NetworkRail

Title:	Network Rail (Infrastructure) Ltd Health & Safety Management System
	Custodian : Group Safety, Technical & Engineering Director

Synopsis :

This document is an update of Network Rail (Infrastructure) Ltd.'s Health & Safety Management System as infrastructure manager of the mainline railway and operator of the managed stations.

Approval and authorisation :

Prepared by :

Ian Blanchard   Date :   25 May 2017
Health & Safety Management System Specialist

Approved by :

Allan Spence   Date :   25 May 2017
Head of Corporate Passenger and Public Safety

Authorised by :

Graham Hopkins   Date :   25 May 2017
Group Safety, Technical & Engineering Director

Network Rail (Infrastructure) Ltd. The Quadrant: MK | Elder Gate | Milton Keynes | MK9 1EN Tel: 020 7557 8000 Web: www.networkrail.co.uk
Registered Office: Network Rail, 2nd Floor, One Eversholt Street, London, NW1 2DN Registered in England and Wales No. 02904587
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Issue No.	Date	Comments
2.0	May 2007	New Document
2.1	February 2008	Updates to: H&S Policy Statement; VPF figure; table of Professional Heads; signal and telecoms engineering competence; Fitness to Work section; CDM responsibilities section; Structures section; Level Crossings section; Route Crime section; SPADs section; Weather section; Transport Operators section; Suppliers section; Change Control section in respect of Infrastructure, Rail Vehicle and Safety Critical Plant & Equipment; Accident Reporting and Investigation section.
2.2	April 2008	Updates to Transport Operators section.
2.3	October 2008	Maintenance Phase 2A / Engineering organisation changes.
2.4	October 2008	Updates to: Network Rail standards management – process requirements; Professional Heads.
2.5	April 2009	Updates to: Professional Heads; project safety and assurance requirements; leadership commitment and safety risk profile; safety enhancement fund reference; Level Crossing section; Route Crime section; SPAD section; include arrangements for rail mounted vehicles and plant and private wagon and locomotive owners; title of Chief Engineer to Director, Engineering.
2.6	November 2009	Updates to take account of: ERTMS; the implementation of the Process Led Organisation (PLO).
2.7	May 2011	Updates to: the definition of Network Rail Managed Infrastructure; title of Timetable Change Assessment Group to Timetable Change Assurance Group; title of Head of Operations to Director, Operational Services; VPF value for 2010/11; the frequency of SRM update; MBR references to Executive Review Meeting (ERM); reference to standard for competence specific medical requirements; reference the new NR Plant and Traction and Rolling Stock Policy; management of the Private Wagon Registration Agreements; Supplier section; the arrangements for audit of contractors; Design and Construction sections; the procedures referenced from the Managed Stations Manual; Consultation section; Safety and Welfare procedure; include summary of arrangements for complying with the requirements of the Common Safety Method (CSM) on Risk Evaluation and Assessment; take account of Devolution Phase 1.

Issue No.	Date	Comments
2.8	June 2011	Updates to post titles to take account of the Network Operations and Investment Projects organisational changes.
2.9	July 2011	Update to Chief Executive's Health & Safety Policy statement.
2.10	September 2011	Updates to VPF value; post titles to take account of the Telecoms Asset Management organisation changes; title of Director, Safety & Sustainable Development.
2.11	November 2011	Updates to take account of the Devolution Phase 2 and central Asset Management organisational changes.
3.0	February 2012	Updates to take account observations raised by ORR following stakeholder consultation in support of renewal of Safety Authorisation.
3.0	July 2012	Updates to take account of the Central Asset Management (Phase 1), Devolution (Phase 2), Project DIME (Phase 3) and Wessex Alliance (Phase 1) organisation changes – various clauses.
3.01	December 2012	Updates to take account of Asset Management changes and changes to Key Safety Posts. Updates to the content of the 'Construction' section to provide better clarity. Minor updates to take account of changes to management arrangements for Fenchurch Street station.

Issue No.	Date	Comments
3.02	December 2013	Updates to take account of post title changes in the Safety & Sustainable Development function.
		Updates to take account of Asset Management Services (AMS) changes and corresponding changes to Key Safety Posts.
		Change GRIP for Change reference to Managing Successful Programmes for Network Rail (MSP4NR).
		Network Operations – Introduction of Area Director post.
		Updates following a review of Professional Head (Asset-based) job descriptions and role, AMS Energy Services restructure, and Network Rail Telecom (NRT) introduction of Professional Head [Telecoms] and corresponding changes to Key Safety Posts.
		Updates to reflect 2013 amendments to ROGS.
		Updates to reflect introduction of new Sentinel and the withdrawal of the authority-to-work paper form.
		Updates to reflect the withdrawal of the Safety Tours standard NR/SP/OHS/040 Safety Tours and replacement with Leading Safety Conversations.
3.03	October 2014	Control Period 4 document links updated to signpost to Control Period 5 documents.
		General update to hyperlinks where required.
		Update of wording to align with OHSAS 18001 principles.
		Addition of CEO's Safety Vision.
		Updates to post titles and relevant activities, where positions have changed due to the Management Efficiency Programme organisational restructure.
		Updates to post titles and relevant activities, where positions have changed due to the Matrix Organisation organisational restructure.
		Removal of S&SD Executive Meeting and replaced with STE Business Performance
		Management Group Meeting.
		Update to include for Enterprise Risk Management.

Issue No.	Date	Comments
3.04	December 2014	Updated section 5 to include monitoring activities.
		Corporate Engineering Verification process updated to reflect current arrangements.
		Addition of the Integrated Plan to section 2.3.
		Near miss references updated to reflect Close Call arrangements.
		References to S&SD Executive meeting and STE Business Performance meeting changed to the National Safety, Health and Environment review meeting.
		Legal references changed to "current" rather than stating the year of the legislation.
		Track safety and access to infrastructure updated to reflect current arrangements.
		Reference to Network Rail's legal register has been added.
		Arrangements for the Network Rail Acceptance Panel (NRAP) updated to reflect current arrangements.
		Arrangements for Engineering Verification updated to reflect current arrangements.
3.05	August 2015	Updated section 2.1 to include the Safety Vision Addendum.
		Arrangements for the STE Matrix organisation have been added.
		Updated arrangements relating to Construction [Design and Management] Regulations (CDM) and new issue of NR/L2/OHS/0047.
		Reference to Network Rail's Crisis Management arrangements has been added.
		Reference to High Output and S&C arrangements has been added.
		Section 4.4 on 'Managing Standards' has been updated to reflect the Business Critical Rules Programme.
		Reference to non-Network Rail Managed Infrastructure arrangements has been added.
		Updated arrangements for Contractor Licencing have been added.

Issue No.	Date	Comments
3.06	March 2016	Link added to the business performance management framework (BPMF) page on Connect.
		Table updated to include specific job titles for Scotland Route.
		Updated to reference the new Level 1 Standard/Policy for Network Rail Risk Management.
		Reference added to the Alliance arrangements in the Scotland Route and the ScotRail Alliance handbook.
		Professional Head of Telecoms (NRT) added to table.
		Updated to include specific job titles for Scotland Route.
		Reference added to Technical Specifications for Interoperability (TSI's).
		New section added to reflect arrangements for Managed Stations Light.
		New section added to reflect arrangements for Mainline Operations.
		Updated to identify the integration with Planning and Delivery of Safe Work Programme.
		Added frequency of updates for the H&S Legal Register.
		Updated in line with new NRAP Standard for compatibility.
		Updated to reflect STE Matrix Phase 3 move of Principal Contractor Licencing to Safety, Technical and Engineering Function.
		Updated requirements in line with Safety Validation Standard update.
		Change of Panel name from Acceptance Panel to Assurance Panel.
		Removal of statement that governing protocols supersede application of CSM RA in Standards Change.
		Added references to Audit & Risk Committee.
		Clause amended to clarify arrangements for external assurance of Internal Audit team.
		Clause detail condensed by removal of non-essential information.
3.07	January 2017	Changes in support of Safety Authorisation and Safety Certificate submissions.

Issue No.	Date	Comments
4.0	May 2017	Changes consequent to affected parties consultation:
		Clarification on internal audit processes.
		Clarification on NCR close-out processes during functional audits.
		Clarification on review processes during functional audits.
		Reference included to recently issued 'Transforming Level Crossings. A long term strategy to improve safety at level crossings. Network Rail 2015-2040'.
		Clarification on the terminology agreed with DfT, ORR and industry stakeholders used in connection with level crossing misuse.
		Reference to AOCL+B type level crossings included.
		Clarity on the embracing of new technologies and the control of level crossings.
		Clarification on the management of risk by external parties.
		Reference included to recently issued NR/L2/OHS/157 – Health surveillance for silica and asbestos and the management of diagnosed occupational respiratory conditions, and clarity on supporting processes.
		Reference to recently revised NR/L2/OHS019 – Safety of people at work on or near the line, which emphasises planning to identify and agree risk management measures and hierarchy of controls.
		Clarity on the measures to deliver compliance with the Electricity at Work Regulations.
		Reference included to TfL, its subsidiaries and concession.
		Clarification of SPAD risk mitigation including reference to trainstops, ETCS (Indusi), both Automatic Train Protection systems used on the network and the European Train Control System, which are all examples of such engineering controls.
		Amendment of LU's National Operations Centre to the London Underground Control Centre (LUCC).
		Amendment of reference to key track standards, and that the full suite of 133 track standards will be converted to the Business Critical Rules framework.
		Amendment from 'Jubilee, District Lines' to 'Bakerloo, District Lines'.

