

SAFE PEOPLE | SAFE PLACES | SAFE SYSTEMS



# Guardian

ELECTRICAL COMPLIANCE

## Medical Locations

A guide to Electrical Testing within Medical Locations, including a case study based on

The Princess  
Alexandra Hospital



NHS Trust





## INTRODUCTION

**The purpose of this Guide is to identify the important aspects of being an electrical duty holder in a medical environment and how to comply with your legal responsibilities. If you are responsible for the operation and maintenance of the electrical infrastructure within your workplace, this guide is for you.**

The use of electricity makes it essential that all electrical systems are managed without giving rise to danger. Inadequate control and/or improper use of electricity are a danger to life and property. The duty holder is responsible for the design, installation, operation and maintenance of the electrical systems.

The duty holder should take all necessary steps to secure the safety of employees, patients, and visitors. This also applies to anyone who uses, operates or maintains electrical equipment and/or systems on their premises. The Electricity at Work Regulations 1989 impose a duty on 'employers' to comply with these insofar as they relate to matters which are within their control. These duties are in addition to those imposed by the Health and Safety at Work Act 1974.

# GUIDANCE FOR MEDICAL LOCATIONS

**All types of medical locations require periodic inspection and testing to demonstrate compliance with the Electricity at Work Regulations 1989.**

Medical environments are recognised within BS7671, as special locations. There are numerous regulations that give guidance on the type of electrical installation that must be provided to ensure the safety of patients, visitors and medical staff.

The following list is not exhaustive;

- BS 7671:2008 IET Wiring Regulations 17th Edition- AMD.3, Section 710 Medical Locations
- IET Guidance Note 7 - Special Locations section 9
- Health Technical Memorandum (HTM) 06-01: Electrical Services supply and distribution
- Medical Electrical Installation Guidance Notes (MEIGaN)

There is a preconception that medical locations cannot be inspected and tested due to the nature of their 24/7/365 usage, this is not the case. Guardian Electrical have vast experience in this field and have developed unique programmes of work for over 30+ hospitals, which enable electrical testing to be completed with minimal disruption to operations.

It is true that most medical locations will have high risk areas where the interruption of supplies could have life threatening consequences, but with good planning these high-risk areas can be dealt with in

a controlled manner. Testing can be completed within these areas simply by undertaking works during quiet periods such as nights, and/or weekends.

## **High risk areas include;**

- Operating theatres
- High Dependency Units / Intensive Care
- Maternity units
- Isolation Units
- Day surgery units

Fortunately, high risk areas represent only a fraction of a medical facility. The rest of the electrical installation, which is considered low risk, can be inspected and tested during normal hours, usually Monday to Friday.

## **Low risk areas include;**

- Concourses
- Corridors
- Estates Departments
- Plant Rooms
- Administration Blocks
- Training Centres
- Patient Wards

**Over 30+ Hospital NHS Trusts throughout the UK have an inspection & testing programme with Guardian Electrical.**

## **CASE STUDY - THE PRINCESS ALEXANDRA HOSPITAL**

**The Princess Alexandra Hospital have used Guardian's testing services for many years. During this period, Guardian have successfully carried out a full programme of periodic inspection and testing, all in accordance with the BS 7671:2008 IET Wiring Regulations 17th Edition and the Electricity at Work Regulations 1989.**

### **THE SPECIFICATION**

The original specification for the project, formed by the Estates Department at the hospital, was to carry out a 20% periodic inspection and test of the site annually, over a 5-year period. Their requirement included Comprehensive LV Network Distribution Drawings, labelling of distribution equipment and identification and labelling of final circuit accessories.

Guardian were selected from a short list to attend site and present their capability to deliver a programme of works for the Fixed Wire Inspection and Testing. During this presentation, Guardian not only demonstrated their ability to deliver the project, they also presented Andrew Bell, the Senior Estates Manager, with an alternative solution to achieve compliance with the EaWR 1989.

# CASE STUDY - THE PRINCESS ALEXANDRA HOSPITAL

## THE GUARDIAN STRATEGY

Guardian's alternative method was to adopt a 2-stage strategy that would cause the least impact on The Princess Alexandra Hospitals normal operations and deliver further cost savings, in the medium to long term life of the hospital.

The initial stage, named the **1st Stage Strategy**, would be completed over 1 year and would include;

- Network Drawings of the Electrical Installation - ABSOLUTE Regulation 12 (EaWR)
- Earth Fault Loop Impedance & Prospective Fault Current readings - ABSOLUTE Regulations 5, 8 and 9 (EaWR)
- Visual Inspection of the LV electrical Distribution Boards and documented schedule of observations - ABSOLUTE Regulations 10 & 11 (EaWR)
- Asset Register of active circuits in order to produce accurate information for costing
- Thermographic Survey of all relevant Distribution Boards, with imagery & technical analysis
- All of which to be uploaded onto Guardian's bespoke online reporting system, TraQ-it®.

Upon completion of the first stage, the next stage would consist of 20% periodic inspection and testing of the site annually, over a 5-year period.

This unique testing programme was swiftly approved by Andrew Bell and soon after, Guardian were on site starting the project. Andrew agreed that the significant advantage of the 1st Stage approach was the ability to determine which departments of the hospital may be affected by isolation of main and sub-main distribution.

