# Arrangements and Procedures for Fixed Electrical Systems

Contents

[Arrangements and Procedures for Fixed Electrical Systems 1](#_Toc493060362)

[Document Status 2](#_Toc493060363)

[Page Amendments 2](#_Toc493060364)

[Introduction 4](#_Toc493060365)

[Managing Electrical Safety 5](#_Toc493060366)

[Legal Background 5](#_Toc493060367)

[Managing Procedures 6](#_Toc493060368)

[Electrical Safety Management System 6](#_Toc493060369)

[Managing People 7](#_Toc493060370)

[Roles and Responsibilities 7](#_Toc493060371)

[For All Electrical Works in Highland Council Properties 7](#_Toc493060372)

[Overview of the Development and Infrastructure Delegated Responsibilities for Electric Management 11](#_Toc493060373)

[Training 12](#_Toc493060374)

[Electrical Management Group 12](#_Toc493060375)

[Overview of the Electrical Management Groups Structure and Reporting 13](#_Toc493060376)

[Managing Specific Issues 14](#_Toc493060377)

[Monitoring Compliance – Non Domestic 14](#_Toc493060378)

[Capital Works 15](#_Toc493060379)

[Pre-Construction Information 15](#_Toc493060380)

[1. Risk Assessment 15](#_Toc493060381)

[2. Process 16](#_Toc493060382)

[3. Installation, Testing, Commissioning and Handover 17](#_Toc493060383)

[Certification 17](#_Toc493060384)

[Initial verification (inspection and testing) forms 17](#_Toc493060385)

[Minor works 17](#_Toc493060386)

[Premises Guide to Electrical Management 18](#_Toc493060387)

[Appendix 1 User Check Lists 19](#_Toc493060388)

[Appendix 2 - Items for consideration during alterations to an electrical system 20](#_Toc493060389)

[Key requirements for design 20](#_Toc493060390)

[Appendix 3 - Verification of Electrical Installations 22](#_Toc493060391)

[Appendix 4 25](#_Toc493060392)

# Introduction

1.1 This document takes forward the policy statement contained in the council’s general statement of Health Safety and Wellbeing Policy by setting out the arrangements to implement the policy in relation to electrical safety.

1.2 The arrangements are specifically relating to non-domestic Highland Council owned and occupied premises. Delegated responsibilities are dictated within lease agreements for premises owned by third parties.

1.3 The arrangements for electrical safety cover:

* Roles and responsibilities with reference to electrical installations to ensure they are clearly defined.
* Operational guidance that is available on the Highland Council intranet.
* Safety check contracts for fixed installations, where covered by the Electricity at Work Regulations 1989 and subsequent second tier guidance.
* Provision and Use of Work Equipment Regulations 1998.
* Quarries Regulations 1999 and subsequent second tier guidance.

1.4 The arrangements will ensure:

* Installations are designed, installed, commissioned, operated and maintained in strict accordance with the current electric regulations and any relevant second tier documentation.
* Technical guidance variations are considered within the servicing contracts.
* Guidance is available for staff on how to carry out suitable competency checks on contractors undertaking works on any Highland Council Electrical installation.
* That appropriate and suitable training is provided to staff members dealing directly or indirectly with installations, maintenance of or alterations to Highland Council properties that have the potential to effect electrical safety.
* These arrangements will be supported by the allocation of appropriate resources to meet requirements.

1.5 Whilst the arrangements are aimed at ensuring works relating to electrical installations are carried out and delivered in a safe and responsible manner, it should be read and implemented in conjunction with related Highland Council policies.

# Managing Electrical Safety

## Legal Background

2.1 The Health and Safety at work Act places a duty on employers to “ensure, so far as is reasonably practicable, the health, safety and welfare at work of all his employees”. Section 2 (2) *includes in particular-*

1. *the provision and maintenance of plant and systems of work that are, so far as is reasonably practicable, safe and without risks to health;*

*and*

1. *the provision of such information, instruction, training and supervision as is necessary to ensure, so far as is reasonably practicable, the health and safety at work of his employees;*

2.2 It also requires the employer to *“conduct his undertaking in such a way so as to ensure, as far as reasonably practicable, that person not in his employment who may be affected thereby, are not thereby exposed to risk to their health or safety”.* The Management of Health and Safety at Work Regulations 1999 further expands these requiring employers to assess the risks to health and safety of employees to which they are exposed whilst at work.