Issue No.	Date	Comments
		Amendment to reflect organisational changes, including Managing Director, England & Wales, Scotrail Alliance Managing Director, and Chief Operating Officer.
4.1	July 2017	Changes consequent to Director of Risk, Analysis & Assurance reorganisation, and review of the Chief Engineer's organisation.
4.2	July 2017	Changes consequent to review by the Chief Engineer, STE
4.3	July 2017	Minor changes consequent to review by the Principal Standards and Controls Manager.
4.4	September 2017	Minor changes consequent to introduction of Route Supervisory Boards, and review of alliance partnering. Minor change consequent to Network Strategy and Capacity Planning organisation changes. Minor changes due to Digital Railway organisation review.
4.5	May 2018	Minor changes consequent to additional detail on Safety Critical Work Posts. Minor changes to take account of the introduction of Crossrail Elizabeth Line services, including interfaces and accountabilities. Minor organisational changes for the Managed Stations Lite Project on Wessex route, including the transfer of Clapham Junction and Guildford stations to Managed Station Lite status. Amendment to reference to NR Standard NR/L2/OHS/00102
4.6	August 2018	Minor change as consequence of CSM RA review by Controlled Publications Service. Minor change to take account of revised contract arrangements with Heathrow Airport Ltd Minor change to take account of the proposed implementation of an Integrated Management System.

Contents

1   Health and Safety Management System

1.1   Overview

1.1.1   Network Rail's (NR's) core obligation is to secure the effective and efficient operation, maintenance, renewal and enhancement of its network in order to satisfy the reasonable requirements of persons providing services to railways and funders. This is in respect of the quality and capability of the network and the facilitation of railway train service performance.

1.1.2   The requirements of the Railways and Other Guided Transport Systems (Safety) Regulations (ROGS), and subsequent amendments, apply to NR, which has an established Health and Safety Management System (HSMS) that details on how safety critical work is managed.

1.1.3   This NR HSMS describes the principles, roles, responsibilities, systems and processes, which are in place within NR to ensure the health, welfare, safety and security of its employees and supply chain, and arrangements in place to deliver the organisation's vision of *Everyone Home Safe Every Day*.

1.1.4   The health and safety of its employees and others affected by its activities is assured through the effective design, construction, maintenance and operation of the railway infrastructure. The HSMS is underpinned by rules, standards, specifications and procedures, which form an intrinsic part of the overall system.

1.1.5   The HSMS describes the specific arrangements in place for controlling health and safety risks. It is modelled on the structure shown below which provides for a thorough understanding of:

- Health and safety risks

- Planning and implementation of effective controls

- Measurement of results to inform continual learning and improvement, driven by strong and committed leadership at every level of the organisation

1.1.6   The HSMS supports the *Management of Health and Safety at Work Regulations (MHSWR)* which require employers to assess risks arising from their operations, and to put in place effective arrangements for the planning, organisation, control, monitoring and review of these controls.

1.1.7   It is also is in conformance with the requirements of the British Standard for occupational health and safety management systems BS OHSAS 18001 as shown below:

Arrows denote a cycle of continual improvement

NR's Health & Safety Management System model

1.1.8   Changes to the legal register are checked by the HSMS Specialist, and an impact assessment is undertaken which is then reviewed by Chief Health, Safety & Quality Officer (CHSQO) through the Standards Steering Group.

1.1.9   The Director of HR sets out overall framework for competence management, which is supported by the Heads of Disciplines.

1.1.10   The HSMS supports the introduction of an overarching Integrated Management System (IMS) which references discrete systems across NR through a single source repository or portal containing all company information in a structured framework.

1.2   Chain of Command

1.2.1   NR operates in a Matrix organisation structure, where there is a clear Chain of Command to provide a formal hierarchy of authority, enable cascade of communications, and discharge accountability and responsibility within the organisation for both safety and business decisions. This is reflected in the following organisational hierarchy chart.
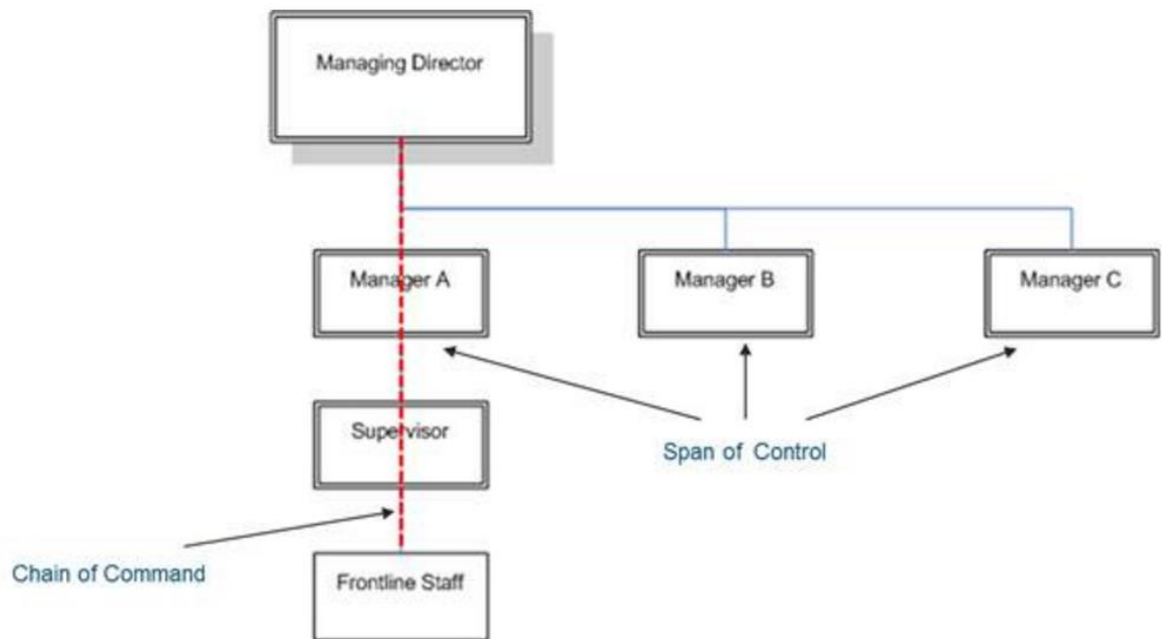
Controls are in place for new appointments to posts in the organisation so that employees are aware of their role in the Chain of Command. These are:

a.   Job Descriptions (*JDs*) set essential candidate requirements, and depending on the criticality of the role, internal and external candidates may be required to have demonstrable experience/qualifications to carry out the duties of the role upon appointment

b.   *JDs* also set the accountabilities and describe the purpose of a role

c.   Transfer of objectives and ownership of initiatives, and handover information provided by previous postholders

d.   A *Network Rail On-Boarding Checklist* is briefed to new entrants or appointees by their line manager, including confirmation of access to essential systems, that provide organisational charts to allow new role holders to understand their position in the Chain of Command

e.   For posts that are classified as Key Safety Posts (KSP) in the organisation structure, briefing of their safety accountability within the organisation hierarchy is provided. This briefing is shared with individuals that are nominated as a deputy to a KSP. Virtual communities exist to support and to share good practice e.g. DRSAM community, RAM asset forums, Heads of Safety Integrated community

1.3   Leadership

1.3.1   Leadership creates the vision, sets the strategic direction and inspires people to follow. Managers at all levels are required to demonstrate clear commitment to health and safety, promote the right attitudes and behaviours throughout the workforce and drive continual improvement. The overall intention and direction is communicated within the Chief Executive's Safety Vision statement.

1.3.2   NR measures compliance with and the effectiveness of its health and safety management arrangements using a wide variety of sources and techniques. Measurement is based on both leading indicators, which focus on control activities, and lagging indicators based on safety performance outputs covering

both personal and system safety. Measurement data is assessed and analysed to produce safety intelligence for the business. This section also describes the arrangements for meeting the requirements of the ***Common Safety Method (CSM) for Monitoring***.

1.4   Understanding Risk

1.4.1   A thorough understanding of health and safety risks is essential in managing risk effectively. NR adopts a standardised approach to identify, evaluate and understand its health and safety risks, making appropriate use of industry wide risk models and specialist tools and techniques, applied with appropriate consideration of local factors. NR applies standard safety decision criteria, through compliance with standards and procedures, to provide consistency in the application of measures to reduce risks so far as is reasonably practicable (SFAIRP).

1.5   Implementing Controls

1.5.1   Planning and implementing arrangements for effective control of risks are defined in the NR standards, specifications and procedures. This includes the arrangements for effective design, construction, maintenance and operation of the network and specific arrangements for control of health and safety risks.

1.5.2   NR is implementing the ***Business Critical Rules (BCR) framework***, providing:

- A clear understanding of the controls necessary to manage risk and the performance measures for those controls

- Awareness and clarity on individual role accountabilities, responsibilities and capabilities

- A structure that enables flexible and proactive management of risk that is appropriate for local conditions

1.5.3   The business process prescribes the approach for the management of the ***BCR framework and its products***.

1.5.4   BCR is changing the way NR manages risk. The framework supports safer, simpler and more effective ways of working. The NR Lifesaving Rules are the first ten ***Business Critical Rules***.

