

Ref:	NR/L2/SIG/30009/E420
Issue:	02
Date:	7 March 2015
Compliance date:	6 June 2015

Level 2

Overrun Detection and Management

Endorsement and Authorisation

For endorsement and authorisation, please refer to
NR/L2/SIG/30009

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Published and Issued by Network Rail, 2nd floor, One Eversholt Street, London. NW1 2DN.



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User information

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

Red requirements – *No variations, 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 variations, 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
01	Sept 2010	First Issue
02	March 2015	Update following 'Post Victoria' implication issues. Update to achieve data simplification and simplification of operation processes. Includes provision of control system level applications.

Compliance

This Network Rail standard is mandatory and shall be complied with by Network Rail and its contractors if applicable from 6 June 2015.

When this standard is implemented, it is permissible for all projects that have formally completed GRIP Stage 4 to continue to comply with the Issue of any relevant Network Rail Standards current when GRIP Stage 3 was reached and not to comply with requirements contained herein, unless the designated Standard Owner has stipulated otherwise in the accompanying Briefing Note.

Reference documentation

GE/RT8071	Control Facilities for use during Lineside Signalling Failures
GI/RT7006	Prevention and Mitigation of Overruns – Risk Assessment
NR/L2/SIG/11201	Signalling Design Handbook
RT/E/G/00028	General Guidelines on Train Protection & the Provision of Signalling
NR/L2/SIG/19803	Signalling Scope Of Work For Switch And Crossing Renewal Projects
NR/L2/SIG/30035	Signalling Scheme Plan Technical Approval Process
NR/L2/SIG/30009/E450	Signalling Principles Handbook – Overlap Proving
RT/E/PS/00801	Requirement Specification for TDM Systems
NR/SP/SIG/11130	Requirements for the provision of SPAD alarms at Signalling Control Centres
NR/SP/SIG/10131	Requirement Specification for 'Signals On' Controls for SSI Schemes
DIS 193 [and previously DIS 183 & 138]	Overrun Detection [The SSI application Discussion Paper relating to Overrun as presented to, yet to be accepted and released for generic use by SSIAG]

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1 Purpose

This level 2 standard forms part of the Signalling Principles Handbook (SPH: NR/L2/SIG/30009) and is to be read in conjunction with the other modules of the handbook and the reference documentation.

This module details Network Rail's policy on the provision of SPAD alarms, the detecting of overruns and the controls to be applied to protect the overrun. These principles have been endorsed by operations and risk specialists and shall be applied for new and altered installations, wherever reasonably practicable.

This module comprises mandatory sections, statements of best practice (which shall be followed unless an alternative can be demonstrated to be beneficial to the company and no less safe), and guidance on historical practices which can be retained *only* in prescribed circumstances, see section 2.

2 Scope

These requirements apply to all alterations to signalling installations. A decision contrary to this module specifically requires the approval of Network Rail's Professional Head (Signals and Controls). The provision of protection from overruns is mandatory except where:

1. minor alterations or enhancements are made to existing signals which do not otherwise materially relate to the likelihood or consequence of overrun;
2. the works are temporary and short duration in nature (e.g. stageworks) and are low risk;
3. an assessment of the intended operational use demonstrates that the benefit of detecting and acting on an overrun is not justified (typically low speed layouts of 15mph);
4. the works consist of a "like for like" renewal (overall footprint of the S&C and its associated signalling is unaffected) of a junction in accordance with NR/L2/SIG/19803;
5. the works consist of a "modern equivalent form" (point operating mechanism is to be replaced or the rail section is changed) renewal of a junction in accordance with NR/L2/SIG/19803.

Cases 1, 4 and 5 above do not require ANY change to the pre-existing form of overrun detection.

Signals which are mechanically operated (wires & pulleys) do not require any form of detection of overrun.

Simple Overrun Management shall be provided for small-scale alterations to existing installations on the grounds that Overrun Management would be disproportionate. Cases 2 and 3 require consideration of *Simple Overrun Detection* as a minimum.

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Overrun Management shall be adopted when power operated signals are newly provided or substantially altered:

- a) all re-signalling projects should adopt a solution where the primary data resides in the control system, reflecting migration to ROCs and future Traffic Management;
- b) all re-control projects should adopt a solution where the primary data resides in the control system;
- c) all re-lock projects should formulate and submit their case for their chosen solution [noting that any new data will readily accommodate the form of Overrun Management described in this Module], see section 6.1 & 6.2;
- d) *panel-controlled* route relay (RRI) and computer based solutions can adopt an interlocking or control system solution taking account of how SPAD alarms are to be provided and should formulate and submit their case, see section 6.1.

The decision on the method of protection from overrun shall be taken before achievement of AiP is granted: each project shall consider the extent of compliance to this module of SPH which shall be recorded within the assessment required by NR/L2/SIG/30009/E810. This shall particularly include the capability for detecting SPAD at signals and whether data or circuitry should be removed from existing interlockings due to the double handling of signal replacement.

All projects and especially those which adopt a risk-based approach (items 2 and 3 above) are required to agree their approach with the Major Scheme Review Panel (NR/L2/SIG/30035) and to agree onward submission to the Professional Head (Signals and Controls) to obtain any required deviations¹ to this Signalling Principles Handbook standard.

The circumstances when SPAD alarm systems shall be provided² are described in section 5.3.

To support one of the requirements of the Ladbroke Grove accident inquiry³ an overrunning train shall not apply any additional locking to points; see also section 8.

The associated requirements for point flank protection are described in NR/L2/SIG/30009/E710 [Notice Board 125/3 provides guidance on sufficiency].

¹ These shall form the record of justification for the approach taken.

² Recommendation 47 of the Ladbroke Grove Rail Part 1 Report, ISBN 0 7176 2056 5 dated 2001

³ Recommendation 48 of the Ladbroke Grove Rail Part 1 Report, ISBN 0 7176 2056 5 dated 2001