2.3 The Electricity at Work Regulations 1998 is prescriptive in their requirements. All systems and equipment must be constructed, used and maintained in such a manner to prevent danger ‘*so far as is reasonably practicable*’ and must be suitable for the environment. Identification of circuits and means of isolation should be clearly identified for staff.

2.4 Compliance with British standards evidence good practice and BS7671 should be referenced for electrical installations. Guidance can be sought from the Engineer – Electrical (Maintenance) and the Principal Engineer (Maintenance).

# Managing Procedures

## Electrical Safety Management System

3.1 The Head of Property and Facilities Management has made the following arrangement to ensure that the Council’s Electrical Safety Management System targets legal compliance with the relevant regulations: -

3.2 For non-domestic servicing and maintenance contracts:

* All fixed electrical installations in non-domestic properties owned, leased or licensed by Highland Council are to be maintained in a safe condition to prevent risk of injury to any person.
* All fixed electrical installations shall be inspected at an interval appropriate to their use and condition.
* A record is maintained of all inspection and repair work for the last two inspections.
* All electrical equipment shall have suitable means of identification for the purposes of isolations.
* Procedures for dealing with accidents and dangerous occurrences are in line with the Highland Council’s procedures and notified to the Engineer Electrical (Maintenance).
* Each Service is responsible for ensuring a designated **Responsible Person** (Responsible Premises Officer) in charge of the premises with name and post contact details stored within the corporate asset facilities management system.
* RPOs (Responsible Premises Officer) are responsible for ensuring Public Entertainment Licenses are valid and renewal information asked for 12 months prior to the expiry date.

3.3 For Capital Works:

* The project team should consult the existing electrical installation and condition report prior to undertaking any electrical works which have the potential to effect electrical safety. All design should take consideration of Appendix 2 ‘Items for consideration during alterations to an electrical system’.
* At the appropriate stage in a non-domestic project, appropriate electrical documentation must be issued by a suitably skilled person and forwarded to the Engineer - Electrical (Maintenance) within 28 days of the works being completed.
* On receipt of the above mentioned Electrical Safety Record, the Engineer - Electrical (Maintenance) will arrange for the installation to be inspected and where necessary, added to the service contract.
* Further details of the process required to be followed can be found in the ‘Capital Works’ section of this policy.
	1. For Minor Works:
* All electrical alterations and additions should be accompanied by the relevant certification as per the requirements of BS7671 and as mentioned in sections 12.1 and 12.2. Upon completion, relevant certification should be forwarded to the Engineer - Electrical (Maintenance).

# Managing People

## Roles and Responsibilities

4.1 These arrangements will detail the delegations that have been made to cover roles and responsibilities for electrical safety within non-domestic premises.

4.2 Each service is responsible for the identification of personnel to be designated as the Premises Officeras defined in the Occupational Health, Safety and Wellbeing Policy**.** For non-domestic premises this role shall be undertaken by the RPO (Responsible Premises Officer). Each Head of Service is responsible for ensuring that an RPO is appointed for each of their properties.

## 5. All Electrical Works in Highland Council Properties

5.1 **The Chief Executive** of the Highland Councilretains the ultimate responsibility for ensuring the safety of employees, occupants and tenants in properties under council control.

5.2 The Electrical Safety Management Systemset out in this document has been prepared on behalf of the Director of Development and Infrastructure as **Corporate Property Officer** to cover arrangements for non-domestic premises.

5.3 **The Director of Development and Infrastructure** is responsible for establishing a corporate property safety management system to monitor and ensure that property related statutory inspections are carried out in respect of all council occupied premises.

5.4 **The Director of Development and Infrastructure** is accountable for ownership of Property Management Policy and ensuring sufficient resources are available for policy implementation, monitoring and review of its effectiveness.

5.5 **Heads of Service and Area Managers** have a responsibility to nominate a responsible person in each premise for dealing with health and safety property matters. Where premises are shared, the relevant Heads of Service should ensure that one RPO is appointed and that pertinent information is shared.

5.6 **The Head of Property and Facilities Management** is accountable for appointing an appropriate responsible person and ensuring preparation and implementation of Property Policy, associated Risk Management System, procedures and training.

