TESTED" label attached. The electrical testing of Clinical Engineering -Medical devices is the responsibility of the Medical Electronics Department or third party contractor who is engaged to maintain the equipment. For further information please contact the respective Clinical Engineering departments on the following numbers:

| | |
|---------------|--------------|
| Carmarthen | 01267 227793 |
| Ceredigion | 01970 628978 |
| Llanelli | 01554 783019 |
| Pembrokeshire | 01437 773130 |

Fixed electrical equipment

The Estates Department will maintain a register of fixed electrical equipment. Individual Clinical and Non Clinical Directorates are responsible for notifying the Estates Department when new or replacement fixed items of equipment are purchased. This will ensure the register is updated accordingly and test regimes adjusted accordingly.

Portable electrical appliances

Inspection and testing of portable electrical equipment is the responsibility of the Estates Department to arrange. A register of Health Board owned equipment is maintained by the Estates Department, however this does not remove the obligation from Clinical and Non Clinical Directorates to notify accordingly when new items of equipment are brought into service or when items are transferred from one point of use to another. The period between inspections/tests is determined by the Estates Department and is based on the outcome of a risk assessment (details of testing frequencies are highlighted in the Estates Maintenance Policy). Normally, this period is yearly but in the case of equipment such as computers, printers and photocopiers this is likely to be greater. Portable electrical equipment that creates the greatest risk to staff, patients or the public may be tested more frequently as deemed necessary. In some cases, such as with portable hand tools this frequency could be as often as monthly. All testing to include user visual inspection will be carried out in accordance with HSE guidance note "Maintaining portable and transportable electrical equipment in the latest edition of the HSG 107".

After an item of electrical equipment has been formally inspected and/or tested, the associated inventory will be updated and a suitable label attached to the equipment in a readily visible location. The label should show, as a minimum, the date when the equipment was inspected/tested and the date when it is due for its next inspection/test.

If an item of equipment is found to be unsafe, it must be withdrawn from use or disconnected from its power source immediately until repaired and re-tested.

IT equipment

IT items of equipment are classified as portable appliances. The arrangement for the inspection and testing of IT items of equipment is normally achieved through the test programme for general Class 1 and 2 items controlled by the Estates Department. The period of time between inspections being varied after a suitable and effective risk assessment has been undertaken in conjunction with the IT department.

New IT equipment with an approved CE rating does not necessarily need testing from new. However, a thorough visual inspection will be required before use. Prior to any IT cabling being installed, the Estates Department must be contacted and risk assessments undertaken to ensure damaged is not caused to the building fabric.

Equipment not owned by the health board

Under no circumstances must items of electrical equipment (including medical equipment) be connected to the Health Board's electrical supplies without first consulting with and seeking clearance from the Estates Department and or Clinical Engineering departments. This prohibition extends not only to equipment brought into Health Board premises by staff but also equipment brought to site by patients and visitors.

In some cases the Estates Department may permit connection following a successful safety test. In other cases the item of equipment may not be permitted for connection on merely limited site supply capacity grounds.

The Health Board will accept no responsibility for any damage caused to personal items of electrical equipment that have been subjected to a flash or other voltage injection tests during the course of establishing overall electrical safety.

Information, instruction and training

All staff who are required to use, install, maintain, inspect or test electrical equipment must be provided with the appropriate information, instruction and training to enable them to carry out their work in a safe manner and to recognise potential electrical hazards. It may also be necessary for staff to prepare a formal risk assessment for certain activities/functions to identify the associated risks/hazards involved.

All staff will also be provided with general electrical safety awareness as part of their ongoing fire safety awareness training, this will be a brief overview of the safety and appropriate use of electrical components as covered in section 7.

Live working

It is the policy of the HDUHB not to permit any form of live working under normal circumstances. Whenever possible, installation and maintenance personnel will be provided with 'dead' systems to work on. It is recognised that this will cause inconvenience particularly in clinical areas but is essential to minimise the likelihood of death or serious injury and any work must follow The Electricity at Work Regulations 1989 and Regulation 14. HTM06-02 Chapter 8.

In some circumstance however, live working is unavoidable and absolutely necessary such as when fault finding and testing is required. In such extenuating circumstances therefore live working will be permitted only following the issue of the LW1 risk assessment form with the following controls in place, and carried out in accordance with HTM 06-02 Chapter 8.