1.5.5   ***BCR*** is replacing the existing Standards framework with the simpler, risk-based ***BCR framework***. This new framework is underpinned by the BowTie methodology of risk management that improves the understanding of threats and how to control them.

1.5.6   The result is a clear line of sight from risks to how to control them. This will improve the way the risks to its people, its assets and the success of its business, are managed.

1.5.7   BCR framework outcomes include:

- Delivery of safety and performance improvement through implementing a systematic control framework to understand and manage risk across its business

- All staff, contractors and suppliers transitioned to the new Business Critical Rules control framework enabling risks to be managed in a safer, simpler and more effective way

- Safer by deploying more resources to prevent, where possible, key risk exposures from materialising whilst continuing to respond effectively when they do

- Simpler by better understanding of how to manage key risks effectively on a day to day basis and what the implications are if NR fails to do so

- More effective by making informed judgments, and planning work more effectively, so that local risks are managed in the most appropriate way

- Give NR a process for reviewing and continually improving risk management

1.6   Measuring and Monitoring

1.6.1   NR measures compliance with and the effectiveness of its health and safety management arrangements using a wide variety of sources and techniques. Measurement is based on both leading indicators, which focus on control activities, and lagging indicators based on safety performance outputs covering both personal and system safety. Measurement data is assessed and analysed to produce safety intelligence for the business. This section also describes the arrangements for meeting the requirements of the *Common Safety Method (CSM) for Monitoring*.

1.7   Learning

1.7.1   NR uses the knowledge derived from measurement activities, combined with planned and targeted research and external information sources, to review the effectiveness of its health and safety management arrangements and drive continual improvement. This deepens NR's understanding of risk and informs the development of systems and controls based on a philosophy of predict and prevent.

1.7.2   NR recognises the importance of learning with other organisations such as TOCs/FOCs, and supply chain, which is made possible through industry groups such as OPSRAM. Learning is also achieved through making appropriate representation at formal liaison meetings including interface meetings on matters of proposed changes, statutory obligations etc. with other transport operators to discuss respective safety performance. Further details are referenced in HSMS 6 Managing Interfaces and HSMS 4.8 Consultation and Communication.

2   Leading

2.1   Safety Vision statement and Addendum

2.1.1   NR recognises the importance of having a clear policy and strategies embedded in the business that demonstrate its commitment to the health, safety and wellbeing of employees, supply chain, passengers, stakeholders and members of the public who may be impacted by its undertaking.

2.1.2   NR understands its legal obligations, and is determined to work with its employees, contractors, passengers, stakeholders and members of the public to deliver a regime that is directed towards assuring that legal compliance is the starting point for safety, health and wellbeing performance.

2.1.3   This has been implemented as an updated safety policy, in the form of a *Safety Vision* and supporting addendum, driven by the vision of *Everyone Home Safe Every Day*, which together with supporting commitments, has provided a common approach for all interventions and communications around safety. It is at the core of the safety elements of its Strategic Business Plan (SBP).

2.1.4   The *Safety Vision* and addendum provides NR's commitment to the safety of employees, rail passengers and others who may be affected by its operations. Signed by the Chief Executive, it establishes the corporate attitude to safety and provides a formal corporate statement on the approach to effective safety, health and wellbeing management, including the prevention of injury and ill health. NR is absolutely committed to improving safety performance in the railways, whether that is passenger, public, or among the workforce. The *Safety Vision* explains to staff and contractors the expectations that NR has of them regarding safety and safety behaviours. It is underpinned by the arrangements outlined in this HSMS.

2.1.5   NR's vision, and belief, is that safety and business performance go hand in hand, and personal commitments to safety, are underpinned by its safety and health and wellbeing strategies. The vision and underpinning strategies demonstrate NR's determination to focus efforts on delivering an environment that recognises the importance of providing an effective management system, with supporting processes that enable NR to meet its safety, health and wellbeing objectives.

2.1.6   The essence of the *Safety Vision* and our safety, health and wellbeing management arrangements is the management of risk through a regime of legal compliance, clear strategies for safety, health and wellness and a set of business objectives that will deliver the required reduction in accident rates, provide for continual improvement of the management system, reduce the risk of long term potential health and safety hazards and improve business performance through optimised safety and wellbeing.

2.1.7   NR has in place a structured safety, health and wellbeing governance meetings regime that monitors and reviews the implementation and effectiveness at regular intervals of the policy, strategies and objectives of the organisation.

2.1.8   The *Safety Vision* is brought to the attention of new employees through the induction process. Significant changes are brought to the attention of employees through the organisation cascade briefing process.

2.1.9   The safety vision and addendum are published on both the NR *Connect page* and *Safety Central page*.

NetworkRail

Safety

Our Vision	**Everyone Home Safe Every Day**
Our Belief	Outstanding safety performance and outstanding business performance go hand in hand.
Our Personal Commitments	Safety is a core value and key to our success. Whether you are an employee, contractor or subcontractor, by delivering on our commitments we will achieve outstanding performance. This is how we will deliver a better railway for a better Britain.

- Safe behaviour is a requirement of working for Network Rail.
- We will always comply with our Lifesaving Rules.
- We will plan work to ensure that it can be done safely.
- Our work environments will be tidy - and we will leave them tidy when we've finished.
- We will ensure people have the skills and the equipment required to work safely.
- We will stop work if it cannot be done safely.
- We will personally intervene if we feel a situation or behaviour might be unsafe.
- We will use Close Calls to report unsafe behaviours and conditions.

- We will use our Fair Culture principles to investigate incidents and learn lessons to prevent them occurring again.
- We will relentlessly strive to find new ways to keep ourselves, colleagues, passengers and the public safe.
- We will design, construct, inspect, operate and maintain the railway to keep everyone safe.
- Safety leadership is key to how we assess our people's performance and readiness for progression.

Mark Carne
Chief Executive
March 2014

Our Safety Vision commitments are underpinned by the arrangements set out in our Safety Vision addendum. You can download a copy of the addendum at: www.safety.networkrail.co.uk/Commitment-and-Rules/Mark-Carnes-Safety-vision-statement or http://connect/assurance/SafetyAndCompliance/HandSMS/HealthSafetyPolicyStatement.aspx

everyone home safe every day

Safety Vision Addendum

Our Safety Vision — Sets out our belief that safety and performance go hand in hand and our personal commitments to getting 'Everyone home safe every day'.

Our Safety Targets — Our safety strategy sets out our safety targets for the end of CP5:
- No serious workforce major injuries or fatalities
- 50% reduction in passenger risk
- Further 25% risk reduction in level crossing risk.

Our Responsibilities — Safe behaviour is a requirement of everyone who works with and for Network Rail.
- We expect every individual to comply with the Lifesaving Rules and emergency procedures, report unsafe acts and conditions and be 'fit for work'
- We expect leaders and managers to role model safety leadership by having open and honest safety conversations, always applying our principles of fair culture and acting supportively in resolving and learning from Close Calls, incidents and accidents.

Measuring Progress

We have robust planning, reporting, analysis and management systems in place to:
- Understand trends in safety-related accidents and incidents
- Continually improve our risk assessment processes, controls, policies and standards
- Investigate and learn from accidents and incidents so they don't happen again
- Share best safety practice across the business and industry for a joined-up approach
- Audit compliance with health and safety processes
- Identify and prepare for risks that might impact on future safety performance
- Meet our legal obligations to deliver a safer railway.

Stakeholder Collaboration

We recognise the value of working closely with our trade union, contractor, wider rail industry and community partners to:
- Protect everyone who works on our infrastructure from physical harm and longer term health risks
- Reduce the risks associated with misuse of our infrastructure as much as we reasonably can
- Protect passengers, public and vulnerable individuals, from harm at stations, level crossings and in transit
- Be considerate of our lineside neighbours when planning and delivering safety and performance improvements.

everyone home safe every day

This addendum sits alongside our Safety Vision. It sets out the arrangements we have in place to achieve 'Everyone home safe every day.'

2.2   Leadership Commitment

2.2.1   All managers have a responsibility for health and safety, as well as security, and are required to demonstrate clear commitment to health and safety, promote the right attitudes and behaviours and drive continual improvement. This covers the full range of system safety risk encompassing all aspects of safety risk associated with the design, construction, maintenance and operation of the railway network.

In demonstrating this commitment, all managers are encouraged to work positively with health and safety representatives, recognising the positive contribution that they make to the management of health and safety (also refer to 4.8 – Consultation and Communication).

2.2.2   Every manager is accountable for the health and safety performance of their own team. Managers confirm that all employees understand their roles, objectives (where there is a requirement to set these for individuals), relevant processes, have sufficient resources, materials, equipment and information, are fit and competent, and have appropriate feedback on performance.

2.2.3   Managers help their people understand what is expected of them through briefing of *JDs*, confirmation that they are aware of, and understand, any standards and procedures relevant to their role, and setting of annual objectives. Managers arrange for new team members to undergo appropriate induction, including local induction.

