

Electrical Protective Provisions for Electrified Lines

Synopsis

This document mandates the design requirements for the avoidance of direct contact between persons and live parts of electrification equipment and of **electrical** equipment on trains.

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Electrical Protective Provisions for Electrified Lines

Railway Group Standard

GE/RT8025

Issue One

Date October 2001

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Part A

A1 Issue Record

This document will be updated when necessary by distribution of a complete replacement.

Issue	Date	Comments
One	October 2001	Original document.

A2 Implementation of this document

The publication date of this document is 6 October 2001.

This document comes into force on 1 December 2001.

The dates by which compliance with the requirements of this document is to be achieved are set out in Part B2. Where those dates are later than the date on which this document comes into force, this is to give Railway Group members additional time to plan and commence implementation so as to achieve full compliance by the dates set out in Part B2.

This document supersedes the following Railway Group Standards, either in whole or in part as indicated:

Railway Group Standard	Iss. No.	Title	RGS sections superseded by this document	Date(s) as of which sections are superseded
GM/TT0101	1	Clearance requirements for electrified lines and T&RS	All clauses relating to infrastructure and stations All clauses relating to trains	3 August 2002 4 October 2003
GC/RT5161	1	Station platform design requirements	9.4	3 August 2002 (already withdrawn)
GC/RT5203	2	Infrastructure requirements for personal safety in respect of clearances and access	10	3 August 2002 (already withdrawn)

GM/TT0101 issue 1 is withdrawn with effect from 4 October 2003

A3 Scope of Railway Group Standards

The overall scope of Railway Group Standards is as specified in Appendix A of [GA/RT6001](#). The specific scope of this document is set out in Part B2.

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A4 Responsibilities

Railway Group Standards are mandatory on all members of the Railway Group * and apply to all relevant activities that fall into the scope of each individual's Railway Safety Case. If any of those activities are performed by a contractor, the contractor's obligation in respect of Railway Group Standards is determined by the terms of the contract between the respective parties. Where a contractor is a duty holder of a Railway Safety Case then Railway Group Standards apply directly to the activities described in the Safety Case.

* The Railway Group comprises Railtrack PLC, Railway Safety, and the train and station operators who hold railway safety cases for operation on or related to infrastructure controlled by Railtrack PLC.

Railtrack PLC is known as Railtrack.

A5 Health and safety responsibilities

In issuing this document, Railway Safety makes no warranties, express or implied, that compliance with all or any documents published by Railway Safety is sufficient on its own to ensure safe systems of work or operation. Each user is reminded of its own responsibilities to ensure health and safety at work and its individual duties under health and safety legislation.

A6 Technical content

The technical content of this document has been approved by:

Peter Williment, Principal Electrification Engineer, Railway Safety
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A7 Supply

Controlled and uncontrolled copies of this document may be obtained from the Industry Safety Liaison Dept, Railway Safety, Evergreen House, 160 Euston Road, London NW1 2DX.

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Part B

B1 Purpose

This standard mandates the **electrical** protective provisions to prevent injury to persons from direct contact with live parts of electrification equipment and of **electrical** equipment on trains.

B2 Application of this document

B2.1 To whom the requirements apply

This document contains requirements that are applicable to the duty holders of the following categories of Railway Safety Case:

- a) infrastructure controller
- b) station operator
- c) train operator

Under the Railways (Safety Case) Regulations 2000, the duty holder at a station (as defined in those Regulations) is responsible for ensuring that the requirements of Railway Group Standards are complied with. At a station, contractual arrangements (including a lease) do not of themselves relieve the duty holder of his obligations under those Regulations.

B2.2 Compliance requirements

B2.2.1 Infrastructure

This document applies to all electrified lines on Railtrack controlled infrastructure, using Railtrack standard systems of electrification, namely 25kV AC or 1500V DC overhead line electrification, or 750V DC top contact third rail electrification (which includes systems where a 'fourth rail' is electrically connected to the running rails).