- All forms of testing, fault finding & adjustments
- Removal and replacement of fuse carriers in final circuits
- Removal and replacement of plug in components.
- Basic battery maintenance (cleaning & topping up only)
- Work on battery systems if less than 25V and/or 10Ah

Defective equipment

Anyone discovering a faulty item of electrical equipment must ensure that the equipment is not used again until made safe. This may require the equipment to be locked away, the plug being removed and/or clear labelling to show that it is faulty. The equipment should also be reported to their supervisor, line manager, Health and Safety Advisor or other nominated person and returned to Estates Department or Clinical Engineering Department for further evaluation. The equipment must remain out of service until the necessary repairs and associated tests have been carried out in accordance with the latest guidance. Any condemned item of electrical equipment must be disposed of in line with the Health Board Policy on the disposal of electrical items and in accordance with the WEE regulations.

Disposal of electrical equipment Waste Electrical & Electronic Equipment (WEEE) directive

The WEEE regs were updated in 2018, this EU Directive puts a legal obligation on the Health Board to dispose of all waste electrical items in accordance with strict guidance. Where ever possible the waste has to be reused or recycled. Waste electrical goods now need to be segregated from domestic waste, therefore when disposing of items they must not be thrown out with normal rubbish; items must be clearly labelled "electrical goods for disposal" so that they can be segregated out before disposal.

Medical equipment must only be disposed of by the respective Clinical Engineering Departments to ensure safe disposal. All asset registers must be updated to record the disposal of equipment.

Records

Suitable records must be kept by the Estates and Clinical Engineering Departments:

- Inspections, tests and maintenance of all electrical equipment
- Information, instruction, and training provided to staff

Prohibited equipment and practices

The use of extension leads, multi socket adaptors or trailing sockets is to be discouraged on Health Board premises. Mains extension leads should only be used in extreme circumstances and be fully risk assessed by an AP who understand the requirements , in Clause 16 and the associated guidance in BS EN 60601-1 and bears the CE marks, IEC, BS1363A or BS4343 marks and must be tested for electrical safety and suitability of application by the Estates Department. Extension cables must not be 'daisy chained' together under any circumstances.

Toasters and kettles are prohibited on Health Board premises except in formally established departmental kitchens and kitchens in staff residences. They are not allowed in any other Health Board area under any circumstance.

Prior to using a kettle or toaster Wards and Departments MUST consult the Fire Safety Advisor who will give advice.

Monitoring / audit and safety

Supervisors and line managers shall, as part of their day-to-day duties and during inspections, ensure that staff are using electrical equipment safely and in the correct manner. Staff must only use equipment that has been purchased by the HDUHB and is safe for use. Staff must be reminded not to bring portable appliances into work, such as toasters, kettles or microwaves etc. and use these in non-designated areas. Please refer to fire safety policy.

Implementation

This policy will be implemented through the use of sufficient resources within the operational maintenance department, and also through current and future external maintenance contracts agreed.

Electrical resilience

The HB will ensure that it implements appropriate arrangements to minimise electrical disruptions to services and equipment. This will be achieved by ensuring that regular electrical maintenance is carried to its infrastructure. Furthermore, by having suitable, experienced, competent and trained engineering staff to promptly attend to situations affecting service and resilience, both during normal working hours and via an on call arrangement for out of hours.

Review

This policy will be formally reviewed every two years by the operational management team for any changes in working practices, legislation & guidance. However, there may also be situations where there is a reason to amend the policy content before the next scheduled review date.

Definitions

Electrical Equipment

Anything used, intended to be used or installed for use, to generate, provide, transmit, rectify, convert, conduct, distribute, control, store, measure or use electrical energy.

Fixed Electrical Installation Or Electrical Infrastructure

The whole of the electrical distribution system of a building up to the point of supply to the 'end-user'. This installation will usually be terminated by means of socket outlets for connection of Portable Electrical Equipment or local isolators for the connection of Fixed Electrical Equipment.

Fixed Electrical Equipment

Any electrical equipment of a 'permanent' nature connected to a mains supply by any means other than a conventional plug top (even if the equipment was designed to be portable or transportable).

Portable Electrical Equipment

Any electrical equipment connected to its mains supply by means of a plug top and capable of being transported or moved. Items of electrical equipment weighing in excess of 18kg that are not regularly moved should be treated as fixed electrical equipment. (With exception of Clinical Engineering Medical Equipment)

Class I Electrical Equipment

Equipment having only basic (functional) insulation, and which rely for safety on exposed metalwork having a permanent connection to earth. This connection to earth is normally provided by the equipment's mains cord or flexible cable. In the event of a fault occurring, the earth conductor (wire) will carry the excess (fault) current and cause the mains fuse to 'blow' thus disconnecting the equipment from the mains supply. Equipment of this type is dependent for its safety on the 'fixed' installation providing a suitable earth return path.

