



**HEALTH & SAFETY ASSURANCE COMMITTEE
PWYLLGOR ANSAWDD IECHYD A DIOGELWCH**

DYDDIAD Y CYFARFOD: DATE OF MEETING:	06 July 2021
TEITL YR ADRODDIAD: TITLE OF REPORT:	Electrical Safety Policy - 145
CYFARWYDDWR ARWEINIOL: LEAD DIRECTOR:	Andrew Carruthers, Director of Operations
SWYDDOG ADRODD: REPORTING OFFICER:	Paul Evans, Assistant 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 & Safety Assurance Committee is asked to approve the Estates Electrical Safety Policy 145 attached at Appendix 1. This report provides the required assurance that Policy 190 – Written Control Documentation has been adhered to in the review of the above mentioned written control document and that therefore the document is in line with legislation/regulations, available evidence base and can be implemented within the Hywel Dda University Health Board (HDdUHB).

Cefndir / Background

This policy outlines how the organisation will manage and maintain Electrical Safety for low voltage in line with current legislation. It is the policy of the Health Board to ensure that all electrical equipment complies with the relevant statutory and industry standards and is inspected, tested, maintained and operated safely to minimise risk.

Asesiad / Assessment

A full review of Policy 145 has been undertaken, 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 (ESG), has signed off the revised policy on 10/06/2021. **There have been only three minor amendments made to the policy from an equalities perspective to change the word ‘he/she’ to ‘they’.**

An equality impact assessment has been undertaken, attached at Appendix 2

Argymhelliad / Recommendation

For the Health & Safety Assurance Committee to approve Policy 145 for a further two year period.

Amcanion: (rhaid cwblhau) Objectives: (must be completed)	
Committee ToR Reference: Cyfeirnod Cylch Gorchwyl y Pwyllgor:	Not Applicable
Cyfeirnod Cofrestr Risg Datix a Sgôr Cyfredol: Datix Risk Register Reference and Score:	This discipline covers a variety of operational risks that have been scored and identified on the Datix system
Safon(au) Gofal ac Iechyd: Health and Care Standard(s):	2.1 Managing Risk and Promoting Health and Safety
Nodau Gwella Ansawdd: Quality Improvement Goal(s):	Protect Patients From Avoidable Harm From care
Amcanion Strategol y BIP: UHB Strategic Objectives:	All Strategic Objectives are applicable
Amcanion Llesiant BIP: UHB Well-being Objectives:	10. Not Applicable

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:	ESG – Electrical Safety Group
Partïon / Pwyllgorau â ymgynhorwyd ymlaen llaw y Pwyllgor Ansawdd Iechyd a Diogelwch: Parties / Committees consulted prior to Health and Safety Assurance Committee:	Electrical Safety Group and NHS Wales Specialist Estates Services NWSSP-SES

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; this is in the form of electrical backlog and the necessary ongoing statutory funding to continue with electrical testing.
Ansawdd / Gofal Claf: Quality / Patient Care:	There are direct patient care consequences associated with electrical safety across the HB.
Gweithlu: Workforce:	There are direct legal responsibilities for staff (workforce) associated with this policy. Particularly staff who have been appointed by the HB to ensure effective maintenance arrangements are in place. Furthermore, all staff have a duty of care to ensure equipment is safe for its intended use.

Risg: Risk:	There are a variety of related risks associated with LV Electricity, which are individually referenced in the Datix system, complete with the necessary mitigation plans and further actions to be implemented.
Cyfreithiol: Legal:	The HB has implicit legal responsibilities as defined by the Electricity at Work Regulations 1989. Notwithstanding other legal documentation and best practice guidance for Electrical Safety.
Enw Da: Reputational:	There are potentially significant reputational and damaging consequences on the HB particularly where there is clear evidence of failings as a result of non-compliance with Electrical Safety.
Gyfrinachedd: Privacy:	Not Applicable
Cydraddoldeb: Equality:	The equality impact assessment for this policy has been included for information.