2.2.4   Every manager has a responsibility to monitor the health and safety performance of their team, including compliance with mandatory standards and procedures. Specifically, managers are required to:

- Review the output of their teams work to confirm compliance. This may include:

  - The routine sign-off of work

  - Sample checking

  - Regular one-to-one reviews

  - Team meetings and formal performance reviews

  The extent of this monitoring will depend on the complexity of the work, the experience of employees and the degree of risk

- Comply with any specific line management monitoring arrangements specified in relevant procedures

- Conduct formal performance reviews with direct reports as specified in the formal performance review process, including performance against objectives, where set, and how these were achieved, and identify any training and development needs

2.3   Safety, Health and Wellbeing Strategies and Home Safe Plan

Safety

2.3.1   The safety strategy *Transforming Safety & Wellbeing* builds on the *Safety Vision* and provides a structured approach to improving the safety of passengers, the public and its workforce. It has helped shape the safety components of the *Strategic Business Plan (SBP)* for the current Control Period. The strategy together with the work being undertaken to understand key risks has provided the context for its integrated safety plan.

Health & Wellbeing

2.3.2   NR aims to optimise its employees physical, mental and social wellbeing through a ten-year strategy *Everyone Fit for the Future : 2013 - 2024* and underpinning implementation plan, which will be resourced at central and route level to enable its effective delivery. The way NR communicates health to its employees has been

considered and its vision of **Everyone Fit For The Future** is now being communicated through the development of a range of educational resources, including podcasts, presentations and videos on topics such as general wellbeing, hand arm vibration syndrome, noise-induced hearing loss and workplace stress.

Home Safe Plan

2.3.3   The Home Safe Plan, previously identified as the Integrated Safety Plan, consists of 21 national projects which have been identified to provide the biggest risk reduction to its work force, public and passengers.

The plan is a product of a risk ranking exercise. Collaboration between the central health and safety team and the business areas has resulted in the creation of the consolidated plan.

The projects all fit into six key areas of health and safety:

- Workforce safety
- Public safety
- Train accident risk
- Health and wellbeing
- Ergonomics
- Management System

See **Connect** for further detail.

2.4   Safety Culture and Leadership

2.4.1   A safety critical organisation such as NR has its reputation, performance, status as an employer, and credibility, based on delivering efficiency while ensuring the safety of its passengers, public, workforce, and supply chain.

2.4.2   The culture and behaviours required to deliver this will also deliver key agendas such as health and well-being, sustainable development, transparency, diversity and inclusion, engagement etc. Using safety as the lens or burning platform for this cultural change, is highly effective as everyone can support and commit to **everyone home safe every day**.

2.4.3   Safety leadership creates change in environment (culture), so desired individual behaviours are supported and enabled to grow, which in turn, inspires people. The change is being delivered through a combination of system and process change, and development of effective safety leadership behaviours within and beyond the organisation. Safety leadership will be transparent from CEO, throughout the business, and into the supply chain.

2.4.4   NR's Lifesaving Rules are at the heart of this change in culture – **everyone home safe every day** – and of its ongoing commitment to eliminate all injuries and fatalities in NR and the industry. They underpin safety values and vision, and they are for everyone, whether office based or working on the front line.

2.4.5   NR understands that its workforce safety performance needs to improve. NR's central focus to deliver this is via the **Home Safe plan**. The plan will improve the risk control surrounding the safety of our workforce with regard to the highest risks they are exposed to:

- Core workforce safety risk assessment via the WARA (work activity risk assessment project)

- Driving safety through the management of occupational road risk

- Manual handling

- Fatigue

- Planning and delivering safe work

- Improving trackside worker safety

2.4.6   NR will define the expected behaviours of safety leaders and relate these to the corporate behaviours. These will be used to recognise good, exceeded and outstanding, or poor/in need of development, performance, and be linked to recruitment, training, development, appraisals, disciplinary processes, and requirements during procurement.

2.4.7   NR will develop individual behavioural change such that all staff can take ownership for their own, their colleagues, the infrastructure, passenger and public, safety. Staff will be provided with the skills to make the change, as well as the opportunities to practice. This includes appropriate behaviours and decision-making for safety, within effective design, construction, maintenance, and operation (systemic risk).

2.4.8   NR will increase conscious risk awareness and management, of both personal safety and process safety (latent conditions), within the organisation.

2.4.9   A key role of the CHSQO and team is to lead business transformation programmes for safety culture and leadership and provide effective co-ordination of these programmes, along with influencing other work streams that impact on safety culture and leadership.

2.4.10   NR has established an industry collaboration group for Safe and Sustainable by Design, which is sponsored by the CHSQO and the Head of Sustainability & Consents (HoS). The aim of industry group is to provide strategic direction and to coordinate the collaborative efforts by supply chain and NR to make a step change in the way occupational health and safety, system safety and sustainability are considered and embedded to deliver on the industry safety strategy.

2.4.11   Leadership behaviours deliver health, safety environment objectives, which support the work of STE as a technical authority. They are the accountability of the CEO, and the responsibility of the Group STE Director. Where topic specific initiatives occur around system and processes, the accountability for safety will resort to the CHSQO, with health and well-being delegated to the Chief Medical Officer (CMO), and engineering being delegated to the Chief Engineer STE (CESTE) etc.

2.5   Individual Accountability

2.5.1   The overall health and safety performance of its organisation depends on the individual health and safety performance of its people. The performance of each and every individual has an impact on the effectiveness and efficiency of its key

delivery processes. As such, every employee is held accountable for their own health and safety performance.

2.5.2   This accountability is achieved by clearly identifying, and formally allocating, health and safety responsibilities where appropriate, and by reviewing performance against these as part of the formal performance review process. Where the review identifies unsatisfactory aspects of performance, plans are agreed between the manager and employee to address these.

2.5.3   Every employee has a duty to comply with any mandatory standards and procedures relevant to their role that indicate how particular processes are to be carried out.

2.5.4   All safety leaders within the organisation are to have a working knowledge of the *Be Safe Handbook*, including their legal accountabilities and responsibilities, and understand and demonstrate effective working relationships with the trade unions. NR ensures that all senior managers receive this information as part of their induction to the business, and also when they change roles. Local safety information, which will support safety leadership, is the responsibility of the local Route/function or IP region.

2.5.5   The STE function will be responsible for informing all staff about relevant H&S information, and safety leadership accountabilities, through appropriate communications and inductions.

2.5.6   The NR safety leadership strategy is built to deliver on the requirements of the industry safety strategy (RSSB), RM3 reporting to ORR, and to plan for the organisational safety culture maturity measurement by ERA in 2020-2024 (work completed by *PRIME/UIC* safety culture groups).

2.5.7   NR Standard *NR/CS/OHS/002 Policy on Working Safely* requires the establishment of SSOW, delivered by a competent workforce demonstrating the correct safety behaviours. To meet these requirements, it places responsibilities on line managers, supervisors and employees.

2.6   Safety leadership development

2.6.1   Safety leadership is a key requirement within the induction of directors, senior managers, and safety critical and key safety roles. The content and updating of this will be the responsibility of the Principal Health & Safety Change Specialist.

2.6.2   All directors, senior managers, and safety critical and key safety roles will undergo a safety specific induction, in addition to the national or local induction. This will occur within 3 months of starting their new role. This induction will include an introduction to the STE function as a technical authority for safety.

2.6.3   The on-boarding process for all new starters will include key safety information, and expectations of safety leadership, for NR. Governance and updating will be the responsibility of the Principal Health & Safety Change Specialist. The HR function will be responsible for a baseline level of safety induction for all staff.

2.6.4   Front line staff, including contractor personnel, will complete the *Industry Common Induction (ICI)*.

2.6.5   All staff will be briefed on the **Safety Vision** and addendum as part of their induction, and this process will be tracked as part of the CMO line manager assurance.

2.7   Safety leadership – upskilling

2.7.1   Senior leaders can create an environment where people feel safe to speak up about safety issues, where raising concerns is rewarded, and where safety is experienced as paramount.

Senior leaders need to be visible in their commitment to safety in all they do.

2.7.2   **Safety conversations** will be delivered appropriately for different leadership levels in the organisation dependent on the degree of working knowledge of the leader. As the organisation matures, the requirements for this training will be reviewed.

2.7.3   This review, carried out jointly between the CHSQO and NR Training, is to occur no less frequently than bi-annually.

2.7.4   All leaders in NR should expect to complete a Safety conversation each week. Normally this will be part of business as usual (BAU) activity, with a line-report, colleague, or supply chain.

2.7.5   Six times a year, a **Safety conversation** is to be recorded in the Think4safety app (or equivalent) available through the NR App Store. The STE function will complete periodic Safety conversation audits to ensure quality.

2.7.6   The CHSQO will complete an audit of the app responses each year.

2.7.7   The Think4safety app will allow for thematic trending for both safety issues, and also, **Safety conversation** skills development needs. The CHSQO will review and report this thematic information yearly.

2.7.8   Where a route/function has chosen an alternative means of recording, local analysis will be shared with the STE function for annual reporting.

2.8   Work Safe Procedure

2.8.1   No employee of NR, or any contractor, or visitor working for NR is expected to carry out any task where the risk to themselves or any other person is considered to be unacceptable. NR Standard **NR/SP/OHS/00112 Worksafe Procedure** identifies the process by which employees should bring unsafe work activities to the attention of their line manager. It supports NR's commitment to the development of a blame free culture and which recognises that workers invoking the NR Standard **NR/SP/OHS/00112 Worksafe Procedure**, reporting near misses or accidents shall do so free from the fear of sanctions. SSOW are required to be clearly defined when planning work. Systems of work must also take due cognisance of the nature of the task, the method of working, the associated risks and the environment in which the task is to be undertaken.