Class II Electrical Equipment

Equipment that relies for its safety on additional insulation, this being applied as either reinforced insulation or double insulation. This additional insulation ensures that in the event of a fault, the person using the equipment does not come into contact with hazardous or dangerous voltages. This type of equipment is identified by the markings, Class II, Class 2 and will normally carry the double insulated symbol of two concentric squares. Equipment of this type is not dependent for its safety on the 'fixed' installation.

Class III Electrical Equipment

Equipment where protection against shock is provided by means of supply from SELV (Safety Extra Low Voltage) circuits and in which hazardous voltages are not generated.

Extra Low Voltage

Electrical energy supplied at a voltage of less than 50 volts.

Low Voltage

Electrical energy supplied at a voltage of between 50 and 1,000 volts.

High Voltage

Electrical energy supplied at a voltage in excess of 1,000 volts.

Live Working

The connection / disconnection of electrical equipment while live.

Dead Working

Maintenance, repair, installation or testing/inspection work on electrical systems plant or equipment when the electrical energy supply has been disconnected.

Roles and Responsibilities

Employers Duties

The HDUHB as employers have a general duty under The Health and Safety at Work etc. Act 1974 (HASWA), in particular Section 2, to ensure that, so far as is reasonably practicable, the health, safety and welfare of all their employees and others who may be affected by their undertaking e.g. Patients

Employees Duties

Under Section 7 of the HSWA, employees have a duty to take reasonable care for their own health and safety and of others who may be affected by their acts or omissions at work. Section 7 also requires the employee's co-operation with their employer to enable the employer to comply with statutory duties for health and safety.

Responsibility

Responsibility for the effective implementation of this policy principally resides with a collection of staff as referred to in the [management hierarchy diagram](#) section.

Chief Executive's Responsibilities

The CEO has ultimate management accountability for this policy, including the allocation of resources and the appointment of key personnel. Day to day management and control of the LV infrastructure is delegated to the nominated Authorised Person's (AP's) LV and subsequent Competent Persons (CP's) LV employed by the organisation.

The CEO (or appointed deputy, e.g. designated person/deputy designated persons) will appoint in writing all AP's after recommendation by the Authorising Engineer (AE) (defined below).

Board Level Director (BLD) - Designated Person (DP)

A board level director (BLD) responsible for Estates and Facilities Services will be assigned as the Designated Person (DP) with responsibilities for Low Voltage Electricity as defined under HTM 06-02 safety notes and is therefore responsible for ensuring that an appropriate Estates Structure has been formulated to professionally support and deliver the requirements of this policy. Furthermore, is required to communicate all relevant issues to the Board that may impact on the delivery and effectiveness of this policy. The BLD (or nominated deputy, i.e. DDP) is also expected to appoint in writing an Authorising Engineer (LV) for the HDUHB.

Senior Estates Management – Deputy Designated Persons (DDP)

The Director of Facilities, Estates & Capital Management (DFECM) and The Head of Operations (HoO) are collectively responsible within the estates department for ensuring that adequate trained resources and expertise is made available to formulate an estates structure.

They will also collectively act as Deputy Designated Persons (DDP) and are therefore responsible as directed by the DP for nominating in writing, Authorised Persons (AP's) whose duties will be to implement and manage the Health Board's Policy for Low Voltage Electricity. This will be an official appointment in writing following assessment and recommendation from the externally appointed Authorising Engineer for Low Voltage Electricity Services.

The operational estates structure must ensure that effective and robust safety management arrangements are in place in order to meet the legal requirements.

Head of Operational Services

The Head of Operational Services is responsible for the day to day management of all operational functions including the full integration of Hard and Soft FM services within their regions. They are fully responsible for the staff within their management control, including that of monitoring of competency levels and training requirements in order that staff can undertake their roles appropriately and effectively in accordance with published guidance.

Authorising Engineer (AE (LV))

The AE is an appropriately qualified engineer with a minimum of incorporated engineer status (I.Eng), equipped with at least 5 years relevant professional experience, together with attendance at an accredited Authorising Engineer course and Authorised Person LV course within the last 3 years and must meet the criteria set out in HTM 06-02 appendix 7.

This person will have specialist knowledge of LV infrastructure specifically for the healthcare sector, in particular the LV system for which an Authorised Person (LV) will assume responsibility on appointment.