5.7 **The Head of Property and Facilities Management** will ensure that suitable and sufficient training is provided to all relevant staff.

5.8 **The Head of Property and Facilities Management** shall in *so far as is reasonably practicable* ensure that electrical inspection contracts, maintenance activities and capital works in non-domestic properties are carried out in accordance with statutory legislation including:

* Arrangements to monitor the implementation of electrical safety risk controls.
* Incidents relating to electrical safety are investigated in conjunction with the Electrical Management Group and the Occupational Health Safety and Wellbeing Manager, with findings reported to the Head of Property and Facilities Management for review.

5.9 **The Head of Property and Facilities Management** shall ensure that risk controls for electrical safety are monitored on a regular basis.

5.10 **The Property Manager** is the responsible person and will ensure an electrical safety management system is in place that safeguards the council’s legal obligations for electrical management.

5.11 **The Property Manager** is responsible for arranging, developing, initiating the monitoring of the Electrical Safety Management System including change controls for all council owned and occupied property systems to cover supervision responsibilities for related maintenance, operational and design procedures.

5.12 **The Property Manager** is accountable for appointing the Deputy Responsible Person(s) and managing the budget for Property Management Systems and strategic asset management works.

5.13 **The Property Manager** is responsible for coordinating resources for maintenance related works.

5.14 **The Property Manager** will chair the **Electrical Safety Group** consisting of the following posts:

* The Principal Engineer (Maintenance).
* The Engineer - Electrical (Maintenance).
* Representative from the Energy and Sustainability Section.

5.15 **The Principal Engineer (Maintenance)** is the **Depute Responsible Person** and shall ensure that suitably qualified and competent staff are appointed to manage and monitor contracts for electrical safety and maintenance in non-domestic properties and will ensure that appropriate cover for leave is provided.

5.16 **The Engineer - Electrical (Maintenance)** shall manage and monitor non-domestic contracts for electrical safety inspection works and the subsequent remedial works, on behalf of the Highland Council as an employer and acts as a point of contact for any Highland Council staff for electrical technical advice.

5.17 **The Engineer - Electrical (Maintenance)** is responsible for implementation and coordination of electrical remedial works for non-domestic premises.

5.18 **The Consultancy Manager, the Energy and Sustainability Manager** and **the Programme Manager** will ensure suitably qualified person(s) are involved with design, management, installation and delivery of capital funded projects (as applicable to each team) that either directly or indirectly have the potential to affect electrical safety.

5.19 **The Contract Officer** shall be appointed to assist the Engineer - Electrical (Maintenance) with the monitoring of electrical safety inspection contracts. The Contract Officer shall be responsible for administrating the electrical safety inspections contract to ensure compliance with all relevant statutory legislation, guidance and council policies. A summary report of defects will be issued quarterly to the Electrical Management Group.

5.20 **The CDM Officer** ensures that the required information for electrical testing and certification is contained within the project Health and Safety file within the viewpoint system.

5.21 **The Senior Maintenance Officer(s)** is responsible for arranging implementation and coordination of day to day maintenance works for non-domestic property maintenance.

5.22 **The Maintenance Officer(s)** is responsible for ensuring day to day maintenance works are completed in compliance with all relevant legislation, guidance and Council policies**.**

5.23 **The Principal Project Managers, Project Managers, Project Coordinators, Principal Architects, Architects, Architectural Technicians, Design Engineers and Graduate Engineers** are responsible for the compliant design and delivery of Capital Works projects.

5.24 **Skilled Persons - Appointed Contractors (Approved Status)** are responsible for carrying out remedial works, maintenance or monitoring checks in accordance with Council Policies and instructions from Maintenance Officers / Contract Administrators/ Engineer Electrical (Maintenance).

5.25 **The Responsible Premises Officer(s) (RPO)** is responsible for ensuring routine user checks are carried out on the fixed electrical system (see appendix 1 for user checks). The RPO is required to notify the Electric safety mailbox of the renewal date for the public entertainment license.

5.26 **The Performance Management Officer** is responsible for recording the status of contract compliance checks.

5.27 **The Occupational Health Safety and Wellbeing Manager** will investigate any electrical related incidences with the Electrical Management Group.