Guardian's Project Management team and onsite engineers worked closely with The Princess Alexandra Hospital estates department to complete the project, with the least intrusion to the normal day to day running needs of the hospital. This involved regular meetings to discuss working patterns, access to areas, and schedules.

Andrew Bell - Senior Estates Operations Manager wrote;

*"My experience of using Guardian is that they are professional, diligent and are at the forefront of the Inspection and Test industry. I would recommend them to any establishment in the healthcare sector."*

Training on our online portal, TraQ-it® was arranged for Andrew and his Estates team, once the reports had been quality assured and uploaded to their tailored website. This meant they could gain access remotely and view all Inspection Reports, Network Drawings, Electrical Danger Notifications and even upload any remedial work that had been completed.

Due to the success of Guardians services in delivering the 1st Stage, Andrew Bell chose to accelerate the 2nd Stage, which was originally a 5-year programme, to a 2-year programme. Within 3 years, the whole electrical installation of the hospital had been 100% tested in accordance to the EaWR 1989.

The project was delivered with minimal intrusion on The Princess Alexandra Hospital, and no incidents of inadvertent isolation of essential supplies, which was Andrews main worry at the beginning of the project.

## EFFECTIVE MONITORING - SAVINGS FOR THE FUTURE

An alternative approach can be introduced for the next 5-year programme in accordance with paragraph 69 of the EaWR 1989.

Provided changes to the electrical fixed wiring installation and Minor Works Certificates are forwarded to the TraQ-it® department, The Princess Alexandra Hospital will maintain a fully reconciled electrical installation report at all times.

## FACTS

- Located in Essex, the main hospital is a 500 bedded District General Hospital
- Within the Princess Alexandra Hospital NHS trust, there are 3 more medical facilities;
  - Herts & Essex Hospital
  - Rectory Lane Clinic
  - and St Margaret's Hospital
- This trust provides a comprehensive range of services to a local population of 350,000 people
- The trusts maternity wards have welcomed over 4000 babies during 2016
- The main hospital, originally constructed in 1958, has undergone major expansion and upgrading of buildings over recent years

# TRAQ-IT® - STAYING IN CONTROL



## CONTROLLED RECORD KEEPING

Guardian's unique interactive website features include instant reporting, exporting capabilities, hierarchical permission levels, search and filter functionality. Its multi-site capability allows customers to view the electrical status of individual buildings.

**TraQ-it® ensures records are current, accurate and consolidated with a version history of all changes.**



Upon completion of each stage of the programme, electrical testing data, electrical dangers notifications and network drawings are returned to the TraQ-it® Department for quality assurance prior to uploading on your personalised site, all free of charge.

**To view a short video about TraQ-it®, please visit: [www.guardianelectrical.co.uk](http://www.guardianelectrical.co.uk)**

## MEDICAL FRAMEWORK AGREEMENTS

Guardian Electrical Compliance are currently on the following NHS frameworks and happy to apply to any others deemed necessary by the client;



East of England NHS Collaborative Procurement Hub



London Procurement Programme



North of England  
Commercial Procurement Collaborative

## TESTIMONIALS

### Doncaster and Bassetlaw Hospitals

**Robert Holdridge** - Estates Manager

*"Guardian Engineers have a very professional and flexible approach to their work, communicating with departments as required to arrange access to often difficult areas and working out of hours when needed.*

*Risk assessments, method statements and documentation for the inspectors were supplied before the work was due to commence, allowing us to check and file them appropriately.*

*We have been totally satisfied with the work Guardian have carried out for Doncaster and Bassetlaw hospitals and would gladly recommend them to any other organisation."*

### Macclesfield District General Hospital

**Laurence Edwards** - Estates Officer

*"The Inspectors were very professional in their manner, causing no disruption around the hospital and adhering to our strict guidelines and regulations. Their unique reporting medium, TraQ-it® enables users to develop a version history of testing and with drawings stored online they are readily accessible to us at anytime. The capability of the website means that records for a large number of sites can all be housed securely in one place."*

# HOSPITALS & TRUSTS WE WORK WITH

University Hospital  
Southampton  
NHS Foundation Trust



West Hertfordshire  
Teaching Hospitals  
NHS Foundation Trust



Isle of Wight  
NHS Trust



Berkshire Healthcare  
NHS Foundation Trust



South West Yorkshire Partnership  
NHS Foundation Trust



Royal United Hospital Bath  
NHS Trust



Tees, Esk and Wear Valleys  
NHS Foundation Trust



University Hospitals of  
Morecambe Bay  
NHS Foundation Trust



Royal Free London  
NHS Foundation Trust



The Princess Alexandra  
Hospital  
NHS Trust

East Cheshire  
NHS Trust



Barnsley Hospital  
NHS Foundation Trust



Sheffield Children's  
NHS Foundation Trust



**NHS**  
Grampian

**NHS**  
Fife

**NHS**  
Borders

Liverpool Heart and Chest Hospital  
NHS Foundation Trust

Gloucestershire Health and Care  
NHS Foundation Trust



Frimley Park Hospital  
NHS Foundation Trust



Bedfordshire Hospitals  
NHS Foundation Trust



Northern Lincolnshire and Goole  
NHS Foundation Trust



East Lancashire Hospitals  
NHS Trust  
A University Teaching Trust



Cumbria, Northumberland,  
Tyne and Wear  
NHS Foundation Trust



Doncaster and  
Bassetlaw Hospitals  
NHS Foundation Trust



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ELECTRICAL COMPLIANCE

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