They act, and is employed, independently of organisations submitting potential Authorised Persons (LV) for assessment.

Duties and Responsibilities:

- To assess the suitability of prospective Authorised Persons, for appointment within the HDUHB.
- Reviewing the management systems of the LV infrastructure, including the Permit to Work System annually.
- To hold summary details of equipment and infrastructure site records for each hospital within the organisation.
- Monitoring the implementation of the Operational Policy and Procedures.
- Recommending after satisfactory evaluation to the Chief Executive or his/her nominated representative, those persons deemed suitable to be Authorised Persons (LV).
- Undertake periodic audits in accordance with HTM 06-02.
- Investigate / report any incidents.
- Advise and distribute field safety notices in connection with LV.

Authorised Person AP (LV)

The HDUHB must be fully supported by trained and authorised staff, based at each of the acute hospital sites. This will ensure that operationally resources are available to cover core times, as well as during on call arrangements. The HDUHB must therefore ensure that there is a minimum of two nominated AP's located at each of the acute sites. Inevitably, there may be times when one of the designated AP's is off site and therefore to cover times of absence, an AP from a neighbouring acute site may also be requested to assist with the authorising of LV permits and/or technical advice. The AP's will be the designated responsible officers for the day to day management of the LV System and implementation of this policy for the sites they control and must meet the criteria set out in HTM 06-02 appendix 7 and HTM 06-02 chapter 4.

The AP Credentials

The AP (LV) is an appropriately qualified engineer to a minimum of HNC level or equivalent in an engineering discipline with at least 3 years relevant professional experience. They will also have

successfully completed an accredited AP (LV) training course. In addition, the AP's will need to be formally assessed as suitable by the AE and appointed in writing by the CEO (or appointed deputy).

A minimum of two AP's (LV) are required at each acute site with the aim to have three to better support business continuity. The named LV AP's are identified in section 30.

Each AP (LV) must have sufficient site knowledge and experience together with adequate resources and work equipment along with (infrastructure/schematic drawings, equipment registers, key safe arrangements, permit to work system (LV), etc) to manage the systems safely.

The AP (LV) is the primary lead in all matters relating to the LV services. Specifically the duties and responsibilities will include:

- The safe and efficient day-to-day management of the LV system, in accordance with the statutory requirements, current guidelines and best practice.
- To be responsible for the Permit to Work System, including the issue of Permits to Competent Persons/Contractors (LV) for all servicing, repair, alteration and extension work carried out on the existing LV system.
- To establish and maintain a Register of Competent Persons (LV) and Specialist Contractors after assessing their suitability for inclusion and review this register annually.
- To be responsible for the supervision of work carried out by Competent Persons (LV), for the standard of that work and the documentation provided.
- To ensure that the Hospital's LV maintenance specification and schedule of equipment (including all equipment/plant, distribution boards and any other related systems) are kept up to date.
- To ensure that appropriate safety warning signs (where required) are prominently displayed in accordance with current requirements, guidelines, best practice and to ensure these include emergency contact numbers appropriate to the area and LV installation.
- To ensure that all Distribution Boards and subsequent components are correctly labelled and that any changes to departmental names, functions or details are recorded as soon as changes have taken place both on the DB labels/components and the corresponding as fitted drawings etc.
- To liaise closely with other key stakeholders within the organisation, who need to be informed of any interruption or testing of the LV system.
- To provide technical advice to those responsible for the purchase of any LV electrical equipment that will be connected to the LV system, in order to avoid problems with capacity etc.
- In accordance with the HDUHB's policy on provision of services, to provide advice on the provision and/or replacement of LV plant and associated systems (The Estates Department holds overall responsibility for the provision and maintenance of the LV services infrastructure within the HDUHB).
- To organise such training of Estates staff (and other staff if requested) and/or transfer of LV information as required.
- To prepare or commission compliance surveys of the LV system and associated risk assessments. To propose remedial actions arising from such surveys and risk assessments. To monitor compliance, associated risks, repeat surveys and assessments as necessary. A summary of outstanding non-compliances are to be tabled at the LV operational group meetings.
- To appoint after due examination, hospital based Competent Persons (LV)
- To follow incident and accident reporting procedures as defined by any relevant NHS safety alerts and/or statutory guidance (RIDDOR, Device Alerts, Hazard Notices etc).

Work carried out under a permit should be undertaken in accordance with HTM06-02 Chapter 7 Safety precautions and procedures for work on low voltage systems made dead.