## Legislative Framework

### 7. Overview of the Development and Infrastructure Delegated Responsibilities for Electric Management

## 8. Training

8.1 Persons involved in electrical installation design work, preparation of specifications/documents for electrical maintenance contracts and/or quality assurance checks shall be assessed on a regular basis to ensure the level and range of competence matches the extent and relevance of work undertaken.

8.2 A program of ‘refresher’ training is to be provided to all technical staff to ensure they are aware of current legislation, codes of practice in relation to electrical safety and service procedures to be followed. The Engineer - Electrical (Maintenance) for electrics will make Heads of Service aware of the dates for electrical awareness training and the costs.

8.3 Employees have a duty under the Health and Safety at Work etc. Act 1974 section 7 to undertake health and safety training and this must be adhered to. (Any items of concern with training should be raised with Property Manager).

8.4 Line Managers shall ensure that instruction, training, and supervision are provided at an appropriate level within an induction period to new staff who are employed to deal directly with installations or alterations to Highland Council properties that has the potential to affect electrical safety.

# 9. Electrical Management Group

9.1 The Electrical Management Group (EMG) shall undertake a coordinated approach to the establishment and management of The Highland Councils Electrical Safety Management System.

9.2 The Electrical Management Group will primarily be made up with staff from property and staff from the energy and sustainability unit, to regularly review the electrical safety management system ensuring the reduction of risk from electrical installations in property is developed, maintained and implemented. The group will also review regulation changes and the Highland Council’s usage of new technology to reduce energy consumption and increase safety.

9.3 Minutes of the quarterly meetings will be issued to:

* The Head of Property and Facilities Management
* The Property Manager
* The Health, Safety and Wellbeing Manager

### 9.4 Overview of the Electrical Management Groups Structure and Reporting

# 10. Managing Specific Issues

## Monitoring Compliance – Non Domestic

10.1 The Engineer - Electrical (Maintenance) will ensure that all non-domestic servicing is undertaken in line with the current regulations and that training is available on a regular basis to maintain staff competency within The Highland Council.

10.2 Any contractor working on an electrical installation within the Highland Council estate will have to be registered with the relevant trade organisation.

|  |  |
| --- | --- |
| **Issue** | **Control Measure** |
| Correctly timed electrical condition inspections are being implemented. | The contractor provides a written program of works to ensure servicing within the correct time frame. |
| Suitably skilled persons are used to undertake electrical safety check/maintenance work. | Prior to authorising works within the electrical installation competency of the contractor shall be assessed in accordance with LABSS PGN EQ004/2016 (see appendix 3). Contractors MUST achieve risk levels 1 or 2 to be considered suitable.All electrical designs are undertaken and reviewed by suitably skilled person. Design work to be referenced against current standards (BS7671). |
| Maintenance and electrical safety check works are carried out effectively and repairs/defects identified are remedied timeously.  | Sufficient resource will be allocated to allow for accurate monitoring of checks and rectification of defects highlighted. The Engineer – Electrical (Maintenance) to review certification and action remedial works as appropriate. |
| To comply with CDM Regulations 2015, an Operation and Maintenance manual providing manufacturers printed instructions for all appliances must be provided. All relevant certification must be provided within 28 days of issue to the project CA. | The project CA should ensure this is contained within the Health and Safety file. |
| System monitoring and quality control information received are evaluated by Electrical Management Group. | Risk control is an agenda item on the bi-monthly meetings for the Electrical Safety Group. |
| Management arrangements are reviewed to take account of improvements required following any reports of accidents/incidents or audits.  | Agenda item at the quarterly meetings for the Electrical Safety Group.Health and safety items are a standard agenda item for the Electrical Management Group.  |
| Works instructed are instructed in accordance with building standards requirements. | Prior to instructing works within electrical installation the Building (Scotland) Regulations 2004 Regulation 5 Schedule 3 should be consulted. |

10.3 Reviews of electrical risk controls relating to premises should be reviewed on a regular basis to ensure their suitability. Premises risk controls should include:

* Up to date RPO details within the corporate asset facilities management system.
* Familiarisation for all staff with the isolation points for the electrical installation.
* Suitable emergency action plan with reference to electrical incidents.
* Access is maintained at all time to the points of isolation and where these are located within a locked compartment for security reasons, all staff members should be aware of the location of the keys.