2.8.2   The NR Standard **NR/SP/OHS/00112 Worksafe Procedure** also describes the subsequent procedures to resolve the matter. If the line manager is unable to identify a Safe System of Work (SSOW) to the satisfaction of the person who has ceased work, the decision is reviewed by another manager. Any instance of

initiation of the NR Standard **NR/SP/OHS/00112 Worksafe Procedure** is reported and investigated.

2.8.3   Violations of rules, SSOW and other safety related instructions are investigated to identify direct and underlying causes and appropriate remedial action. This may include instigation of the Fair Culture process.

2.9   Principles of a Fair Culture

2.9.1   NR, the National Union of Rail, Maritime and Transport Workers (RMT), Unite/Confederation of Shipbuilding and Engineering Unions (CSEU), and the Transport Salaried Staffs Association (TSSA) are committed to ensuring **everyone home safe every day**. To help make this possible, NR has jointly agreed to the following principles of a fair culture:

Behaviours

- It will be clear to everyone, through the Lifesaving Rules, what behaviours are expected of them at work

- NR aims for a fair culture where NR can have honest and open discussions about safety

- Reporting will be encouraged, valued and listened to

- Anyone who reports a Close Call (see HSMS 7.1 Health and Safety Performance Indicators), unsafe behaviour, unsafe condition or unsafe asset should be able to do so in a blame-free environment and will be supported by the organisation

- Failure to report an incident, Close Call, unsafe behaviour, unsafe condition or unsafe asset is unacceptable

Consequences

- There will be consistent messages, processes and agreed consequences applied to any breach of a Lifesaving Rule

- All potential breaches of a Lifesaving Rule will be properly investigated in a fair and transparent manner with Trade Union involvement

- Where outcomes from an investigation determine further action is required then they shall be subject to a separate process

- No action against workers will be taken without recourse to a fair and transparent process

- Disciplinary action or sanctions against a worker shall as a minimum include an investigation, a hearing and, where necessary, an appeal with the right to Trade Union representation for its members at the hearing and appeal, and observation at the investigation

2.10   Specialist Health and Safety Support

2.10.1   Health and safety support is provided to assist managers and employees to meet their responsibilities. The STE (STE) function provides organisation-wide guidance and support in respect of:

- Strategies for managing safety, health and welfare (including occupational health and track safety)

- Safety culture and leadership

- Assurance and accident investigation

- Health, safety and welfare learning and liaison, safety, health and environment performance reporting

- Safety risk assessment

2.10.2   Where additional support is required for the STE Matrix organisational structure, then a Business Partner is allocated to the Function.

2.10.3   The Business Partner is a part-time role undertaken by senior leaders within the CHSQO organisation, and is akin to the HR Business Partner model. While each safety leader within the CHSQO organisation will have a specific area of the strategic health and safety agenda for which they are accountable for overseeing, they will also act as a generalist, representing all areas under the CHSQO remit for the purposes of the Business Partner relationship. Each Business Partner will receive ongoing support from each of the Health and Safety Specialists within the CHSQOs Organisation.

2.10.4   Business Partners are allocated as follows:

Network Operations Exec	Head of Public & Passenger Safety
Infrastructure Projects Exec	Head of Corporate Workforce Safety
Corporate Functions - Property	Head of Fire Safety Policy
Corporate Functions – RSSCO	Principal Workforce Safety Specialist
Corporate Functions – Exec	Chief Medical Officer
Digital Railway Exec	Senior Programme Manager STW

2.10.5   Within each Route, the Head of Route Safety Health & Environment and team provide support and advice to the Route Managing Director and team, and the Chief Operating Office and team, (to the ScotRail Alliance Managing Director and ScotRail Infrastructure Director and teams, Scotland only). The Operational Security & Contingency Planning Manager and team provide support and advice on emergency planning and business continuity.

2.10.6   Within RSSCO, safety advice and support is provided by the CHSQO and team.

2.11   Health and Safety Meeting Structure

2.11.1   NR sets policies and co-ordinates direction for the management of the organisation through a structure of formally appointed committees and groups, from the Board to local management level. NR's meeting structure is defined in the *Business Performance Management Framework (BPMF)*. This framework describes required meetings from Board level through to route and area meetings.

2.11.2   These meetings have a clearly-identified membership (Chair, secretary and members), and purpose and specific remits to:

- Promote good governance, risk management and control

- Prevent duplication

- Promote action-focused discussion

2.11.3   Each meeting has an agenda and the outputs and actions are captured in meeting minutes and reviewed, updated and finalised and subsequent meetings. They also have specified routes for escalation or delegation.

2.11.4   The **Network Rail Board** comprises non-executive and executive Board members, with overall responsibility for corporate governance. The NR Board's Safety Health and Environment (SHE) Committee monitors NR's management of its safety, health and environmental responsibilities. The committee is appointed by the Board and comprises at least three members being non-executive directors of the Board of NR. The Board appoints one of the members of the SHE Committee to be its chairman (who is not the Chairman of the Board). One nominated representative from NR's recognised trade unions normally attend meetings of the SHE Committee by invitation of the SHE Committee.

2.11.5   The Executive Committee (ExecComm) is an executive body operating at a strategic level responsible for providing leadership and commitment within the business on safety, health and environment matters to sustain and continually improve the performance of NR in these areas. It is responsible for the day to day running of the organisation and is the decision making body within delegated authority limits. It is also responsible for agreeing the strategy and objectives necessary to deliver NR's safety and sustainability goals. ExecComm meets regularly throughout the year, is chaired by the Chief Executive and is attended by members of the Executive Committee and nominated Directors.

2.11.6   ExecComm has ownership of governance for safety leadership:

	R	A	C	I
Setting direction	Director of STE	CEO	TU	Line Managers
Setting process	HR NR Training	HR NR Training RMDs	TU	Line Managers
Carry out actions (training, induction etc.)	NR Training HR	Senior Managers Line Managers	TU DCPs Investigation Managers	Line Managers All staff
Communications	CHSO	Comms.	TU	All staff

2.11.7   The National Safety, Health and Environment Review Group (NSHERG) meeting operates at a strategic level and is responsible for developing strategic plans for consideration by the Executive Committee to tackle the risks and opportunities in the area of Health & Safety, Environment and Research & Development. The NSHERG meeting also monitors the implementation of these plans by the organisation on behalf of the Executive Committee. The NSHERG Group meeting normally meets regularly throughout the year, chaired by the Group STE Director, and is attended by a cross functional representation as defined in the meeting terms of reference.

2.11.8   Members of the Executive Committee and the NSHERG meeting hold functional team meetings, which include terms of reference for communicating and taking action on matters of safety, health and environment to their direct reports. The cascade of direction and communication continues through the hierarchy of line management meetings with attendees at each level chairing their own team meetings. Feedback and issues of concern are able to be escalated via the structure of the chairman from one meeting being an attendee at the next level meeting, and so on.

2.12   Leading Safety Conversations

2.12.1   The principles of *Leading Safety Conversations* are as follows:

A safe business is:

- One that has visibility of all its safety risks and is risk aware at all levels in the business

- Prepared to discuss risks openly and ensure sufficient oversight at senior levels of the business to address system level risk

As Leaders of Safety, NR is:

- Committed to, and competent enough to, see and recognise risk

- Sufficiently engaged to talk about safety, and open to listen, learn, and ensure actions reference, the risks identified

2.12.2   Leading *Safety Conversations* provides the context and skills required to hold effective and empowering *safety conversations* in its business. It looks to realise the different opportunities NR has every day to positively impact on the safety performance and engagement. This moves *safety conversations* beyond inspection and assurance towards a systemic and comprehensive view that drives an inclusive business dialogue between operational and non-operational staff from across the business.

2.12.3   *Safety conversations* may form part of a Safety Hour, or be held as a result of a Safety Hour. The CHSQO team will provide a clear definition of the differences/similarities between these two initiatives.

2.12.4   Role modelling safe behaviours - SAFE commitments – 360O feedback will be given to the following groups and 1-2-1 coaching provided to develop safety behavioural commitments. These will be reviewed and updated annually, and are to be recorded as part of the PDP. This process will be led by HR, however, the CHSQO will remain accountable for its delivery.

2.12.5   The minimum expectations for key roles, both in terms of frequency and recording requirements are:

Executive Director	3 monthly
Other Executive Committee Members	3 monthly
Route Managing Director/ScotRail Alliance Managing Director (Scotland only)	3 monthly
Managing Director Freight & National Passenger Operators	3 monthly
Chief Operating Officer (COO)/ScotRail Alliance Infrastructure Director (Scotland only)	Bi-monthly
Director Route Safety & Asset Management/Director Route Asset Management (Scotland only)	Bi-monthly
Route Programme Director (Works Delivery)	Monthly
Head of Maintenance Delivery	Monthly
Head of Operations Delivery	Monthly
Head of Infrastructure Support Services (Scotland only)	Monthly
Infrastructure Maintenance Delivery Managers (IMDM)	Monthly
Operations Manager	Monthly
Regional and Programme Director for IP	3 monthly
Functional/Business Directors, including RSSCO	6 monthly

Heads of Discipline	3 monthly

2.12.6   The routes and businesses will develop local plans and set local expectations so that other influential members of the team will also conduct safety conversations.

2.12.7   These commitments will also be shared with line-reports to support visibility of safety leadership and role-modelling.