Ensure that any subsequent changes in guidance and legislation are communicated.

Closely monitor the work of the CP's and undertake proficiency audits annually, recording their findings.

Head of Engineering

Has as a strategic involvement within the Operational Management Structure to support and assist the Head of Engineering and relevant Site Operational Managers on legislation, governance and policy arrangements in order to achieve compliance as far as reasonably applicable.

This will also include the management of risk registers and the bidding of statutory capital funding to address actions. Furthermore they required to make the necessary changes to these policies and working practices following any revisions in legislation and advise/liaise with the operational management team of such changes. Responsible for chairing and co-ordinating the actions of the LV Electrical Safety Group, which is a quarterly meeting consisting of all AP's and Operational Managers.

Competent Person (CP (LV))

All Competent Persons (LV) must be engineering craftsmen, directly employed by the HDUHB or a contractor appointed in writing by the HDUHB's AP.

Competent Persons (CP) carrying out installation, maintenance, inspection, testing or any other work associated with electrical equipment must be sufficiently competent. In this sense competence means that they should have sufficient knowledge and/or experience which may include:

- Adequate knowledge of electricity and the applicable regulations (IET Wiring Regulations)
- Adequate experience of electrical work
- Adequate understanding and practical experience of the equipment to be worked on
- Understanding of the hazards and dangers that may arise during the work and the precautions that need to be taken
- Ability to recognise at all times whether it is safe for work to continue

All CP's (LV) shall meet the Competent Persons qualifications as listed within HTM06-02 Appendix 7.

All CP's (LV) duties and responsibilities are listed within HTM06-02 Chapter 4

With regard to work carried out under a permit to work, the CP (LV) will:

- Accept instruction from the AP and acknowledge responsibility for the work.
- Acknowledge familiarity with site fire and safety requirements.
- Isolate systems only under direct supervision of the AP.
- Confirm that only the intended section(s) of electrical supplies are isolated.
- Carry out only such work as detailed on the permit including final connections.
- Confirm completion of work and notification to AP.
- Carrying out appropriate engineering validation and verification tests as required by and under direct supervision of the AP (LV).

Appointed Contractors (LV)

All externally employed contractors who are appointed to carry out work on the LV infrastructure must refer to HTM06-02 Chapter 4 Contractors Competent Person and the HDUHB must provide proof of acquired competency (for all their staff) to the AP (LV).

They must have satisfactorily completed an appropriate training course, to the same level of competency as the hospital CP's and be sufficiently experienced and familiar with the LV infrastructure at the site that they are to carry out the work.

They must also be members of the approved contracts scheme NIC EIC (or similar such as *ECA/ELECSA*) etc to ensure that all work carried out is fully in accordance with BS7671.

With regard to work carried out under a permit to work as described in HTM 06-02 Safety Guidance section 7.34, the contractor must:

- Accept instruction from the AP and acknowledge responsibility for the work.
- Acknowledge familiarity with site fire and safety requirements.
- Under a permit to work the AP undertakes all isolations in accordance with their completed safety documentation and safety programme. (This will require prior notice in advance of the isolation to allow for sufficient resources to be available)

The AP is to determine the satisfactory technical and safety competence of the company by taking into account the following considerations.

- Company safety policy.
- Company accident record.
- Qualifications and training of employees.
- Adequate physical resources and equipment.
- Quality assurance checks during the progress of the work on site.

Capital Projects

Capital project managers must consult with the Health Board's Appointed Authorising Engineer, Authorised Person, Site Operational Manager and ESG on all schemes where adjustments are made to the electrical system.

All new and altered electrical systems shall comply with the requirements of HASWA, BS7671:2018, WHTM 06-01 and those mentioned in the reference list in this policy. In this respect, at the design stage the consulting engineer shall liaise with the Health Board's appointed Authorising Engineer to provide advice in respect of compliance with the necessary H&S requirements as they relate to electrical systems.

The Health Board's appointed Authorising Engineer will provide input advice to the design process in respect to the construction phase and for the subsequent operational service thereafter. The Health Board will require a risk assessment and certificate of compliance for the electrical systems upon completion, to be provided from the Consultants/Designers.

Additionally, there are specific issues around the quality control of all projects works on site, and the site installation and commissioning procedures. These will need to be addressed as part of the commission:

- The specification, and the consulting engineer's competence and interpretation of the requirements.
- The contractor's competence and their interpretation of the requirements.

- The installer's competence and interpretation with respect to site conditions, the existing and new installation and commissioning requirements.

