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**RAILTRACK**  
*Safety & Standards*

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**Briefing Notes for:**            **Signalling Design Production**  
**Document No:**                GK/RT0207                    **Issue:**    I  
**Subject Committee(s)**        **TC&C**  
**Issue date:**                    **05/08/2000**  
**Initial Compliance Date**      **07/10/2000**

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**Briefing information for:**

- Production of Railway Group Standard GK/RT0207, to supersede GK/RT0201
- Transfer to Railtrack Line of various Railway Group Standards and Codes of Practice relating to signalling design

**I.    Production of GK/RT0207**

The following information relates to the production of GK/RT0207, which supersedes GK/RT0201. A number of other Standards are superseded as well, although they are being transferred to Railtrack Line. Specific points to note in respect of GK/RT0207 are set out below.

I.1    The fundamental requirements of GK/RT0201 have been incorporated into GK/RT0207, as have the key requirements from GK/RT0004, GK/RT0110, GK/RT0115, GK/RT0116, GK/RT0202 and GK/RT0205. These key requirements cover the following areas:

- **Design management**
  - Management systems and procedures
  - Competency
  - Control of organisational interfaces
  - Changes to standards during project life
- **Design development**
  - Conceptual design
  - Technical specifications
  - Site assessments and surveys
  - Correlation
  - Design production
  - Provision of ancillary information
  - Design presentational standards
- **Design verification**
  - Principle
  - Verification process
- **Design approval**
  - Approval in principle
  - Technical approval of design details for construction purposes
- **Modifications to designs**

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- General requirements
- Records of design modification proposals and requests
- **Control of design documents and software/data**
  - Identification of design documents and data
  - Control of issue of design documents and software/data
  - Control, updating and issue of records
- **Assessment and demonstration of safety**
  - General requirements
  - Records of safety analysis
  - Review and endorsement of safety analysis
- **Use of design support tools**
  - Software-based design tools
  - Other design support tools
- **Special cases of design production**
  - Projects commissioned in phases or stages
  - Permitted variations to the order of design activities
  - Temporary work
  - Recovery of redundant wiring and equipment

I.2 The scope statement in GK/RT0207 has been altered compared with that which appeared in GK/RT0201. The significant differences are as follows:

- GK/RT0201 included the design of train-borne signalling equipment whereas GK/RT0207 excludes such design activities. Historically, the sort of design processes described in GK/RT0201 and its predecessors have never been applied to the train-born elements of signalling systems, and indeed probably would not be appropriate.
- GK/RT0201 included all forms of signalling systems, including cab signalled systems. GK/RT0207 restricts its scope to systems that use lineside signals as requirements in GK/RT0201 are not considered appropriate for cab signalling.
- Minor design work and like-for-like replacement, which were originally mentioned within the main text of GK/RT0201, but effectively gave permission for the design processes not to be applied, have now been removed from the scope.

I.3 Significant differences between GK/RT0207 and GK/RT0201 are:

- a) The requirement for a Responsible Design Engineer is no longer explicit. The requirements for appropriate organisational structures and clarity of responsibilities is, however, strengthened.
- b) An explicit requirement has been included for signalling design proposals, the track layout and proposed operational use to provide **together** an acceptable level of safety. Where it is not possible to provide signalling for a proposed layout and method of working that is acceptably safe, the layout and method of working have to be reviewed and modified if necessary. The presumption is no longer that any given track layout can be signalled safely.
- c) The requirement for an Outline Project Specification is no longer explicit, although the core safety-related elements that were features of an OPS are retained as part of the conceptual design requirements. Thus, in effect, the material that would formerly have been produced in an OPS still has to be produced, albeit not

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necessarily in the form of an OPS.

- d) The sections on site assessments and correlation have been expanded to include all the core requirements in GK/RT0115 and GK/RT0116. The list in GK/RT0201 of exactly what to correlate has been omitted, however.
- e) The requirement for a Design Specification is no longer explicit. However, the new Standard mandates the production of safety plans (or method statements) for the signalling design phase of each project and, where necessary, technical specifications which amplify the material in the conceptual design documents. Together these fulfil the requirements originally specified in the form of a design specification.
- f) The material on occupational health and safety and the CDM Regulations has been removed because it is out of scope so far as Railway Group Standards are concerned.
- g) GK/RT0207 permits some design related details to be omitted, subject to constraints. This reflects current design practice, but the wording of the Standard does require designers to think more carefully about the “completeness” of their design so far as installers are concerned.
- h) The general requirements of GK/RT0004, GK/RT0202 and GK/RT0205 have been incorporated into a section on design presentational standards. Some of the more prescriptive material in GK/RT0201 about use of colour, fonts, drawing sizes etc., has been removed as being unnecessarily prescriptive.
- i) The requirements for approval of designs have been rewritten in a simpler form, to make clear who is responsible for what.
- j) Although the requirement has been retained for one design to be commissioned and the records updated before another design using the same records commences (with certain exceptions permitted), there is no requirement for the design authority to retain the source records as a means of achieving this.
- k) The explicit requirements for some supporting documents, such as Approvals and Issue Records (AIR), certificates and closure lists to be produced has been removed. However, in each case there are mandatory clauses which are the higher level requirements previously met by the existence of those supporting documents.
- l) Requirements relating to the management of infrastructure records have largely been removed, as they duplicate areas covered by GI/RT7001.
- m) Overlapping and parallel design work has been absorbed into the section on “special cases of design production”.
- n) Much of the detail about system safety and dependability has been removed. A lot of this material was informative, and to some extent duplicated that in GK/RT0206. This latter Standard is due to be revised, and the opportunity will be taken to consider what, if any, should be incorporated from GK/RT0201.
- o) Greater emphasis has been given to the identification and regularisation of non-compliances against Railway Group Standards during the design process.