# 11. Capital Works

# Pre-Construction Information

11.1 All construction projects will be required to take into account the impact of electrical safety from the proposed design and construction. The following sections outline the steps to be taken with outcomes recorded in designers risk management and construction phase plan. These steps are required to discharge client duties under CDM regulations 2015 to provide Pre Construction Information and for the Principle Designer/Designer to meet their obligations to design out hazards and manage the risks from works that may impact on electrical safety.

## 11.2 Risk Assessment

11.2.1 The condition of the existing electrical installation should be assessed by a suitably electrically skilled person and the most recent electrical installation condition report should be consulted. Designs should take consideration of all elements listed within Appendix 2 ‘Items for consideration during alterations to an electrical system.

11.2.2 The risk assessment should be an open process to ensure no harm comes to persons, property or live stock. The risk assessments undertaken shall be carried out by a suitably electrically skilled person in accordance with BS7671 current edition and recorded in writing.

11.2.3 For all capital works, refurbishment, maintenance and repairs the project Contract Administrator/Designer should fully consider the effect on Electrical Safety of all works contained within the project. An electrical risk assessment shall be, carried out in conjunction with the appointed Principle Designer and should be specifically noted in the designer duties assessments and incorporated in Pre- Construction Information by the Principle Designer. This should be carried out as part of the normal CDM Designer Duties Hazard Assessment process and recorded

11.2.4. Where a current electrical installation condition report indicates issues of non-compliance this should be brought to the attention of the project Contract Administrator with a request that these are rectified as parts of the works and before practical completion.

11.2.5 The Designer Duties Assessment should identify any requirements for a safe system of work e.g. de-commissioning and re-commissioning electrical installations. It should also highlight specific actions of compliance protection required during refurbishment works.

11.2.6 Where intrusive surveys are required, (e.g. an Asbestos Refurbishment & Demolition survey, condition survey of plant or appliances) the Engineer- Electrical (Maintenance) should be contacted and a suitably skilled contractor must be present whilst the survey is undertaken to allow for the safe isolation of equipment to be worked on.

## 11.3 Process

11.3.1 The Project Manager (PM) will be supplied with the current Electrical Installation Condition Report (EICR) for the property. The project CA/Designer must confirm with the PM that they have received all the relevant certificates.

11.3.2 The project CA/Designer will identify the locations of electrical switch gear to produce generic designs to assist in the risk assessment process.

11.3.3 The contractor must ensure that a suitably skilled contractor is employed to carry out any works to the installation. They must confirm and record that safety checks are carried out and recorded prior to any works commencing. Immediately following any works which may affect the safety of the electrical installation, the contractor must issue the appropriate electrical certification.

11.3.4 All commissioning and decommissioning works to any electrical system must be carried out by a suitably skilled contractor in accordance with appropriate current standards and any site specific items highlighted by the EICR. The designer’s assessment must be made available to the electrical contractor prior to works commencing.

11.3.5 To allow records to be updated and the service contractors informed, the completed certification must be sent by the project CA to the PM who will then ensure that they are issued to Engineering – Electrical (Maintenance), within 28 days.

11.3.6 The project CA is to ensure that all contractor obligations regarding Electrical safety, notwithstanding, partial possession, etc. are included within the contract documents.

11.3.7 The project CA must specify these processes in the Project/Contract documents and bring this procedure to the attention of the Contractor and Clerk of Works at the pre-start meeting and ensure it is implemented.

11.3.8 The handover process will not be complete until the ‘file in place’ and individual sign off sheets are completed. Periodic reviews (at a maximum of six months) will be undertaken to ensure the process is effective.

## 11.4 Installation, Testing, Commissioning and Handover

11.4.1 Certification should not be provided at the end of the project but at the correct project procedure gateways during the project. Advice can be located on the Programme and Cost Management and Consultancy Team site within Share Point.

11.4.2 At the designated stage in a non-domestic project, appropriate electrical certification must be issued by a suitably skilled contractor and forwarded to the Engineer - Electrical (Maintenance). These records must be submitted to the CA and the Engineer – Electrical (Maintenance) within 28 days of the works being completed. Depending on the complexity of the installation as built drawings may need to be provided within the Health and Safety file stored within Viewpoint.

