

Category 1 Standard

S1983

Maintenance Inspection Standard for Substation Domestic Installations

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1 Purpose

- 1.1 This standard defines the acceptable condition of substation domestic installations and associated items.

2 Scope

- 2.1 This standard is applicable to all relevant electrical equipment within London Underground (LU) Substations forming part of the domestic installation and is applicable throughout the service life of such equipment.
- 2.2 This standard details the minimum inspection and testing requirements, provides a reference to the required maintenance periodicities for electrical items and details a Minimum Acceptable Condition (MAC) rating scheme for substation domestic installations.
- 2.3 This standard replaces S1983 A1.

3 Requirements

3.1 General

- 3.1.1 All relevant safety procedures must be carried out in accordance with the LU Electrical Safety and Access Rules, including MSP-SRP-020 and MSP-SRP-025, before commencing work on any equipment.
- 3.1.2 All work shall at all times comply with the Electricity at Work Regulations.
- 3.1.3 This standard shall be read in conjunction with the manufacturer's operation and maintenance manual relevant to the individual item of equipment under examination.

3.2 Inspections and Testing

- 3.2.1 Appendix A details the minimum inspection and testing requirements.
- 3.2.2 Periodic inspection and testing shall be undertaken in accordance with the latest revision of BS 7671. An Electrical Compliance Certificate shall be provided for each installation as part of the maintenance activities. Any existing certificates shall be updated during inspections to ensure a complete set of documentation is maintained per substation location.
- 3.2.3 The required periodicities between maintenance and checking activities are listed in the Maintainer's Reference Document R2673.
- 3.2.4 The Maintainer shall retain the maintenance records, including the Electrical Compliance Certificates, which shall be available to substantiate that the periods between maintenance and checking activities, listed in the Reference Document R2673, are being complied with.

3.3 Minimum Acceptable Conditions (Defect Ratings)

- 3.3.1 The following Table 1 describes the state of an asset and how it relates to a Minimum Acceptable Condition rating as well as the actions expected if found for those undertaking inspections of the domestic installations:

MAC Rating	State of asset that this represents	Action expected if found
1	VERY MINOR DEFECT	Return to service and clear defect at next maintenance
2	MINOR DEFECT	May be returned to service, but defect to be cleared within 1 month
3	SERIOUS DEFECT	May be returned to service but defect to be cleared within 1 week
4	MAJOR DEFECT	Clear defect before returning to service
5	MAJOR DEFECT WITH IMMEDIATE SAFETY IMPLICATIONS	Clear defect before returning to service and provide detailed report to the Maintainer

Table 1 – Minimum Acceptable Conditions

- 3.3.2 Attachment B provides a sample of substandard conditions and consequential implications and is provided as guidance for those undertaking inspections of the domestic installations.

The ratings quoted are typical only and the rating assigned to a given defect may be increased or decreased by not more than one level from previous records at the discretion of the Maintainer.

4 Responsibilities

- 4.1 **The Head of Power Engineering** is responsible for the technical content of this standard. Any concessions in relation to this standard shall be directed to the Head of Power Engineering who has overall accountability for compliance with this standard. The Head of Power Engineering may request support from the other technical authorities when reviewing concessions or queries arising from the application of this standard.
- 4.2 **LU and LU Suppliers** shall be responsible for compliance with the requirements of this standard.
- 4.3 **Heads of Profession** are the LU technical authorities for each asset group, and shall be responsible for auditing technical compliance with this standard in accordance with the engineering asset grouping of LU standard 1-041 and with respect to the assurance of assets to which they are accountable for. They shall provide support to the Head of Power Engineering, if requested, with regard to any technical issues arising from concession requests or other queries to this standard.

5 References

5.1 References

References in the text are made to latest editions unless specific editions are cited.

Note: References to particular EU Directives and Regulations, Acts of Parliament, Statutory Instruments or Common Law are made only if the subject demands them. Users of Engineering standards are bound by all the relevant requirements of the law, regardless of whether or not there is any reference to them in the standards.

5.2 Statutory documents

Document no.	Title
SI 1989 No. 635	Electricity at Work Regulations 1989
HS(R)25	Memorandum of Guidance on the Electricity at Work Regulations 1989 HS(R)25