GIG
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Bwrdd Iechyd Prifysgol
Hywel Dda
University Health Board

ELECTRICAL SAFETY POLICY LV (LOW VOLTAGE)

FOR H&SAC APPROVAL

Policy Number:	145	Supersedes:		Classification	Corporate
Version No	Date of EqIA:	Approved by:	Date of Approval:	Date made Active:	Review Date:
V2					2 years

Brief 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.
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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.
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To be read in conjunction with:	Other related estates policies: 144 Operational Maintenance Policy 145 HV Electrical Policy 020 Asbestos Policy 242 Fire Safety Policy 393 Confined Space Policy 541 Control of Contractors Policy
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Owning Committee/ Group	Health and Safety Assurance Committee
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Executive Director:	Andrew Carruthers	Job Title	Director of Operations
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Reviews and updates		
Version no:	Summary of Amendments:	Date Approved:
2	No amendments made to this version	

Glossary of terms

Term	Definition
LV	Low Voltage
HDUHB	Hywel Dda University Health Board
HASWA	Health and Safety At Work etc. Act
HSE	Health and Safety Executive
DP	Designated Persons
AE	Authorising Engineers
AP	Authorised Persons
CP	Competent Persons
WHTM	Welsh Health Technical Memorandum

Keywords	Electricity, Low Voltage
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HYWEL DDA UNIVERSITY HEALTH BOARD

1 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	Parameters	Voltage Range
Extra Low Voltage	< 50 v	50 V ac or 120V ripple -free dc
Low Voltage	< 1000 v	230 V line to neutral, line to earth, or line to line (medical IT) 400 V phase to phase
High Voltage	> 1000 v	11,000 v line to phase 6350 V line to neutral

2 ELECTRICAL SAFETY (LV) 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.

3 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.

4 AIMS

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.

5 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.

6 Responsibilities

6.1 *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

6.2 *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.

6.3 *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.

6.4 *Chief Executive's Responsibilities (CEO)*

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).

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6.5 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.

6.6 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.

6.7 Operations Manager (s) East and West Hard & Soft FM (OM - E/W)

The OM – E/W are 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.

6.8 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.

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.

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- 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.

6.9 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.

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. 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.

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- 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).

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

- Liaise with all other departments in sufficient time prior to work commencement, to establish temporary supply requirements and contingencies.
- Assess the Level of Hazard and prepare a suitable permit.
- Obtain permission for interruption to supplies/work on system.
- Explain the detail of work to the competent person.
- Affix "Do Not Use" or other prohibition notices/devices to affected or defective equipment.
- Supervise (where necessary) the isolation of the system or part that work is to be carried out on.
- Supervise (where necessary) the appropriate engineering validation and verification tests.
- Supervise (where necessary) the reinstating of services.
- Remove "Do Not Use" or prohibition notices.
- Obtain acceptance for system re-instatement/completion of work.
- 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.

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6.9.1 Assistant Head of Operations

Has as a strategic involvement within the Operational Management Structure to support and assist the HoO 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.

6.9.2 Competent Person (CP (LV))

All Competent Persons (LV) must be engineering craftsmen, directly employed by the HDUHB.

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 (IEE Wiring Regulations and to British Standard - BS 7671)
- 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) directly employed by the HDUHB shall have satisfactory completed an appropriate training course (to satisfy HTM 06-02, individuals should have attained City and Guilds 2382 level 2 and 2394, if the CP is to be responsible for testing the circuit they should have attained City and Guilds Inspection & Testing and be fully familiar with the 17th edition wiring regulations (and subsequent revisions) and be sufficiently experienced and familiar with the LV infrastructure and systems before being appointed by the AP (LV) responsible for that particular site. Any installation work carried out by the CP's must be undertaken in accordance with BS 7671. Training and appointment should be refreshed every 3 years.

Duties and Responsibilities of the CP (LV):

- To report to the Authorised Person (LV) prior to commencement of work on the LV infrastructure each day.
- To carry out work on the LV infrastructure in accordance with the relevant installation and maintenance specifications.
- To carry out repair, alteration or extension work, as directed by the Authorised Person (LV) in accordance with the Permit to Work System and HTM 06-02.
- To perform engineering tests appropriate to all work carried out and prove to the Authorised Person (LV) all test results.
- To carry out all work in accordance with the Health and Safety Policy.

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- Ensure that switch rooms are kept clean and tidy, reporting any inappropriately stored items to the AP. Ensure that all removed items and other rubbish are promptly taken from the stores and properly disposed of.

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).

6.9.3 Appointed Contractors (LV)

All externally employed contractors who are appointed to carry out work on the LV infrastructure for 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:

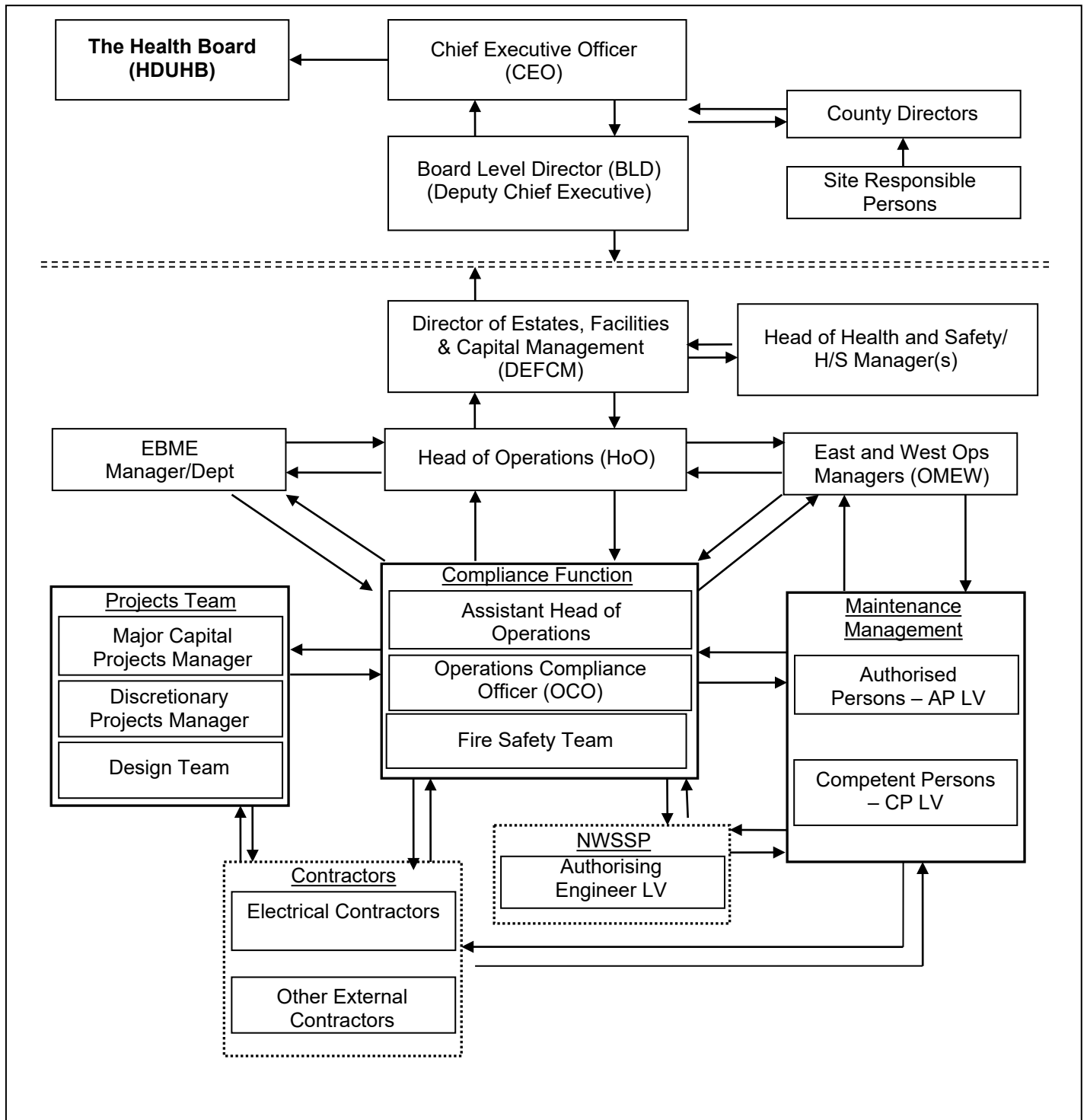
- Accept instruction from the AP and acknowledge responsibility for the work.
- Acknowledge familiarity with site fire and safety requirements.
- Isolate systems only under direct supervision of the AP (this will require prior notice in advance of the isolation to allow for sufficient resources to be 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.

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6.9.4 FACILITIES DIRECTORATE - MANAGEMENT HEIRARCHY DIAGRAM



7 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.

8 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.

9 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.

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10 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.

11 SAFETY INSPECTION AND TESTING

11.1 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

12 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: 2008 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.

13 EBME – 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 EBME or an external nominated contractor, it will be subject to electrical safety testing in accordance with MHRA DB2006(05) Chapter 4.4 and IEC – 60601-01 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 EBME-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 EBME departments on the following numbers:

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

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14 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.

15 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 HSG 107 (2nd edition)" this useful guide is available at www.hse.gov/pubns/books/hsg107.htm

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.

16 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.

17 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 EBME 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.

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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.

18 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.

19 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.

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 certificate of authorisation form with the following controls in place, and carried out in accordance with HTM 06-02 Chapter 8.

