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Code of practice for maintenance of low-voltage switchgear and controlgear

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Contents

Summary of pages

This document comprises a front cover, an inside front cover, pages i to iv, pages 1 to 36, an inside back cover and a back cover.

Foreword

Publishing information

This British Standard is published by BSI Standards Limited, under licence from The British Standards Institution, and came into effect on 30 November 2014. It was prepared by Technical Committee PEL/17/3, *Low-voltage switchgear and controlgear assemblies* under the authority of Technical Committee PEL/17, *Switchgear, controlgear, and HV-LV co-ordination*. A list of organizations represented on these committees can be obtained on request to their secretary.

Supersession

This British Standard supersedes BS 6423:1983, which is withdrawn.

Information about this document

This is a full revision of the standard, and introduces the following principal changes:

- The structure has been revised to include separate clauses on preventive maintenance, corrective maintenance and post-fault maintenance.
- A new clause on fitness for purpose assessment and corrective actions has been added.
- A new clause on device substitution has been added.

The purpose of this standard is to provide guidance on the maintenance of low-voltage switchgear and controlgear where technical knowledge and experience are important in ensuring equipment is kept in an acceptable condition. It is intended to be suitable for people involved in all stages of the maintenance process, including those responsible for instigating work, establishing procedures for undertaking work and those actually completing the maintenance work. It also provides guidance on replacing devices within assemblies and on the administrative process required to achieve a successful outcome. It is strongly recommended that this standard is used, together with specific manufacturer's instructions, to develop a coherent maintenance strategy.

The normally quiescent state of electrical switchgear and controlgear does not automatically draw attention to incipient faults, deterioration or the potential danger that can result from neglect. The need for maintenance is often overlooked. An organized system of preventive maintenance will facilitate continued safe and acceptable operation of an electrical system with the minimum risk of breakdown and consequent interruption of supply.

Hazard warnings

WARNING. This British Standard calls for the use of substances and/or procedures that can be injurious to health if adequate precautions are not taken. It refers only to technical suitability and does not absolve the user from legal obligations relating to health and safety at any stage.

Use of this document

As a code of practice, this British Standard takes the form of guidance and recommendations. It should not be quoted as if it were a specification and particular care should be taken to ensure that claims of compliance are not misleading.

Any user claiming compliance with this British Standard is expected to be able to justify any course of action that deviates from its recommendations.

It has been assumed in the preparation of this British Standard that the execution of its provisions will be entrusted to appropriately qualified and experienced people, for whose use it has been produced.

Presentational conventions

The provisions of this standard are presented in roman (i.e. upright) type. Its recommendations are expressed in sentences in which the principal auxiliary verb is "should".

Commentary, explanation and general informative material is presented in smaller italic type, and does not constitute a normative element.

Contractual and legal considerations

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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1 Scope

This British Standard gives recommendations and guidance for the maintenance of low-voltage switchgear and controlgear having a rated voltage up to and including 1 000 V a.c. or 1 500 V d.c.

This standard is applicable to stationary and movable switchgear and controlgear with or without an enclosure. It is also applicable to switchgear and controlgear for use under special service conditions, possibly with additional recommendations, for example in ships and rail vehicles.

This standard also gives recommendations on safety precautions for personnel carrying out maintenance. Guidance on the levels of maintenance necessary for and also procedures for the maintenance of the principal components within equipment is included. Guidance is also given on the assessment of the on-going suitability of equipment.

It also gives recommendations on the direct replacement of parts and, where this is not possible, guidance on device substitution.

This standard is not applicable to switchgear and controlgear used in potentially explosive atmospheres.

NOTE Inspection and maintenance of electrical apparatus in explosive gas atmospheres is covered in BS EN 60079-17.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

BS 7671:2008+A2:2013, *Requirements for electrical installations – IET Wiring Regulations. Seventeenth edition*

BS EN 60422 , *Mineral insulating oils in electrical equipment – Supervision and maintenance guidance*

BS EN 60947-4-1:2010+A1:2012, *Low-voltage switchgear and controlgear – Part 4: Contactors and motor starters. Section 1: Electromechanical contactors and motorstarters*

BS EN 61439-1:2011, *Low-voltage switchgear and controlgear assemblies – Part 1: General rules*

BS EN 61439-2:2011, *Low-voltage switchgear and controlgear assemblies – Part 2: Power switchgear and controlgear assemblies*

BS EN 61439-3, *Low-voltage switchgear and controlgear assemblies – Part 3: Distribution boards intended to be operated by ordinary persons (DBO)*

BS EN 61439-4, *Low-voltage switchgear and controlgear assemblies – Part 4: Particular requirements for assemblies for construction sites (ACS)*

BS EN 61439-5, *Low-voltage switchgear and controlgear assemblies – Part 5: Assemblies for power distribution in public networks*

BS EN 61439-6, *Low-voltage switchgear and controlgear assemblies – Part 6: Busbar trunking systems (busways)*

IEC 60050-441:1984, *International Electrotechnical Vocabulary – Part 441: Switchgear, controlgear and fuses*