## 12. Certification

### Initial verification (inspection and testing) forms

12.1 Following the initial verification of a new installation or changes to an existing installation, an Electrical Installation Certificate, together with a schedule of inspections and a schedule of test results, is required to be given to the person ordering the work. Copies should also be given to the Engineer – Electrical (Maintenance) within 28 days. In this context, 'work' means the installation work, not the work of carrying out the inspection and testing. Likewise, following the periodic inspection and testing of an existing installation, an Electrical Installation Condition Report, together with schedules of inspection and schedules of test results, are required to be given to the person ordering the inspection.

### Minor works

12.2 The complete set of forms for initial inspection and testing may not be appropriate for minor works. When an addition to an electrical installation does not extend to the installation of a new circuit, the minor works form may be used. This form is intended for such work as the addition of a socket-outlet or lighting point to an existing circuit, or for repair or modification.

# 13. Premises Guide to Electrical Management

13.1 The Electricity at Work Regulations requires the employer to maintain safe and efficient electrical systems, to prevent the harmful discharge of energy, assess the work activities which utilise electricity or which may be affected by it, and to define all foreseeable associated risks. In order to reduce the risks associated with the use of electricity at work, the Council will ensure that:

13.2 Electrical installations and equipment are installed in accordance with the Institute of Engineering and Technology (IET) Wiring Regulations/BS7671 and associated guidance.

13.3 Electrical installations to be periodically inspected and tested by suitably competent persons in accordance with BS7671 and a report prepared listing any defects and any non-compliances found.

13.4 Fixed installations are maintained in a safe condition by carrying out routine safety testing and ensuring staff report defects and concerns.

13.5 Portable and transportable equipment is inspected and tested frequently as required (the frequency will depend on the environment in which the equipment is used and the conditions of usage). PAT testing must be made via Community Services (01463 715087). Charges for PAT testing are included in the PAT Service Level Agreement. Managers are responsible for ensuring their team’s equipment is checked, inspected and tested, as required.

13.6 Safe systems of work for maintenance, inspection or testing are promoted and implemented. Refer to appendix 1. Annual user checks will be carried out and are the delegated responsibility of the RPO.

13.7 Live working is forbidden unless it is absolutely necessary, and suitable arrangements have been made to prevent injury to the persons carrying out the work and anyone else who may be in the area. (This should not be confused with live testing done by a suitably skilled electrically competent person).

13.8 Those who carry out electrical work are competent to do so. Suitable personal protective equipment is provided if required to include special tools, protective clothing and insulating screening and such equipment is maintained in good condition.

13.9 Safety information is exchanged with contractors ensuring that they are fully aware of (and prepared to abide by) the Council's health and safety arrangements.

13.10 Detailed records in relation to the above are maintained.

13.11 All enquiries relating to electrical safety can be emailed to the electrical safety mailbox ElectricSafety@highland.gov.uk.

13.12 The RPO should, as far as is reasonably practicable, ensure that this is being done in order that fire safety in the premises is not being compromised.

# 14. Appendix 1 User Check Lists

Annual Checklist

|  |  |  |  |
| --- | --- | --- | --- |
| **Check to be undertaken**  |  |  |  |
| 1) Isolation  | Date | Action | Complete |
| 1. RPO should inform staff of emergency cut off and emergency evacuation
 |  |  |  |
|  |  |  |  |
| 2) Meter Equipment |  |  |  |
| 1. There are no visual signs of burning, overheating or damage and no burning smell at the electrical intake position. (Usually where the consumer unit and electricity meter are located).
 |  |  |  |
| 1. The electrical intake position and consumer unit are easily accessible and free from storage materials.
 |  |  |  |
|  |  |  |  |
| 2) Distribution Board |  |  |  |
| 1. There are no blanks missing from the consumer unit. Halt test at this point and contact Engineer Electrical Maintenance for further guidance.
 |  |  |  |
| 1. The distribution board is correctly labeled for identification of circuits.
 |  |  |  |
| 1. There are no noticeable signs of electrical burning near the distribution board/electricity meter. (By smell or visual evidence).
 |  |  |  |
| 1. Cover is secure and all fixings are present.
 |  |  |  |
|  |  |  |  |
| 3) Residual Current Device |  |  |  |
| 1. RCD at distribution board.
 |  |  |  |
| 1. RCD tested.
 |  |  |  |
| 1. RCD devices do not trip regularly. (RPO consulted).
 |  |  |  |
|  |  |  |  |
| 4) Fixtures and Fittings |  |  |  |
| 1. All light fittings working with no scotch marks.
 |  |  |  |
| 1. All sockets working and so no sign of burning.
 |  |  |  |
| 1. There are no signs of modifications.
 |  |  |  |
| 1. Face plates are secure and all fixings are present
 |  |  |  |
|  |  |  |  |
| 5) Electrical Appliances |  |  |  |
| 1. No sockets overloaded. RPO aware of the dangers of this.
 |  |  |  |
| 1. No flammable items near heating system.
 |  |  |  |