Operating and maintenance manuals shall be provided in accordance with the Estates Capital Investment System (ECIS) and comply with the requirements of BG 79/2020 .

Electrical Safety Group (ESG)

The HB has formulated an Electrical Safety Group (ESG) which is a sub group of the Health & Safety Committee the purpose of the group is to advise and support on all aspects relating to Electrical Safety. Membership will include: Head of Operational Engineering (Chair), Head of Estates and Risk (Vice Chair), Head of Fire Safety, Site Operations Managers AP LV–X 4 (or nominated representatives AP LV), Health and Safety Manager, Designated Person (Only when required), Compliance Manager, NWSSP-SES Authorising Engineer Low Voltage (AE LV), NWSSP-SES Authorising Engineer High Voltage (AE HV), Major Capital Development Manager (or nominated representatives), Discretionary Capital Projects Manager (or nominated representatives), WHTM Compliance Officer and any other co-opted members as deemed appropriate.

The ESG shall meet quarterly and the minutes/actions of the meetings shall be made available to the group members for information and also to the Health & Safety Committee (upon request). The purpose of the meetings can be found in the T.O.R.

The Chair of the group will be Head of Maintenance & Engineering Estates or nominated deputy. Therefore will periodically provide a status update at the Health Board's quarterly Health and Safety and Emergency Planning Sub Committee, which is chaired by the DP/DH – Deputy Chief Executive.

Sub Electrical Safety Group

The HB has formulated a Sub Electrical Safety Group (Sub ESG), which is a sub group of the Electrical Safety Group, the purpose of the group is to resolve, advice and support on all actions raised by the ESG and update the tracker that has been developed by the Compliance team.

Membership will include: the Authorised Person LV, Compliance Manager, , WHTM Compliance officer.

The Sub ESG shall meet twice before the main ESG, the purpose of the meetings shall be to address key actions raised in the main ESG.

The Group's membership shall consist of:

- Authorised person
- Compliance Manager
- WHTM Compliance Officer
- any other co-opted members as deemed appropriate

References

BG 79/2020 Handover Information and O&M Manuals Set (HOM1)

BS 1363-2:2016 13 A plugs, socket-outlets, adaptors and connection units specification for 13 A switched and unswitched socket-outlets : includes A1 Feb 18

BS 1363-1:2016 13 A plugs, socket-outlets, adaptors and connection units specification for rewirable and non-rewirable 13 A fused plugs : includes A1 Feb 18

SI 2016/1101 Electrical equipment, safety Regulations : including correction Jan 17 2016

SI 1994/3260 Electrical equipment, safety Regulations 1994

HTM 06-03 Electrical services : authorised person's logbook (HTM)

HTM 06-03 Electrical services : electrical safety guidance for high voltage systems (HTM)

HTM 06-02 Electrical services : electrical safety guidance for low voltage systems (HTM)

HTM 06-02 Electrical services : electrical safety handbook (HTM)

HTM 06-01 Electrical services supply and distribution (HTM)

SI 1989/635 Electricity at work Regulations 1989

HTM 00 Policies and principles of healthcare engineering (HTM)

BS 7671:2018 Requirements for electrical installations : IET wiring regulations : includes corr Feb 20

SI 2018/1214 Waste electrical and electronic equipment Amendment, no 2, regulations : explanatory memorandum 2018

SI 2018/1214 Waste electrical and electronic equipment Amendment, no 2, regulations 2018

SI 2015/1968 Waste electrical and electronic equipment Amendment, regulations 2015

SI 2018/102 Waste electrical and electronic equipment Amendment, regulations 2018

SI 2007/1085 Waste electrical and electronic equipment, waste management licensing, England and Wales Amendment regulations 2007

Appendix: 1 - Typical user inspection check list for fixed and portable electrical equipment

Check the test date has not expired.

Then check for signs of:

1. Damage to the local isolator or service switch;
2. Damage to plastic or metal conduits, armoured cables
3. The flexible conduit or cable not being firmly gripped where it enters the local isolator or service switch and the equipment. Look to see if the coloured insulation of the internal wires is visible.
4. Damage to the flexible conduit or cable outer sheath, for example, cuts, crushing, slight abrasion – scuffing is acceptable.
5. Damage to the outer case of the equipment, for example cracks in the outer cover, loose switches, loose parts and screws.
6. Overheating, for example burn marks, staining and pungent acrid smells.

In Addition Check That:

The on/off switch or stop/start buttons function correctly.

Any warning devices, for example, lamps and indicators are operational.