2.12.8   The remainder of the leaders across NR will also make their own personal SAFE commitments within a facilitated session, using the SAFE commitment card pack. These sessions will be made available by the STE function four times yearly.

Executive safety strategy session

2.12.9   Each Route, IP Region and Function within NR will complete a cultural safety strategy evaluation session which will create an agreed bench-mark of safety maturity for both safety leadership and culture. This will be led by the Principle Health & Safety Change Specialist (PHSCS), and will be to form a heat map for the organisation, which will enable risk-based allocation of resources.

Managers

2.12.10   **Safety conversations** will create the environment for trust, and open and honest, reporting around safety, as well as ownership of safety solutions. Managers will need to develop expertise in safety leadership that will be demonstrated through activities such as delivery of safety hour, management of close calls (e.g. responsible manager), and the ability to work as a collaborative safety leader with other technical experts outside their area, e.g. signaller with COSS, or a project manager with a contractor manager.

2.12.11   The CHSQO team will identify the skills requirements, and ensure that appropriate upskilling is provided/monitored, through courses, other programmes (e.g. role based competences), and bespoke training where appropriate.

Front-line leaders

2.12.12   At the front line, **safety conversations** need to contain higher levels of positive challenge, and encouragement of greater risk/hazard awareness, and better active listening. This will generate quicker development of capability, and greater capacity, through development of people resources. The PHSCS is responsible for ensuring that internal training courses such as signaller, COSS, PDSW next steps, etc., include and embed these skills in conjunction with the Routes and with NR Training.

Corporate office safety leaders

2.12.13   Within the corporate office, safety leaders will understand that while **safety conversations** take place at the front line, they can also be undertaken, and be of significant value, within the corporate office, covering areas such as commercial management, safety by design, HR Policy, etc. As demonstrated by way of the Swiss-cheese model, decisions made downstream will have significant impact on safety at the front line. The CHSQO team will ensure this upskilling through development of corporate safety hour sessions, stand down learning, and bespoke team safety interventions.

TU reps

2.12.14   Consultation with the TU reps, their role and responsibility to both support development of safety leadership in NR, and also to be demonstrable safety leaders themselves, will be vital. Governance lies with the PHSCS in conjunction with the National Health & Safety representatives from the RMT, TSSA and UNITE, to ensure the lead reps, and safety reps, receive the required development and training.

Supporting safety leadership in contractors

2.12.15   NR will work with its partner organisations to agree expectations and monitoring, and share best practise around safety leadership. This will include safety leadership internally in the partner organisation, and how NR staff can work with its partners in a safety leadership capacity. Key areas that will be covered include:

- Procuring/designing for safety

- **Safety conversations**

- Monitoring/joint safety culture planning

- Sharing safety information – two way

2.12.16   Work will be undertaken with contractors to tie NR's safety leadership strategy and requirements, into their own behavioural safety strategy. The requirements for safety leadership will form part of the procuring for contractor safety process so that how NR will work with its contractor partners is defined up front.

2.12.17   This process will be delivered through the Business Partner relationship from STE to IP. The Prevention through Engineering Design (PtED) will outline how NR staff will monitor safety leadership skills as part of the design process.

2.12.18   This will be tracked through the requirements of CDM, e.g. the attendance of CDM Awareness training courses by NR staff.

2.12.19   The development of the One vision One way initiative *(P3M3 Improvement Programme)* in IP, will ensure that expectations of safety leadership for IP staff, and how this is demonstrated with route and contractor partners, is defined and supported (e.g. via the competency and capability framework development, and the management of safety as a functional expertise, managed by safety experts through adherence to a new operating model). This process will be delivered through the Business Partner relationship from STE to IP.

2.12.20   NR's principal contractors will be encouraged to work jointly with the IP project teams to evaluate their safety cultures, including safety leadership, and to develop a joint plan for implementation of change. This process will allow 2-way sharing and learning. It is expected that any plan will be described in terms of the 7 cultural themes, and the Dimensions of Safety (DoS), so that there is consistency across NR and across contractor. This process will be delivered through the Business Partner relationship from STE to IP.

Sentinel

2.12.21   The *Sentinel* process will develop safety leadership skills as part of the process for verification. The requirement of safety leadership will be defined by the Sentinel team, and upskilling provided as appropriate.

2.12.22   The Sentinel investigations process will highlight any issues with safety leadership within its investigation process, and ensure these are highlighted back to the appropriate contractor managers, and NR IP project managers.

Communication process

2.12.23   STE will be accountable for producing communications both internally and for requirements externally, around safety leadership.

2.12.24   These communications may be topic specific, such as with safety leadership communications of LSR refresh, shared learning, e.g. safety bulletins, and around development and training requirements/implementation, e.g. *Safety conversation* training.

2.12.25   The CHSQO team is accountable for ensuring this happens.

2.12.26   The safety leadership strategy will be communicated to all contractors through the IP communications channels. This process will be delivered through the Business Partner relationship from STE to IP.

2.13   Objectives, Targets and Programmes

2.13.1   Every year, as part of its business planning cycle, NR reviews its health and safety risks and performance and sets objectives and targets for further risk reduction, therefore meeting NR's related legal obligations and other business requirements.

2.13.2   At corporate level the review is carried out by the relevant functional directors. The review considers performance against health and safety key performance indicators, the outputs of the precursor indicator model, and other information on risk.

2.13.3   Functional review groups identify options for further risk reduction and evaluate these against the business safety decision criteria. Specific objectives, targets and actions are then agreed by the functional directors to reduce risks SFAIRP. Following Board-level review and endorsement, these are included in the organisation business plan and progress against these is monitored via the business review process.

2.13.4   Each year, as part of the business planning process, the range and definition of health and safety performance indicators are agreed and communicated throughout the organisation. Where appropriate, indicators are normalised (e.g. by train miles/hours worked) to facilitate a meaningful trend comparison. Targets for particular indicators are set, where appropriate, through the business planning process. A master list of corporate health and safety performance indicators is maintained by the Risk & Assurance team within the STE function.

2.13.5   Performance across the range of measures is captured through the NR National Scorecard:

NetworkRail

A GUIDE TO THE 2016/17 NATIONAL SCORECARD

The national scorecard is published every period and shows how Network Rail is performing against key performance measures. It shows the annual target, the most recent performance figures and a forecast of where the company expects to be at the end of the year. The final measures on the scorecard are subject to Department for Transport approval.

MEASURE OF PERFORMANCE

LOST TIME INJURY FREQUENCY RATE (LTIFR): The number of injuries leading to absence from work among staff and contractors per 100,000 hours worked. Our target is 0.447. A lower figure represents a better performance against target.

CLOSE CALLS RAISED: The number of Close Calls reported. We need to maintain the level of calls raised last year, but focus on quality and closing them out.

CLOSE CALLS % CLOSED WITHIN 90 DAYS: We aim to close 80 per cent of Close Calls within 90 days. The 90-day target is an increase on last year, the target level has also increased from 50 per cent to 80 per cent.

PASSENGER TRAIN ACCIDENT RISK REDUCTION MEASURES: Measures our achievement of the key milestones and metrics to reduce train accident risk. This will be reported at route level as well as national, providing greater visibility and accountability in delivering a safer railway.

TOP-10 MILESTONES TO REDUCE LEVEL CROSSING RISK: Measures our achievement of the top-10 milestones to reduce level crossing risk. This replaces last year's LCRIM measure that tracked benefits achieved.

FINANCIAL PERFORMANCE MEASURE (FPM) EXCLUDING ENHANCEMENTS (EME): Measures how we are performing against our Income, Opex and Renewals budget. Our target for the year is £0 (break-even). A higher figure represents better performance against our target.

FINANCIAL PERFORMANCE MEASURE (PPM) ENHANCEMENTS ONLY (EME): Measures how we are performing against our Enhancement expenditure budget. Our target for the year is £0 (break-even). A higher figure represents better performance against our target.

16/17 CASH COMPLIANCE: 16/17 Cash Compliance is a measure of how well we have remained within our funding envelope in total. This is an aggregation of all variances against our financial budgets within Capex, Opex and income.

KEY MILESTONES OF TOP 10 ENHANCEMENT PROJECTS: These milestones measure our achievement of interim milestones of our top-10 renewal and enhancement projects. We have to deliver eight of the top-10 IP renewals and enhancements milestones during 2016/17 to achieve target.

DELIVERY PLAN ENHANCEMENT MILESTONES: Investment milestones measure our achievement of all enhancement projects as a percentage of Grip 3 & Grip 6. We have to achieve 80 per cent of all our Grip 3 and 6 enhancement milestones to reach our annual target.

COMPOSITE RELIABILITY INDEX (CRI): This is a measure of the short-term condition and performance of our assets including track, signalling, points, electrification, telecoms, buildings, structures and earthworks. The target is set at the highest level it has been in CP5.

SEVEN KEY VOLUMES: Measures delivery against budget of the seven key renewals volumes. The target is set at achieving 95 per cent of budget.

THE SCORECARD

MEASURE OF PERFORMANCE (CONTINUED)

Forty per cent of the national scorecard is made up of locally-driven measures. There is no national target for these and therefore the national scorecard will reflect the aggregate results for the measures. The following performance measures have been agreed with customers, taking into account their priorities.

PPM: PPM is the percentage of all passenger train journeys that arrive on time.

CaSL: CaSL is the measure of how many passenger trains are cancelled or are significantly late (more than 29 minutes late).