If you are unable to check any boxes, please email ElectricSafety@highland.gov.uk

# 15. Appendix 2 - Items for consideration during alterations to an electrical system

15.1 Design is part of the process of creating, changing or removing elements of the electrical system. The design process introduces the need to check that any changes related to the electrical system, such as on the electrical installation and equipment, are acceptable before any work commences.

15.2 This activity should not be confused with the design solution, because this would be covered by complying with an appropriate standard, such as an electrical installation standard or equipment product standards.

## Key requirements for design

15.3 All designs must comply with the current edition of BS7671 and ensure that a safe process is implemented to cover the following:

1. Electrical Safety design aspects for
* Specification
* Installation
* Commissioning
* Operation
* Maintenance
* Decommissioning.
1. A clear understanding of what the planned design requires, including:
* Current site supplies (low voltage and/or high voltage)
* Site location consideration
* Electrical installation capabilities
* Fault levels
* Prospective fault current
* Protective Device settings
* Electrical loads and their requirements
* Impact of new technology on existing systems
* Essential and critical power supply requirements
* Electrical earthing and bonding
* Equipment locations, layout, space requirements, access requirements including emergency considerations e.g. for isolation
* Planned future developments.
1. Specialist electrical engineering resource responsible for all aspects of design and capable of assessing the design and specification, including reinforcement, refurbishment and replacement.
2. Provision of internal or external design expertise.
3. Clear statement of standards to be used.
4. Confirmation the new or modification electrical installation work is compliant with the registered standards
5. Confirmation that new or modified electrical equipment is compliant with the recognised standards.

15.4 The design process should consider the following aspects of an electrical system:

* High voltage and low voltage distribution requirements
* Metering
* Energy Management
* Building Management systems
* Prefabricated wiring systems
* Number of equipment power points e.g. socket outlets, permanently connected equipment
* Interior and exterior lighting including the associated manual and automatic controls
* Emergency Lighting
* Fire alarm and detection system
* Security systems e.g. access control, closed circuit television (CCTV) and intruder detection
* Standby supplies
* Renewable generation e.g. Photovoltaic, wind turbine
* Uninterruptable power supplies
* Battery Systems
* Building transportation systems e.g. lifts and escalators
* Information technology systems e.g. cabling, patching panels, server rooms
* Automation and control systems.

15.5 Designs should also consider the electrical equipment manufacturer specifications so that:

* Compatible component parts can be specified
* Complete specifications of all required components parts can be made
* Missing or incorrect parts can be identified at delivery.

# 16. Appendix 3 - Verification of Electrical Installations

16.1 In relation to electrical safety, its importance in the building standards system is recognised through the Building (Scotland) Act 2003. In so doing, the aim is that the owner (relevant person) should appoint an Approved Certifier of Construction (ACC) to undertake all electrical installations to BS7671 and issue a Certificate of Construction confirming compliance with building regulations. However, given the non-mandatory status of the certification schemes, in practice, not all electrical installations are undertaken or supervised by an ACC.

## 17. Recommended Options for Achieving Equivalence

17.1 This guidance note recommends adopting a risk based approach to determining the extent of reasonable inquiry by a verifier, based on who is undertaking the installation. The document suggests there are four risk levels as outlined below.

17.2 Risk Level 1 - installations undertaken by an ACC who is certifying the electrical installation. It is recommended that verifiers should be actively promoting this option on the basis of the added value this brings to the compliance agenda. It is recognised that an ACC will consider the impact that the construction of the electrical installation has on all related functional building standards. Suggested reasonable inquiry in such cases will be limited to checking the validity of the Certificate of Construction.

17.3 Risk Level 2 - installations undertaken by an electrician who is registered with NICEIC, a member of SELECT or an equivalent organisation accredited by UKAS to conduct inspections or provide certification services (ISO/IEC17065 or ISO/IEC17020:2012). Suggested reasonable inquiry in such cases may involve some level of inspection, primarily in relation to the impact of the electrical installation on related standards and assessing the BS7671information.

