

Information for users

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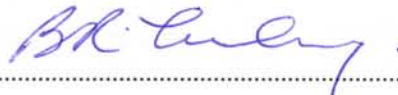
Ref:	NR/L3/ELP/27406
Issue:	2
Date:	3 December 2011
Compliance date:	3 March 2012

Level 3

Engineering Deliverable Requirements for Electrical Power Asset Design

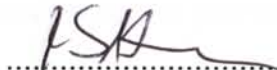
Endorsement and Authorisation

Endorsed by:



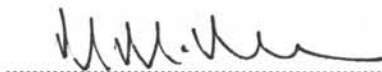
Barry Lumley, Working Group Chair

Authorised by:



Richard Stainton, Steering Group Chair

Accepted for issue by:



Mick McManus, National Standards Manager

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User information

This Network Rail standard contains colour-coding according to the following Red–Amber–Green classification.

Red requirements – *No deviations, could stop the railway*

- **Red requirements shall** always be complied with and achieved.
- Red requirements shall be presented in a red box **with the word “shall” or expressed as a direct instruction**.
- Accountability for the efficacy of red requirements lies with the Professional Head/Standard Owner.
- Red requirements are monitored for compliance.
- Corrective actions shall be enforced if deviations are discovered through functional checks (e.g. engineering verification visits, audit or Operations Self-Assurance).

Amber requirements – *Controlled deviations, approved risk analysis and mitigation*

- **Amber requirements shall** be complied with unless deviation has been approved in advance.
- Amber requirements shall be presented with an amber sidebar **and with the word “shall” or expressed as a direct instruction**.
- Accountability for the efficacy of these requirements lies with the Professional Head/Standard Owner, or their nominated Delegated Authority.
- Amber requirements are monitored for compliance.
- Deviations **may** be permitted. Deviations are approved by the Standard Owner or through existing Delegated Authority arrangements.
- Corrective actions shall be enforced if **non-approved** deviations are discovered through functional checks (e.g. engineering verification visits, audit or Operations Self-Assurance).

Green – *Guidance*

- Guidance is based on good practice. Guidance represents supporting information to help achieve **Red** and **Amber** requirements.
- Guidance shall be presented with a dotted green sidebar **and with the word “should” (usually in notes) or as a direct instruction**.
- Guidance is **not mandatory** and is not monitored for compliance.
- Alternative solutions may be used. Alternative solutions do not need to be formally approved.
- Decisions made by a competent person to use alternative solutions should be backed up by appropriate evidence or documentation.

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Issue record

Issue	Date	Comments
1	June 2011	First Issue
2	December 2011	Addition of remaining modules C to L and amendments to modules A & B. Minor update to main specification.

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 3 March 2012.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 3 (Option Selection) to continue to comply with the issue of any relevant Network Rail standards current when GRIP Stage 3 was completed and not to comply with requirements contained herein, unless stipulated otherwise in the scope of this standard.

Reference documentation

NR/L2/INI/02009	Engineering Management for Projects
NR/L2/ELP/27311	Engineering Assurance Requirements for Design and Implementation of Electrical Power Engineering Infrastructure Projects
NR/L2/SIG/11201	Engineering Assurance Arrangements for Signalling Engineering Schemes and Services
NR/L2/TEL/30022	Engineering Assurance Arrangements for Communications Engineering Schemes and Services

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1 Purpose

The purpose of this specification is to provide the requirements for the Engineering Deliverables required to support the stages of assurance defined in NR/L2/ELP/27311.

2 Scope

This specification applies to all design work associated with the renewal, enhancement and extension, including temporary works, of the following elements of Electrical Power infrastructure: DNO/TNO incoming supply equipment, HV power supply distribution systems, HV and DC traction power supply systems and all associated subsystems, overhead and third rail contact systems, signalling power supply systems, points heating systems and all other fixed plant systems.

This specification does not apply to electrification and plant asset routine maintenance or testing activities, work carried out under emergency conditions, or project works that can be carried out solely within the parameters of the maintenance risk manual.

3 Definitions and Abbreviations

AC Bonding Plan	A drawing which records the electrical bonding necessary for both signalling and electrification purposes.
Access Arrangements	The safe means of getting to a location or site for pedestrians and vehicles.
Agreed Deviations	A change in the detailed design endorsed by Network Rail
Alternate Feeding Diagrams	A series of schematic diagrams describing the arrangements for feeding the traction power supply system when there is a loss of incoming power supplies from the TNO/DNO.
Ancillary Services	Ancillary equipment and systems to support the principal equipment installation. Includes heating, lighting, ventilation, batteries and chargers and low voltage distribution equipment.
As Built	Design documentation describing the infrastructure that has been physically installed.
Balance Weight Settings	Recorded information indicating the position of the balance weight assembly in relation to the ambient temperature at the time the information was obtained. Required for correct installation.
Basic OLE Design Principles	Outline of the technical specification, e.g. earthing and bonding system, OLE type and associated basic design range installed to meet the necessary line speed.
Black Start	The instantaneous energisation of the entire system from a complete shut down.