



Periodic inspection or planned maintenance?

by Jon Elliott

A question which arises from time to time is whether it is necessary to carry out periodic inspections if a property is subjected to a regular, ongoing maintenance program. This article seeks to clarify the statutory and non-statutory requirements for inspection, testing and maintenance. It also attempts to clarify what constitutes an effective management system for preventative maintenance.

Statutory requirements

Regulation 4 (2) of the Electricity at Work regulations (EAWR) 1989 requires:

As may be necessary to prevent danger, all systems shall be maintained so as to prevent, so far as is reasonably practicable, such danger.

When considering this statutory requirement it is necessary to look a little more closely at a few definitions within EAWR 1989 as these differ somewhat from those given in BS 7671:

System is defined as “an electrical system in which the all the electrical equipment is, or may be, electrically connected to a common source of electrical energy, and includes such source and such equipment”

Electrical equipment is defined as “anything used, intended to be used or installed for use, to generate, provide, transmit, transform, rectify, convert, conduct, distribute, control, store, measure, or use electrical energy”.

With reference to the above, it can be seen that Regulation 4 (2) is pretty much all encompassing in terms of the electrical equipment installed within a building.

EAWR 1989 applies to employers, employees, and the self-employed; and the activities carried out by them in a place of work (which will include instances of work on a domestic installation).

There are a number of legal requirements regarding maintenance which are applicable to rented domestic and residential accommodation. Within England and Wales for example, the Landlord and Tenant Act 1985, section 11 *Repairing obligations in short leases* sub-section (1)(b) requires the landlord to keep in repair and proper working order the installations in the dwelling house for

the supply of water, gas and electricity. A similar requirement appears in the Housing (Scotland) Act 2006, Section 13, sub-section (1)(c) (the repairing standard) and Section 14 (Landlords duty to repair and maintain).

In all three of the pieces of legislation mentioned above, the requirement is to MAINTAIN the installation with no specific requirement being made for periodic inspection and testing to be carried out.

Licensing conditions

Many premises open to the public may be subject to Local Authority conditions of license. These licensing conditions may impose a maximum interval between periodic inspection and testing which must not be exceeded, a brief summary of which is given in Table 1 (overleaf), extracted

from IET Guidance Note 3 - *Inspection and Testing*.

Other reasons why a periodic inspection report may be required

There are a number of other reasons why it may be necessary for a periodic inspection to be carried out and the accompanying report and schedules issued. It may, for example, be a prerequisite to obtaining a mortgage or loan against a property. It may become necessary in connection with securing compensation or a payment from an insurance policy following damage to a property from flooding or similar. It may also be a requirement of entering into a leasing agreement whereby a housing association, university or similar agree to take over responsibility of accommodation for a number of years, with a

guarantee to return the property in its original condition at the end of a fixed term. Although these are not of themselves legal requirements, they nevertheless form a part of a contractual agreement and as such make a periodic inspection a requirement through the terms of the contract; in short, no Periodic Inspection Report - no deal.

Non-statutory requirements

Within BS 7671:2008, Regulation 341.1 requires the designer of an electrical installation to make an assessment of the frequency and quality of maintenance that the installation should reasonably be expected to receive throughout its intended life. It also recommends that where possible, the person(s) or body who will be responsible for the operation and/or

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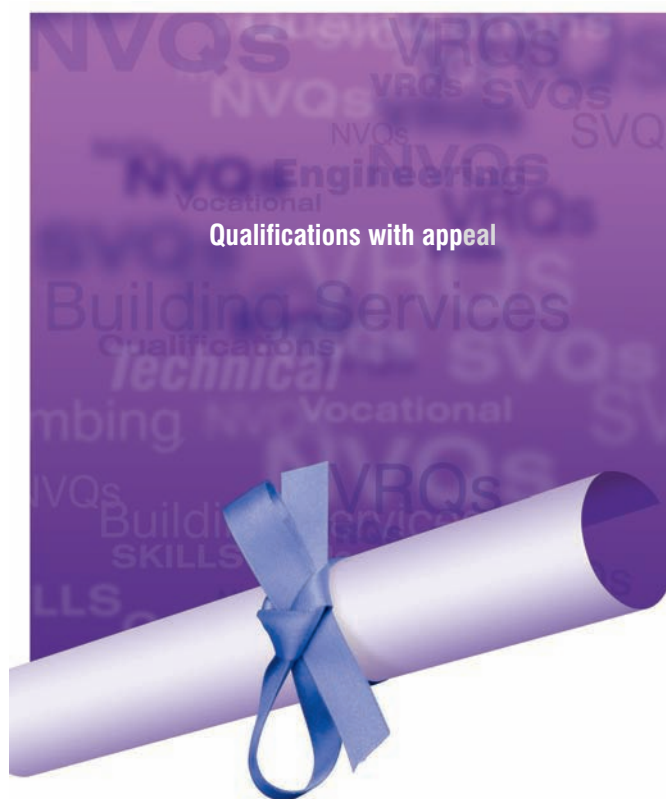
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Type of premises	Typical maximum permitted intervals between periodic inspection and testing
Caravan parks	1 year
Cinemas	1 - 3 years
Launderettes	1 year
Leisure complexes (but not swimming pools)	3 years
Petrol filling stations	1 year
Places of public entertainment	3 years
Public houses	5 years
Restaurants and hotels	5 years
Swimming pools	1 year
Theatres	3 years

Table 1: Typical maximum permitted interval between periodic inspection and testing (extracted from IET Guidance Note 3 - Inspection and Testing)

maintenance of said installation should have some input into this assessment.