17.4 Risk Level 3 - installations undertaken by other electrician who falls out with 1and 2 above, who demonstrate competence through submission of a completed checklist (see Appendix 4). Suggested reasonable inquiry in such cases may involve some level of inspection of the electrical installation and assessing the BS7671 information, in addition to the satisfactory completion of the checklist.

17.5 Risk Level 4 - installations undertaken by someone other than as described in 1, 2 or 3 above. Suggested reasonable inquiry in such cases should involve some level of inspection of the electrical installation and requires the installation to be inspected and signed off by an ACC or an electrical contractor certified by a UKAS ISO/IEC17065 accredited certification body.

17.6 In determining 'reasonable inquiry' in general, it is emphasised that it is not the verifiers' role to inspect all materials and work on every building site. To this end, owners/clients should be reminded/advised that they ultimately carry responsibility for compliance with the mandatory functional standards.

Notes:

a) Where a verifier is to inspect an electrical installation, the inspection must be undertaken by suitably qualified and experienced staff. Training is to be as provided on an ongoing basis by SELECT/ NICEIC.

b) For auditing purposes, the verifier should have in place a risk protocol/linked to training/ competencies.

17.7 IDENTIFIED NON COMPLIANCE

17.7.1 Risk Level 1 - as in the case of all work covered by any of the certification schemes; the verifier has no remit to question the installation with the Approved Certified Construction scheme. Where, however, faults are found, reported or even suspected, the verifier should report these to the Scheme Provider.

17.7.2 Risk Level 2 - for defects in the electrical installation found or suspected pre-completion, acceptance should be raised with the agent/client, as is the case with other defects.

17.7.3 For defects in the electrical installation reported following acceptance of a completion certificate, the verifier may suggest to the agent/applicant that they report the matter to the relevant certification or trade body, as they have investigative and remedial powers under their schemes.

17.7.4 Risk Level 3 & 4 - for defects in the electrical installation found or suspected pre-completion, acceptance should be raised with the agent/client, as is the case with other defects. For defects with an electrical installation reported following acceptance of a completion certificate, there is no recourse to a certification/trade body to address the concerns.

Appendix 4

|  |  |  |  |
| --- | --- | --- | --- |
| **Risk** | **Installer** | **Impact on or Benefit to verifier/service user** | **Suggested reasonable Inquiry by (dependent on size and scale of project)** |
| **Electrical Installation** | **Related Standards** |
| Risk Level 1 | Approved Certifier of Construction (ACC) – declared on warrant application form | Covered by CoC schemeRecourse to scheme provider | Covered by CoC schemeRecourse to scheme provider | Check Validity of Certificate of Construction |
| Risk Level 2  | An electrician registered with NICEIC, member of SELECT or an equivalent organisation accredited by UKAS to conduct inspections or provide certification services (ISO/IEC17065 or ISO/IEC17020:2012)  | Covered by scheme/registration/trade body Recourse to trade body | Covered by scheme/registration/trade body Recourse to trade body | Construction Compliance Notification PlanIntermediate stage – where appropriate check notching/fire stopping etc.Check membership of Trade body.Check details in BS7671 certificate |
| Risk Level 3 | Electrician who demonstrates competency (Appendix A) | Not covered by scheme/registration/trade bodySubject to RI by verifier | Not covered by scheme/registration/trade bodySubject to RI by verifier | Construction Compliance Notification PlanIntermediate stage – where appropriate check notching/fire stopping etc.Completion stage – carry out cursory check of the electrical installation.Receive completed self-certification form (Appendix A). Check details in BS7671 certificate. |
| Risk Level 4 | A N Other | Not covered by scheme/registration/trade bodySubject to RI by verifier | Not covered by schemeSubject to RI by verifier | Construction Compliance Notification PlanIntermediate stage – where appropriate check notching/fire stopping etc.Completion stage – carry out cursory check of the electrical installation.Request a satisfactory EIC Report from an electrician who is registered with NICEIC, a member of SELECT or an equivalent organization accredited by UKAS to conduct inspections or provide certification services (ISO/IEC17065 or ISO/17020:2021).Check details in BS7671 certificate |