RIGHT TIME ARRIVALS: Right-time arrivals is a measure of chosen passenger services that arrive on time at certain, terminal or all stations on a journey.

FDM: FDM is our indicator of how many freight services have arrived at their destination on time.

OTHER: Any other performance measure that is not consistent across all the routes is included in the other category. This can include delay minutes, right-time departures, etc.

PEOPLE MEASURE: Measures driven locally by the customer. Each route includes one people, passenger and reduction in railway work complaints measure. The others are individual to the routes.

PASSENGER SATISFACTION: Measures driven locally by the customer. Each route includes one people, passenger and reduction in railway work complaints measure. The others are individual to the routes.

REDUCTION IN RAILWAY WORK COMPLAINTS: Measures driven locally by the customer. Each route includes one people, passenger and reduction in railway work complaints measure. The others are individual to the routes.

OTHER: The other measure category contains the rest of the measures chosen by the customer for the routes. These are not all consistent across the routes so cannot be individually categorised.

Please note this scorecard is an example only.

FIND OUT MORE

For more information on performance and Network Rail's corporate scorecard, visit http://Connect/Performance

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2.13.6   The scorecard provides clear line of sight of performance throughout the organisation. It tracks 21 measures in six key areas: safety, financial performance, investment, asset management, train performance and locally-driven customer measures.

2.13.7   The national scorecard is continually evolving to allow NR to be much more focused directly on passenger needs. This includes aligning targets and priorities much more closely with those of the local train operating companies, route by route.

2.13.8   Forty per cent of each route scorecard is now entirely dedicated to local customer-led performance and satisfaction measures.

2.13.9   The other 60 per cent of each scorecard will continue to focus on nationally set measures that are important: safety, enhancement delivery, asset management and financial elements. The national scorecard will be an aggregation of all the Route scorecards.

Safety

- Lost Time Injury Frequency Rate (LTIFR)

  Definition: Measure to determine the amount of time lost due to fatality and injury. This includes both NR staff and contractors employed by NR

  Calculation: Moving annual average of number of fatalities and lost time injuries per 100,000 hours worked

- Workforce Close Calls

  Definition: Close call is referred to as any occurrence which had the potential to cause injury or damage. A close call can be an unsafe act or an unsafe condition

- Passenger PIM Train Accident Precursor Indicator Model (Passenger)

  Definition: The overall *PIM* measures the underlying risk from train accidents by tracking changes in the occurrence of accident precursors. It monitors train accident risk to passengers, workforce and members of the public. The Passenger *PIM* is presented as a subsection of the overall PIM, retaining the benchmark value as the whole PIM indicator (being 100 at March 2002) but showing the precursor groups as they relate just to passengers

  Calculation: The *PIM* value is an annual moving average. It reflects precursors that have occurred during the previous 12 months, and is normalised by train km, to account for changes in the level of activity on the railway. The *PIM* uses the following equation: risk = frequency x consequence

- Level Crossing Risk Indicator Model

  Definition: The LCRIM provides an indexed measure of the level of risk recorded within the All Level Crossing Risk Model (ALCRM), nationally and by route, allowing NR to monitor progress in line with the Change Period target

Train performance

- Public Performance Measure (PPM)

  Definition: The public performance measure (PPM) is an indicator of the performance of passenger journeys based on the percentage of passenger trains arriving on time. For Long Distance, PPM is calculated within 10 minutes of the arrival time at the final destination while for Regional and London & South East, PPM is calculated within 5 minutes

  Calculation: PPM is the ratio of Trains within PPM to Trains Planned

- Freight Delivery Metric (FDM)

Definition: FDM is the number of commercial freight trains successfully delivered to destination defined as:

- Arriving at destination within 15 minutes of booked arrival

- With less than 15 minutes of NR or non-commercial freight operator delay

All NR & TOC cancellations will count immediately as a FDM fail.

Asset Management

- Composite Reliability Index (CRI)

  Definition: The composite reliability index measures the short term condition and performance of assets including track, signalling, points, electrification, telecoms, buildings, structures and earthworks

  Calculation: Each of the measures is assigned a weight according to the effective cost per failure, where the costs relate to train performance and safety. Schedule 8 costs are used to represent the impact of failures on train performance, and the monetised number of fatalities and weighted injuries (FWIs) are used to represent the impact on safety

  The asset weights for train performance are based on the Schedule 8 costs over the past three years. A further weighting is applied to take account of the criticality of the Route on which the failure occurs. The assigned performance weight is the product of the asset weight and the criticality weight

- Renewal Volumes

  Definition: The seven key volumes are Plain Line, S&C, SEUs, Underbridges, Total Earthworks, Wire runs and Conductor rail

Finance & Investment

- Financial Performance Measure - Total Efficiency Generated

  Definition: This represents the sum of Income, Expenditure and Capex. Financial Performance is tracked periodically and measures NR against the baseline for Income, Opex and Capex.

- Top IP Renewals & Enhancement Milestones

  Definition: These are the top 10 renewals and enhancement milestones to be delivered by IP

- All delivery plan Enhancement Milestones

  Definition: These are the Grip 3 and Grip 6 regulatory milestones

2.13.10   Each director is responsible for cascading health and safety objectives throughout their own organisations by the setting of personal objectives for individual managers. Organisational and individual objectives are specific, measurable, attainable, realistic and time-bound. Route Managing Directors or ScotRail Alliance Managing Director (Scotland only) liaise with train operators on the development of NR safety objectives, and objectives being developed by train operators, via the Route based Operational Risk Reduction and Mitigation (OPSRAM) or equivalent groups. This informs the development of the NR Business Plan with relevant actions for NR being included in the business plan and monitored via the business review process.

2.13.11   Actions that require either capital expenditure (Capex) or non-recurring operational expenditure (Project Opex) and which satisfy the safety decision

criteria for Health and Safety enhancements are progressed in accordance with ***NR's Investment Regulations***.

2.13.12   Rail Safety & Standards Board (RSSB) publishes a five-year ***Railway Strategic Safety Plan***, stating the overall industry safety objectives and reporting on safety performance. The Railway Strategic Safety Plan brings together commitments made by NR and train operators in their own plans, showing collectively how they address the key safety risk areas on the railway and the projected impact on levels of risk. The Group STE Director co-ordinates NR's input to the Railway Strategic Safety Plan, based on the actions identified by functional directors.

2.13.13   NR also takes account of the RSSB publication ***Leading health and safety on Britain's railway***.

2.13.14   As required by ***Railways Interoperability Regulations 2011 (Directive 2004/49/EC Railway Safety Directive)***, NR is committed to applying ***CSM RA***, as these are defined, to describe:

- How safety levels are measured

- The achievement of safety targets

- Compliance with other safety requirements identified in Regulation 19 (2) of ***ROGS***

2.13.15   NR provides information to the Office of Rail & Road (ORR) to demonstrate its contribution to the achievement of ***Common Safety Targets (CST)*** as defined.

3   Risk Management

3.1   Risk Assessment Process

3.1.1   NR carries out risk assessments to identify and assess all of its significant health and safety risks to employees, members of the public, contractors and other operators who may be affected from its operations. The risk assessment process describes how to identify, prioritise and manage measures to control or mitigate significant risk. These arrangements ensure that decisions on the control and management of risk are made in an informed, rational and structured manner, and demonstrate that all that is reasonably practicable is being done.

3.1.2   A thorough understanding of the health and safety risk profile of NR and its assets, is necessary to enable the organisation to manage health and safety effectively. NR has adopted the principle that for any change (technical, operational and organisational) proposed, it applies the risk management framework defined in the ***CSM RA***, including as its methods of safety verification. NR will appoint an independent assessment body, such as ***Network Certification Body (NCB)***, for changes assessed as significant. This enables compliance with the ***MHSW Regulations***, and ***ROGS***, for Safety Verification and ***CSM RA*** under a single risk management framework.

3.1.3   Risk is the combination of the consequence of an event and the likelihood of that consequence occurring. The ***MHSW Regulations*** (Regulation 3) requires each employer to carry out a suitable and sufficient assessment of the risk to everyone affected by the activities of the organisation. For NR, this means passengers, its workforce, other railway employees and the public.

3.1.4   Identification of the risk control measures to be adopted follows the established hierarchy of controls, as follows:

- Complete elimination of the hazard, or hazardous event

- Substitution of the hazard for one of lesser risk

- Use engineering controls, for example isolation of the hazard, containment of the hazard etc.

- Use administrative controls, for example documented SSOW, method statements, operational procedures, enhanced training and competence, increased supervision etc.

- Use of Personal Protective Equipment (PPE), for example safety footwear, ear defenders, protective clothing etc.

3.1.5   Risks associated with safety critical operational tasks are addressed by application of:

- The recruitment, selection and medical fitness screening for suitability

- Task requirements, taking account of Hierarchical Task Analysis (HTA)

- Providing employees with work equipment required to undertake tasks safely compliant to *Provision and Use of Work Equipment Regulations (PUWER)*

- Training and Competence requirements identified directly in the risk assessments addressed by application of NR Standard *NR/L2/CTM/201 Competence Management and specific competence requirements*

- Rules (*GE/RT 8000, National Operating Instructions*) and procedures (SP series and NR Standard *NR/L2/OHS/019 Safety of people at work on or near the line* where there is a risk to health and safety if the control measures were not to be applied in a consistent manner, or where the control measures may be considered of a more complex nature

- Regular information, communication and feedback on issues related to operational health, safety, environment and quality

- Formal meetings and escalation

- Effective arrangements for dealing with emergency situations in accordance with the applicable standards

- The investigation into accidents, incidents and other near misses to determine their root cause, the subsequent development of additional measures where necessary

- Monitoring the effectiveness of control measures through the setting and measuring against safety KPIs, and through the audit and inspection programme

3.1.6   The HSMS defines the standardised risk assessment processes which are supported by the risk profile and the use of specific tools and techniques to assess the risk and the effectiveness of mitigations. This provides NR with a consistent process to understand and reduce risk SFAIRP.