Mechanical levers operate correctly and without excessive force being required.

The equipment works correctly and efficiently.

The following additional inspection should be made if the equipment is protected by an RCD (Residual Current Device) or connected by a plug conforming to BS4343.

Checking for RCDs that:

The RCD can be manually switched on and off.

The RCD trips when the TEST button is pressed.

Checking for plugs conforming to BS4343 that:

Any interlock provided ensures that the plug cannot be removed whilst the outlet is switched on.

The wires, including the earth wire when fitted, are connected to the correct terminals.

No bare wire is visible except at the terminals.

The terminal screws are tight.

There is no sign of internal damage, for example cracks, overheating, excess dirt, oil or dust.

The sealing gland, if fitted, is intact and the gland nut tightened.

Typical user inspection check list for portable electrical equipment;

First check that the test date has not expired.

Then check for signs of:

1. Damage to the mains plug, for example burnt, cracked or loose casing or bent pins.
2. Non-standard joints including taped joints in the flexible cable.
3. The outer covering (sheath) of the flexible cable not being firmly gripped where it enters the mains plug or the equipment. Ensure that the coloured insulation of the internal wires is not visible.
4. Damage to the flexible cable outer sheath, for example cuts, abrasions – slight scuffing is acceptable.

5. Damage to the outer case of the equipment, for example cracks in the outer cover, loose switches, loose parts and screws.
6. Overheating, for example burn marks, staining and pungent acrid smells.
7. Check for signs of possible Water Ingress.

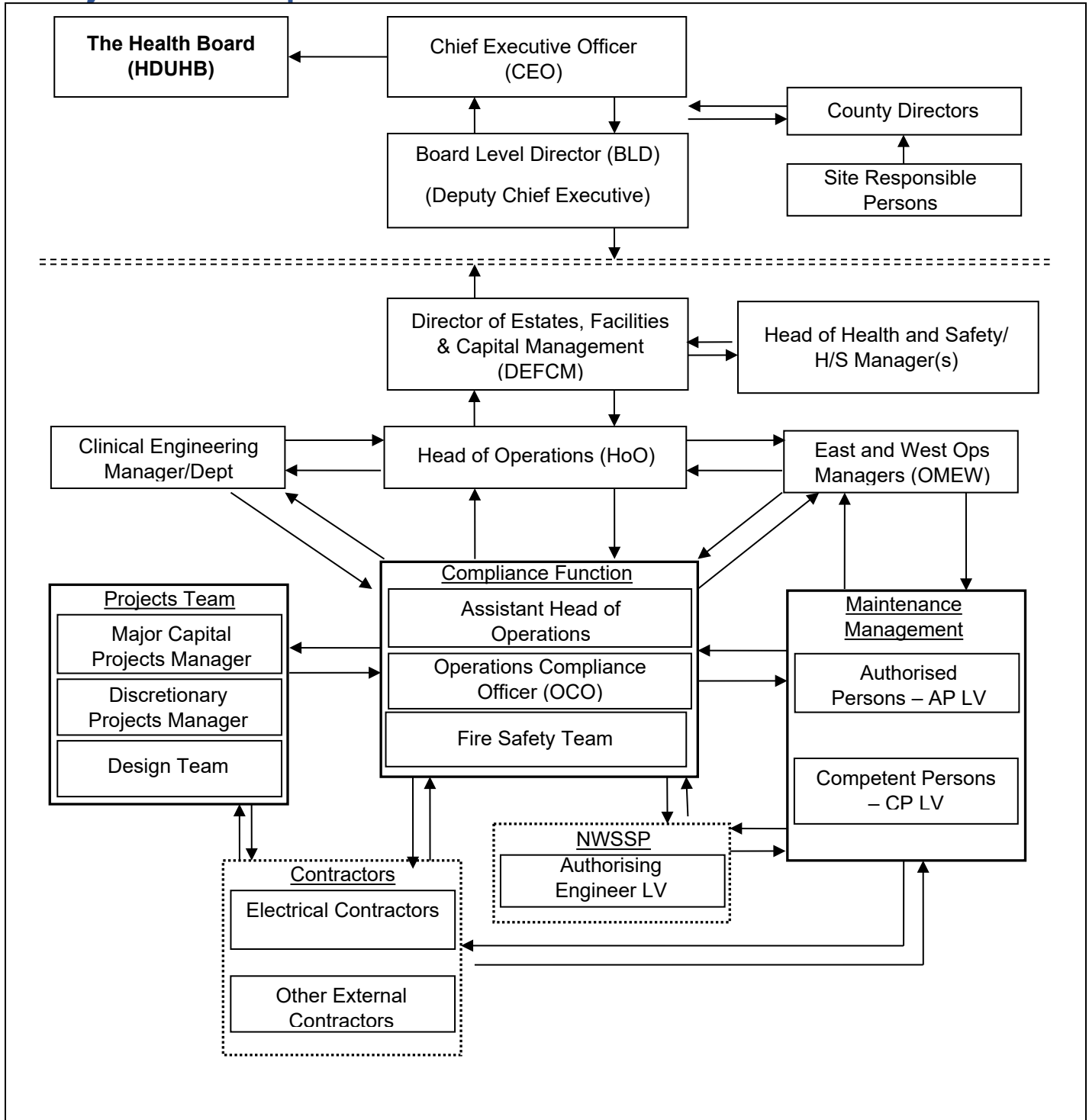
In addition check that:

