

Category 1 Standard

S1913 **Common and General Requirements for Fixed Installation Power Supply Equipment**

**(formerly Powerlink Technical
Specification SP80001 Rev 2)**

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MAYOR OF LONDON



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1 Purpose

- 1.1 The purpose of this LU Standard is to apply technical requirements for equipment and systems on the LU power system through the inclusion of a technical specification, previously owned and managed by the Power Service Contractor, UK Power Network Services (UKPNS) Powerlink, as an attachment to this standard.

2 Scope

- 2.1 This Standard applies to equipment and systems on the LU power system.

3 Requirements

- 3.1 The mandatory requirements of this standard are set out in Section 7 as an attachment to this document.
- 3.2 Where an attachment refers to the 'Contractor' it should be taken to mean LU and LU Suppliers following the termination of the Power Service Contract.
- 3.3 Where the attachment refers to the 'System' it should be taken to mean the LU power system including its associated SCADA system and the operational properties.

Note: It is the intention to fully re-work this LU standard into the standards format over a period of time. While the content of the ex-Powerlink specification should not conflict with the remainder of the LU standards suite, should any discrepancies occur, these should be brought to the attention of the LU technical authority.

4 Responsibilities

- 4.1 **The Head of Power Engineering** is responsible for the technical content of this standard. 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 S1041 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 Supporting information

5.1 Background

- 5.1.1 From the 16th August 1998 through to the 15th August 2013 the LU power system was operated, maintained, renewed and upgraded by UKPNS Powerlink under the Power Services Contract. The contract was a Private Finance Initiative contract where UKPNS Powerlink were responsible for setting the detailed technical requirements for the LU power system.
- 5.1.2 At the start of the Power Service Contract on 16th August 1998 LU transferred its detailed technical standards for the LU power system to UKPNS Powerlink. Powerlink has owned and managed these technical standards as Powerlink technical specifications for the duration of the Power Service Contract.
- 5.1.3 The Power Service Contract ceased on the 16th August 2013 and the UKPNS Powerlink technical specifications for the LU power system were transferred back into LU as Category 1 standards.

Note: At the time this standard was produced, it was deemed necessary to utilise a non-standard for standard format. This however, does not diminish the mandatory requirements contained within the attachments.

5.2 Safety, Environment and Customer Considerations

- 5.2.1 Safety, environment and customer considerations relevant to this engineering standard are covered within the text of the attachment.

6 References

6.1 References and Abbreviations

- 6.1.1 Where references and abbreviations are used in this engineering standard they are given within the text of the attachment.

6.2 Definitions

- 6.2.1 Where definitions are used in this engineering standard they are given within the text of the attachment.
- 6.2.2 The following topic specific definitions are created:
- a) Within London Underground's Glossary of Terms (1-622)
(a Category 1 Standard);

Term	Definition	Source
LU	London Underground is the operating company of the former London Underground Limited.	a
Supplier	Supplier to London Underground, the primary organisation or individual that is selected to deliver a product, service or facility to London Underground and contracting directly to London Underground. This includes Consultants, Contractors, Infracos and PFI Contractors and excludes organisations or individuals selected by and contracting directly to them.	a



6.3 Person Accountable for the Document

Person accountable for the document
Phil Carmichael - Head of Power Engineering

6.4 Document History

Issue no	Date	Changes	Author
A1	Aug 2013	Incorporation of UKPNS Powerlink technical specification SP80001 Rev 2 as Category 1 LU standard following the termination of the Power Services Contract as per DRACCT No. 01934. No technical requirements have been changed.	G Bloch



7 Attachment - Technical Specification SP80001 Rev 2 (Ex Powerlink)

1 Scope

This standard applies to all power supply equipment to be connected into existing and new London Underground power systems of 400V rating and above together with associated control, indication and protection equipment. Signalling power supply systems are included but not the signalling equipment covered by LUL Standards numbered 1-193 through to 1-201.

Cabling and wiring external to equipment together with site installation works are excluded.

This standard shall be read in conjunction with 1-125.

This standard supersedes SP80001 v1.

Where there is any conflict between Clauses of this document, and individual specifications, the individual Specification shall take precedence. In the event of doubt, consult Powerlink Standards Manager¹.