- The Team must continue the work until completed and must not be diverted to other work.
- A written safe system of work is agreed by all relevant parties, is in place agreed by the AP/ Authorised Engineer.
- All personal protective safety equipment necessary is provided.
- Live working tools only are used.
- A team comprising of a minimum of two persons is deployed to the task.
- A "live functional test" or "certificate of authorisation" for live working issued by the Authorised Person (AP).
- That the appropriate infrastructure is available, i.e. RCD protection, emergency stops etc.

20 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 EBME 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 MDA/2004/054 (Wales). Any condemned item of electrical equipment

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must be disposed of in line with the Health Board Policy on the disposal of electrical items and in accordance with the WEE regulations.

21 DISPOSAL OF ELECTRICAL EQUIPMENT (Waste Electrical & Electronic Equipment WEEE Directive)

The WEEE Regs were introduced in Jan 2007, 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 EBME Departments to ensure safe disposal. All asset registers must be updated to record the disposal of equipment.

22 RECORDS

Suitable records must be kept by the Estates and EBME Departments:

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

23 PROHIBITED EQUIPMENT AND PRACTICES

The use of extension leads, multi socket adaptors or trailing sockets is to be discouraged on Health Board premises. In extreme cases when the use is absolutely necessary, all socket extension leads must bear an approval mark, e.g. 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/s who will give advice.

24 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.

25 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.

26 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,

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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.

27 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.

28 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 EBME 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

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

29 APPENDIX A - TYPICAL USER INSPECTION CHECK LIST FOR FIXED AND PORTABLE ELECTRICAL EQUIPMENT

Check the test date has not expired.

Then check for signs of:

- Damage to the local isolator or service switch;
- Damage to plastic or metal conduits, armoured cables
- 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.
- Damage to the flexible conduit or cable outer sheath, for example, cuts, crushing, slight abrasion – scuffing is acceptable.
- Damage to the outer case of the equipment, for example cracks in the outer cover, loose switches, loose parts and screws.
- 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.

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TYPICAL USER INSPECTION CHECK LIST FOR PORTABLE ELECTRICAL EQUIPMENT

First check that the test date has not expired.

Then check for signs of:

- Damage to the mains plug, for example burnt, cracked or loose casing or bent pins.
- Non-standard joints including taped joints in the flexible cable.
- 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.
- Damage to the flexible cable outer sheath, for example cuts, abrasions – slight scuffing is acceptable.
- Damage to the outer case of the equipment, for example cracks in the outer cover, loose switches, loose parts and screws.
- Overheating, for example burn marks, staining and pungent acrid smells.
- Check for signs of possible Water Ingress.

In addition check that:

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

30 LIST OF CURRENT AP'S FOR LV FOR HdUHB

Glangwili General Hospital	Paul Hill
Bronglais General Hospital	Elfyn Jones
Withybush General Hospital	Duncan Evans
Prince Philip Hospital	Stewart Evans

SUMMARY EQUALITY IMPACT ASSESSMENT –

Organisation:	Hywel Dda Health Board
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Proposal Sponsored by:	Name:	Paul Evans
	Title:	Assistant Head of Operations
	Department:	Estates

Policy Title:	145 - LV Electrical Policy
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Brief Aims and Objectives of Policy:	The policy outlines how the organisation will manage and maintain Electrical Safety for low voltage in line with current legislation. It is the policy of the Health Board to ensure that all electrical equipment complies with the relevant statutory and industry standards and is inspected, tested, maintained and operated safely to minimise risk
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Was the decision reached to proceed to full Equality Impact Assessment?:	Yes	✓ No
	Changes made to the revised LV Electrical Policy were assessed as having a low relevance to equality duties and a neutral impact on protected groups.	
If no, are there any issues to be addressed?	Yes	✓ No
	Provision of copies of policies/procedures in alternative formats on request. No evidence gathered to indicate a negative impact. It is designed to uphold the right to life in aiming to minimise any risk associated with electrical safety.	

Is the Policy Lawful?	Yes ✓	
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Will the Policy be adopted?	Yes ✓	
	If no, please record the reason and any further action required:	

Are monitoring arrangements in place?	Yes ✓	
	Any complaints received around equality, diversity or human rights issues following implementation of the reviewed and revised procedures will be addressed on an individual basis and appropriate action taken	

Who is the Lead Officer?	Name:	Paul Evans
	Title:	Assistant Head of Operations
	Department:	Estates
Review Date of Policy:	Two Yearly unless there are any complaints that need to be addressed	

Signature of all parties:	Name	Title	Signature
	Paul Evans	Assistant Head of Operations	22/6/2021
	Alan Winter	Senior Diversity & Inclusion Officer	22/6/2021

Please Note: An Action Plan should be attached to this Outcome Report prior to signature

N/A