I.4 The reason for the change of number from GK/RT0201 to GK/RT0207 is to enable five related Railway Group Standards, all of which are in various stages of revision/production, to be consecutively numbered:

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GK/RT0206	Safety requirements for S&T systems
GK/RT0207	Signalling design production
GK/RT0208	Installation of S&T Systems and Equipment
GK/RT0209	Testing of signalling systems
GK/RT0210	S&T Asset Management

1.5 GK/RT0004, GK/RT0110, GK/RT0115, GK/RT0115, GK/RT0116, GK/RT0201, GK/RT0202, GK/RT0205, GK/RC0701 and GK/GN0600 are all being transferred to Railtrack Line's ownership in conjunction with the production of GK/RT0207. Each of the transferred documents has been reviewed by Railtrack Line to check whether any revisions are required. This review included consideration of the impact of the new GK/RT0207.

## 2. Transfer to Railtrack Line of various Railway Group Standards and Codes of Practice relating to signalling design

2.1 Since mid-1998 Railtrack Safety and Standards Directorate, together with Railtrack Line, has been developing proposals and plans for the transfer of a number of documents (both mandatory Standards and Codes of Practice) to Railtrack Line. Once in Railtrack Line's ownership, they will be reproduced in "Line" format, rather than "Railway Group Standard" format.

2.2 The reasons for the transfer were set out in a consultation document circulated to the industry in the autumn of 1998. The proposals were broadly supported by the industry, and by HMRI. The main reasons for the transfer (as relevant to signalling design work) are that:

- The subject matter to be transferred is not properly within the scope of Railway Group Standards
- By retaining unnecessary mandatory material at Railway Group Standard Level, the document would not be compliant with the Railway Group Standard Code. It also has the effect of legally obliging Railtrack Line to comply with the requirements.
- The existence of detailed material on any given subject at both Railway Group Standard and Railtrack Line levels (which happens at present) is confusing to suppliers.
- It is generally unnecessary for S&SD to own codes of practice that apply only to the activities of Railtrack Line. Railtrack Line should own those codes of practice themselves, and control/encourage their use through contracts with their suppliers. By contrast, codes of practice are helpful at S&SD level where they help to promote uniformity of practice across the many members of the Railway Group.
- The transfer of material will, in the longer term assist in the production of a better structured suites of standards at both Railway Group Standard and Railtrack Line levels.

2.3 The Standards to be transferred include:

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- A number of Standards and Codes of Practice relating to Signalling Design
- The Signalling Installation Handbook
- A number of Standards and Codes of Practice relating to Signalling Works Testing
- A number of Standards relating to signalling asset management
- A number of Standards and Codes of Practice relating to train detection

The change addressed by this briefing note relates to the first of these, namely signalling design.

- 2.4 The particular design Standards and Codes of Practice which are the subject of transfer are:

GK/RT0004	Symbols for use on signalling plans and sketches
GK/RT0110	Outline Project Specifications for signalling schemes
GK/RT0115	Correlation of signalling records before design alterations
GK/RT0116	Assessment of signalling systems before design alterations
GK/RT0201	Signalling Design Production
GK/RT0202	Signalling design: control tables
GK/RT0205	Symbols for signalling circuit diagrams
GK/RC0701	Signalling Design: Production Guidance
GK/GN0600	Signalling and Operational Telecomms Design: Technical Guidance

- 2.5 The associated Handbook, GK/RH0710, also ceases to be a Railway Group Standards document.
- 2.6 Railtrack Line will initially simply “re-badge” the documents when they take ownership, so that the contents remain essentially unchanged, but the documents look like, and are numbered as, Railtrack Line Standards and Codes of Practice.
- 2.7 Railtrack Line will ensure that all the material currently in the Railway Group Standard suite of design Standards is retained when transferred into their ownership. Most of the documents will become “Code of Practice” status, and Railtrack Line will have in place procedures to control strictly any variations to those Codes of Practice.
- 2.8 The detailed requirements in the new Railtrack Line documents will be compliant with the mandatory requirements of the new GK/RT0207, although in practice this is not likely to require any significant change from the requirements currently expressed in the S&SD documents which are to be transferred.
- 2.9 All the new Railtrack Line documents will be available on the Line CD-ROM from the time that the relevant Railway Group Standard documents are removed from the S&SD CD-ROM, so there will be no loss of continuity of information or requirements.

## COMPLIANCE REQUIREMENTS

Compliance is required by 7<sup>th</sup> October 2000.