For the avoidance of doubt, this Specification need not be applied to “off-the-shelf” or catalogue-list equipment, which is not fixed installation power supply equipment, e.g. standard ventilation plant, domestic appliances, or building management systems. Safety requirements of this Specification must be properly considered and good engineering practice applied. This qualification does not grant exemption from compliance with electrical safety regulations. Main items of substation plant, and bespoke control panels built specifically for use within a substation must comply with this Specification.

2 References

The text of this document cites other documents that provide information or guidance. These are listed in attachment 1.

3 Abbreviations

Special abbreviations used within the engineering function are listed in LUL Standard 1-622.

The term “Powerlink” refers to EDF Energy Powerlink.

Other abbreviations are detailed in individual specifications.

¹ Note: Until all relevant Technical Specifications have been re-written to omit Standard Clauses of this document, similar clauses to those contained in this Document may be present in those Specifications; in accordance with this clause, the individual document takes precedence.



4 Definitions

Terms used within the engineering function are defined in LUL Standard 1-622

Terms not defined in LUL Standard 1-622 shall be defined as in BS 7671.

The technical definitions given in the European, International and British Standards referred to herein or in Powerlink specifications apply to this specification together with the following:

Equipment	Equipment including all component parts, cables, accessories and appliances.
European Standard	A standard published by the European Committee for Standardisation or by the European Committee for Electrotechnical Standardisation. Its alphanumeric identity is prefixed by EN.
International Standard	A standard published by the International Electrotechnical Commission. Its alphanumeric identity is prefixed by IEC.
Power Service Contract	The contract awarded by LUL to Powerlink to deliver low voltage three phase and single phase power; dc power; signalling equipment power; low voltage dc power; Docklands Light Railway high voltage a.c. power; emergency power; and compressed air to prescribed delivery points.
Powerlink Operating Instruction	A document published by Powerlink which provides guidance on the application of the Safety Rules and to direct policy on operational limits and procedures.
Powerlink Specification	A document published by Powerlink which mandates technical and associated requirements for equipment for use on The System. Its alphanumeric identity commences with SP8.
Powerlink Work Instruction	A document published by Powerlink which describes the methods, tools and detailed procedures for the execution of physical work or inspection of Powerlink plant, equipment and buildings.



The System

System means the electrical conductors and apparatus for the distribution and control of electricity from any Bulk Supply Points (and for the avoidance of doubt, excluding any assets belonging to any Distribution Network Operator) and from and including the Generating Stations to and including the Delivery Points and for the production of compressed air and includes the Electrical Control Equipment, the interests in and rights in respect of the Properties granted under the Power Service Contract (PSC) but excludes LUL's Distribution System, the IT Systems (other than the SCADA System) and the Telephony Systems the Waterloo and City Line, the District Line from Putney Bridge to Wimbledon and Gunnersbury to Richmond, the Bakerloo Line from Queens Park northwards and the interface with the System for each such part as is set out in the Performance Specification and as altered by the Contractor, any Variation, any Known Third Party Works or adoption of Third Party Works.

5 Introduction

This document defines the contractual, constructional, electrical and environmental withstands requirements for all power supply equipment described in Clause 1 of this document.

This document has been created to update and incorporate within one standard previously existing requirements from multiple sources.

5.1 Responsibilities

There are no positions of responsibility specifically stated in this document.

6 PSC Compliance – Obligations of Sub-Contractor(s)

Parties, who have an applicable contract with Powerlink, shall assist Powerlink in its duty to comply with the Power Services Contract (PSC) (LUL Standard 1-105). The provisions of this, and other EDF Energy Powerlink specifications, define the functions of the Equipment to ensure that The System and installation(s) incorporating such equipment(s) comply with all relevant requirements, including performance requirements, of LUL Standard 1-105.

7 Safety Considerations

Power supply equipment which does not comply with this standard may endanger the safety and security of the London Underground railway system and the staff, passengers and members of the public within its environs.

Equipment shall be designed, manufactured and installed in such ways that its correct usage and any foreseeable failure shall not cause a hazard to staff, passengers or members of the public.

Equipment failing to comply with this standard may contravene the Electricity at Work Regulations 1989 and the Health and Safety at Work etc. Act 1974.