The intention of the assessment is to ensure that, throughout the intended life of the installation:

- the necessary periodic inspection and testing; maintenance; and repairs can be performed safely, and
- the protective measures for safety employed within the installation remain effective, and
- the reliability and proper functioning of installed equipment is maintained.

This Regulation also contains a note to remind the reader to consider the statutory requirements relating to maintenance.

Part 6 of BS 7671:2008 contains requirements for inspection and testing. Regulation 621.1 states that the purpose of periodic inspection and testing is to determine, in so far as is reasonably practicable, whether an existing installation is in a satisfactory condition to remain in continued use.

When considering the frequency of

periodic inspection and testing to which an installation should be subjected, Regulation 622.1 requires consideration be given to the type of installation and equipment, its use and operation, the external influences, and the frequency and quality of maintenance to which it is subjected.

Regulation 622.2 introduces the notion that periodic inspection and testing may not be required in an installation where it can be demonstrated that an adequate management system has been put in place to ensure that an effective regime of continuous monitoring and maintenance exists. However, where it is intended to adopt this approach, the persons carrying out the monitoring and maintenance functions must be suitably competent and appropriate records must be kept of the process and the work carried out.

What is an effective management system?

How then does one demonstrate that an installation is subject to an effective management system for preventative maintenance in normal use?

In the case of a workplace, a number of statutory requirements exist that are of relevance on this matter. For example, the *Management of Health and Safety at Work regulations 1999* place general duties on employers to assess risks to the health and safety of employees and others and to take managerial action to minimise these risks. This would include the implementation of preventive measures; the setting up of working and reporting procedures; the provision of relevant information; the appointment of competent people; and the provision of any necessary training.

Regulation 17 (3) of the *Construction (Design and Management) Regulations 2007* requires that reasonable steps are taken to ensure that once the initial construction of an installation has been completed, the information in the site health and safety file remains available for inspection by any person who might need it to comply with any relevant statutory provisions. It also requires that the file is revised and updated as often as may be appropriate to incorporate any relevant new information.

It follows therefore that an effective management system for preventative maintenance in normal use is a legal requirement in the vast majority of industrial and commercial premises.

So what constitutes an adequate regime of continuous monitoring and maintenance?

For this condition to be met it would be necessary for a full and thorough assessment to be made of the whole installation including all electrical equipment installed therein and of the types/grades of operatives who will be expected to carry out the maintenance activities that may reasonably be expected to be completed. It would then be necessary for a work programme to be drawn up detailing the necessary inspections, functional checks, maintenance activities and

suitable frequencies when such activities would need to be performed. Both this assessment and development of the maintenance program would need to be carried out by competent persons having a suitable degree of knowledge and experience of the installation in question or at least those of a similar type and size.

In a typical industrial or commercial installation these maintenance activities may encompass a wide range of tasks including basic activities such as cleaning, lubrication, adjustments to the tension of drive belts and drive chains, security of safety guards and the like and basic functional testing. It would also include more detailed examination, inspection and testing of wiring, motors, luminaires, control panels and other installed equipment to confirm that the installation remains in a serviceable and safe condition and is therefore suitable for continued use.

In order to meet the requirements of BS 7671 it would be necessary to demonstrate that any monitoring and maintenance programme being used as an alternative to periodic inspection provides the same confirmation (or otherwise) of the installation in terms of Regulation 621.2 as listed below:

- safety of persons and livestock against the effects of electric shock and burns
- protection against damage to property by fire and heat arising from an installation defect
- confirmation that the installation is not damaged or deteriorated so as to impair safety
- the identification of defects and departures from the requirements of BS 7671 that may give rise to danger.

Record keeping

Regulation 622.2 also requires appropriate records of the preventative maintenance programme to be kept. The factors which would have to be noted in any such record would

include for example details of:

- the part of the installation/item of equipment being inspected
- the required frequency for this inspection
- the result of this inspection
- any remedial works carried out
- the person(s) carrying out the remedial works
- the person(s) responsible at a supervisory level

Planned maintenance schedules can be extremely large and complex documents which are commonly controlled by a computer program to ensure that the various inspection/maintenance worksheets are issued at the appropriate time. However, in smaller, simpler installations the use of a well documented paper based recording system is not precluded.

Conclusions

It can be seen that a number of factors will have an influence on what approach is taken when considering planned maintenance and periodic inspection/reporting. The vast majority of industrial and commercial installations will be subject to a number of statutory requirements to maintain the installation such that it remains safe to use and does not pose a danger to persons. Certain types of installation will be subject to licensing conditions which require periodic inspection and testing to be carried out at regular, prescribed intervals

throughout the life of the installation. Such requirements would be in addition to any requirements for maintenance for the installation. Often periodic inspection and testing may be necessary as a result of a contractual requirement.

BS 7671 contains a number of requirements relating to the periodic inspection and testing of electrical installations. Regulation 622.2 recognises that periodic inspection and testing may not be required in installations that are subjected to an effective management system for preventative maintenance. However where this approach is adopted suitably skilled persons must be employed both to oversee the maintenance programme and to carry out any required maintenance activities.

Whatever approach is adopted with regard to and periodic inspection, testing and maintenance activities, it is essential that records are kept detailing all and any relevant information. This would include completed maintenance schedules, periodic inspection reports and the like. These records should be retained as they are a valuable source of information which will be of assistance to persons carrying out future maintenance, inspection and testing. They may also be necessary as a means of demonstrating that due diligence has been paid to obligations placed upon persons owning or operating the premises. ■