1. The on/off switch functions correctly.
2. Any warning devices, for example lamps, audible indicators are operational.
3. Mechanical levers/interlocks operate correctly and without excessive force being required.
4. The equipment works correctly and efficiently.

Appendix: 2 - List of current ap's for LV for HdUHB

| | |
|----------------------------|-------------------------------|
| Glangwili General Hospital | Paul Hill Gari Owen |
| Bronglais General Hospital | Elfyn Jones |
| Withybush General Hospital | Duncan Evans Claus Schlike |
| Prince Philip Hospital | Stewart Evans |

Appendix: 3 - Facilities directorate - management hierarchy diagram major outbreak plan introduction.



SUMMARY EQUALITY IMPACT ASSESSMENT – 145 - Electrical Safety Policy Low Voltage (LV)

| | |
|----------------------|-----------------------------------|
| Organisation: | Hywel Dda University Health Board |
|----------------------|-----------------------------------|

| | | |
|-------------------------------|--------------------|-------------------------------|
| Proposal Sponsored by: | Name: | Paul Evans |
| | Title: | Operations Compliance Manager |
| | Department: | Estates Department |

| | |
|----------------------|---|
| Policy Title: | Electrical Safety Policy Low Voltage (LV) |
|----------------------|---|

| | |
|---|---|
| Brief Aims and Objectives of Policy: | <p>The purpose of this document is to ensure that there are rigorous processes in place to ensure that Electrical Safety for Low Voltage is managed correctly in line with current legal and other requirements.</p> <p>Objectives</p> <p>Through the implementation of this document, the HDUHB aims to achieve the following key objectives in relation to the management of Electrical Safety:</p> <ul style="list-style-type: none">• Compliance with all applicable legal and other requirements.• Prevention of pollution.• Prevention of injury, risk and ill health.• Reduction in expenditure.• Continual improvement and investment |
|---|---|

| | | |
|--|---|-----------|
| Was the decision reached to proceed to full Equality Impact Assessment? | | No |
| | If no, please give reasons - The policy has no direct relevance to duties under the Equality Act 2010, having a neutral impact on protected groups. | |
| If no, are there any issues to be addressed? | Yes | |
| | Copies of the policy in alternative formats may be made available on request using the Health Board approved translation services. | |

| | | |
|------------------------------|------------|---|
| Is the Policy Lawful? | Yes | The policy complies with Health and Safety legislation, |
|------------------------------|------------|---|

| | | |
|------------------------------------|------------|-----------------------------|
| Will the Policy be adopted? | Yes | The policy will be adopted. |
| | | |

| | | |
|--|--|--|
| Are monitoring arrangements in place? | Yes | |
| | Any complaints received in relation to equality, diversity and human rights received following implementation of the policy will be addressed on an individual basis and appropriate action taken. | |

| | | |
|---------------------------------|--------------------|-------------------------------|
| Who is the Lead Officer? | Name: | Paul Evans |
| | Title: | Operations Compliance Manager |
| | Department: | Estates Department |
| Review Date of Policy: | Every 3 years | |

| Signature of all parties: | Name | Title | Signature |
|----------------------------------|-------------|--------------------------------------|-------------------------|
| | Paul Evans | Assistant Head of Operations | 22/6/2021 |
| | Alun Rees | Compliance Officer | Reviewed 15th June 2023 |
| | Alan Winter | Senior Diversity & inclusion Officer | 15/6/2023 |
| | | | |

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|--|--|--|--|
| | | | |
| <p>Please Note: An Action Plan should be attached to this Outcome Report prior to signature</p> | | | |