The requirements of this document are mandatory for new Railtrack controlled infrastructure and for alterations to existing Railtrack controlled infrastructure for which approval in principle is given on or after 3 August 2002.

When approval in principle is given before 3 August 2002, but the infrastructure has not yet been brought into service, the design shall be reviewed and, where reasonably practicable, brought into line with the requirements of this document. Where it is not reasonably practicable to do so, the situation shall be regularised by means of a non-compliance or derogation (see section B2.2.4).

Action to bring existing infrastructure into compliance with the requirements of this document is not required provided that the infrastructure was compliant with the previously applicable standards.

B2.2.2 Stations

This document applies to all stations on Railtrack controlled infrastructure, using Railtrack standard systems of electrification, namely 25kV AC or 1500V DC overhead line electrification, or 750V DC top contact third rail electrification (which includes systems where a 'fourth rail' is electrically connected to the running rails).

The requirements of this document are mandatory for new stations and for alterations to existing stations for which design commences on or after 3 August 2002.

When design commences before 3 August 2002, but the station (or station modification) has not yet been brought into service, the design shall be reviewed and, where reasonably practicable, brought into line with the requirements of this document. Where it is not reasonably practicable to do so, the situation shall be regularised by means of a non-compliance or derogation (see section B2.2.4).

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Action to bring existing stations into compliance with the requirements of this document is not required provided that they were compliant with the previously applicable standards.

B2.2.3 Trains

This document applies to all electric trains which will operate on Railtrack controlled infrastructure, using Railtrack standard systems of electrification, namely 25kV AC or 1500V DC overhead line electrification, or 750V DC top contact third rail electrification (which includes systems where a 'fourth rail' is electrically connected to the running rails).

The vehicle design requirements mandated in this document are to be complied with by all vehicles of previously uncertificated designs with a Certificate of Conformance for Vehicle Design signed on or after 4 October 2003. In addition to this the design requirements shall be complied with by any future vehicles, built to the same design as a vehicle already having Engineering Acceptance, which enter service on Railtrack controlled infrastructure on or after 7 October 2006.

The requirements of sections B4.8 and B5.6 of this document are within the scope of Vehicle Acceptance Body approval.

Action to bring existing trains into compliance with the requirements of this document is not required provided that they were compliant with the previously applicable standards.

Where trains are being modified in the area covered by the scope of this document, the design shall be reviewed and where practicable brought into line with the requirements of this document.

B2.2.4 General compliance requirements

Until the compliance dates, or the date by which compliance is achieved (if earlier), the applicable requirements of the predecessor documents shall continue to be met (see Part A for details).

After the compliance dates, or after the date by which compliance is achieved (if earlier), Railway Group members shall not deviate from the requirements set out in this document.

Where it is considered not practicable, or not reasonably practicable, to comply with the requirements set out in this document, authorisation not to comply shall be sought in accordance with [GA/RT6001](#), [GA/RT6004](#) or [GA/RT6006](#).

B2.3 Exclusions from the application of this document

Electrical equipment in a secured area, building or compound under the control of one Railway Group member is outside the scope of this document, eg overhead line equipment in a train maintenance depot, or a track sectioning location within a fenced compound.

B2.4 Related requirements in other documents

These are set out in a number of documents as detailed below:

- The requirements for electrified lines traction bonding are set out in [GL/RT1254](#).
- Instructions for the protection of persons working on or near to 25kV AC overhead electrified lines are set out in [GE/RT8024](#), and Rule Book Section Z Part (i) ([GO/RT4100/1](#)).
- Instructions for the protection of persons working on or near to 1500V DC overhead electrified lines are set out in Railtrack local instructions.
- Instructions for the protection of persons working on or near to 750V DC third rail electrified lines are set out in [GO/RT3091](#), except for the Liverpool area and the Northern City Lines where Railtrack local instructions apply.