3.1.7   Specialist advice and support on the risk assessment process, roles and techniques, is available to help line managers assess risk and understand the output of risk assessments.

3.2   Safety Risk Profile

3.2.1   System safety risk encompasses all aspects of safety risk associated with the design, construction, maintenance and operation of the mainline railway network. This includes the stations and running lines, and covers risk to passengers, workforce and the public who may be affected by the operation of the railway.

3.2.2   The system safety risk profile across NR's infrastructure is described in the Safety Risk Model *(SRM)* with the Train Accident *PIM*.

3.2.3   The SRM gives a prediction of the risk arising from all of the hazardous events that could cause death or injury on the mainline railway. The SRM is updated approximately every 18 Months.

3.2.4   The *PIM* looks specifically at train accidents, providing a snapshot of the risk profile based on an analysis of performance against the precursors for train accident events. It also provides information on trends. The *PIM* is produced periodically and reported in the Safety, Health and Environment Performance (SHEP) Report.

3.2.5   These views provide the start point for analysis of specific risk areas. This analysis can also include data direct from the Safety Management Information System *(SMIS+)*, FMS and other databases along with investigation reports.

3.2.6   The system risk profile is supported by route specific risk registers owned and managed by the Heads of Route Health Safety and Environment.

3.3   Safety Risk Model (SRM)

3.3.1   NR recognises its activities carry risks with multi fatality potential. The SRM-Risk Profile Tool (*SRM-RPT*) is a risk management tool for industry stakeholders, and is used to quantify the significant causes and consequences associated with each of the 131 identified hazardous events. This enables NR to identify key areas of risk associated with its operations and to prioritise its investment in safety, using a risk based approach.

3.3.2   The model covers all NR infrastructure, and is maintained by RSSB on behalf of the industry.

3.3.3   The hazardous events are divided up into three types:

- **Train Accidents**: In general, this covers accidents involving trains that are reportable under the *Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR)*.See *SMIS+*. Structural collapses at stations are also included

- **Movement Accidents**: Accidents involving moving trains that are not included in the Train Accident category

- **Non-Movement Accidents**: Other accidents not related to the movement of trains that occur on NR infrastructure

3.3.4   The model uses historical data from a wide range of sources including *SMIS+* and FMS. This is combined with detailed analysis of particular areas to cover the chance of very rare events happening and the range of potential consequences of any incident. For each hazardous event (such as derailment of passenger train, or workforce manual handling injury), cause and consequence trees have been

developed to identify the failure sequences needed for a hazardous event to arise, and to review the potential for different outcomes of a hazardous event depending on the circumstances around the event. The SRM has all identified precursor events contributing to the causes of the hazardous events.

3.3.5   As the SRM provides a comprehensive view of the risk on NR infrastructure, it can be used to compare the risk from different types of hazard, allowing for effective prioritisation of safety management effort.

3.3.6   The SRM is a vital tool in assessing the cost-effectiveness of potential mitigations, as it allows a quantified estimate of the risk reduction to be made by looking at the effect of the mitigations on the relevant individual precursors. This can then be used as input to cost-benefit analysis.

3.4   Precursor Indicator Model

3.4.1   The *PIM* provides a guide to the risk profile and trends in the risk profile for train accidents.

3.4.2   The PIM is produced periodically by RSSB with further analysis and commentary by the STE QHSE team.

3.4.3   Each update of the *PIM* is reported in the SHEP Report providing an analysis of the train accident risk profile.

3.4.4   The figures are obtained by taking precursor data from a range of systems, notably *SMIS+* and FMS. For each precursor, a typical expected outcome has been estimated based on history and the detailed cause and consequence analysis used for the SRM. Combining the number of precursor events and their expected outcomes gives the total prediction of the risk across all precursors.

3.4.5   The *PIM* is recalibrated after each update of the SRM to allow for changes in outcome for precursors, for instance due to extra controls being introduced that reduce the chance of a precursor event resulting in an accident.

3.5   Enterprise Risk Management Framework

3.5.1   The *Enterprise Risk Management process* aims to increase the certainty of meeting corporate objectives through a comprehensive, structured and robust framework which is designed to confirm that key risks are managed appropriately and to provide transparency on how they are managed.

3.5.2   The corporate risk profile (i.e. Level 0) is reported to the executive committee and the audit and risk committee.

3.5.3   To support this, risk profiles are produced at business/functional areas (level 1) and business/functional units (level 2). Risks are escalated or consolidated as appropriate to inform the corporate level risk profile.

3.5.4   The NR Standard *NR/L1/RSK/001 Network Rail Risk Policy* outlines the mandated requirements for the management of risk (threat and opportunity) within NR. The Group Risk business unit provides procedural guidance for Risk Management on the *Group Risk Connect Page*.

3.6   Risk Tools and Techniques

3.6.1   NR has developed a range of specialist tools and techniques to support decision making in managing specific risk areas.

All Level Crossing Risk Model (ALCRM)

3.6.2   The ALCRM which is available on the **Network Rail Portal** is a networked software-based safety decision support tool that is used to assess risk at all level crossings, in a systematic and consistent manner. It provides a predicted level of risk in fatality weighted injuries (FWIs) for a given level crossing and identifies the predominant factors that influence the predicted level of risk at that crossing. It is used by NR as part of its Level Crossing risk management process to identify and prioritise safety investment.

Signal Overrun Risk Assessment (SORA)

3.6.3   The SORA process consists of a suite of tools and techniques which are available on the **Network Rail Portal** that are used to assess the risk of a train passing a signal at danger without authority, both in terms of the probability of a collision occurring and the likely consequence of that collision. It is used to assess risk at signals in a systematic and consistent manner. The tools are used in signalling layout design and steady state operations of the layout. The SORAT process provides a predicted level of risk in a unit-less score that can be converted into fatality weighted injuries (FWIs). This is used to identify signals that require a detailed assessment at a workshop where expert judgement identifies the factors that influence the predicted level of risk and determine how these modify the predicted score. This final predicted score is then used to assist in determining what action to take (see also HSMS 4.19.1 Signals Passed at Danger (SPADs)).

Route Crime Risk Management

3.6.4   NR Standard **NR/L2/OCS/050 Route Crime Risk Management** uses a decision support tool that provides a consistent and systematic methodology for assessing route crime risk at specific locations. The methodology employs a semi-qualitative scoring matrix with guidance provided on appropriate actions for each scoring level. It is used by NR as part of its route crime risk management process to identify and prioritise further control measures.

General risk assessment tools and techniques

3.6.5   The following general risk assessment tools and techniques can be applied by competent persons with specialist support and guidance from the STE function as appropriate:

- **Data Analysis**: refers to the use of historical incident data to indicate what may happen in future.

- **Visual Mapping**: involves using a picture to portray risk. The picture could be a map showing risk levels in different areas, a train showing how risk levels change between carriages, or a geographical section of infrastructure showing variability along line of route

- **Hazard Identification Prompt Lists**: a pre-defined list of topics that are expected to feature during a workshop or a set of interviews intended to identify hazards.

- **Risk Control Prompt Lists**: a complement to Hazard Identification prompt lists. They help a team or individual to think broadly about the range of possible alternatives available for the control of risk.

- **HAZID (Hazard Identification) Workshops**: a meeting of a group of experts in which a formal structure is imposed to promote the capture of knowledge and facilitate decision-making and problem solving.

- **SWIFT**: the Structured What If Technique for hazard identification. It is a systematic, multi-disciplinary, team orientated technique carried out in workshops managed by a competent facilitator. The effectiveness of the technique comes from asking questions, according to a structured plan, to identify the various types of failures and errors which are likely to result in a hazard within the system, design or process under examination.

- **Risk Log (or Hazard Log)**: a means of collecting and storing information throughout the risk management process. On computer or on paper, the log captures the hazards as they are identified and becomes a traceable record of information and decisions relevant to that risk.

- **Task Based Risk Assessments (TBRAs)**: a method generally based on a semi-quantitative assessment used for assessing individual tasks, usually associated with workforce safety. TBRAs provide a relatively simple technique which can be used by suitably trained lay-persons to determine risk associated with a range of day-to-day work activities.

- **Interviews**: information gathering question and answer exercises between two individuals, one conducting the interview and the second responding to the interviewer. In some circumstances, they are used as an alternative to workshops.

- **Hierarchy Task Analysis (HTA)**: is carried out to have a clear understanding of the scope and what work is involved. This method is favoured as it breaks down complex tasks into a number of more simplistic ones to allow detailed examination and to allow them to be easily understood and followed. The HTA outputs formed the basis for conducting a HAZOP.

- **Hazard and Operability Analysis (HAZOP)**: is carried out to identify, analyse and evaluate the risks that are related to the work. Key risks are evaluated to decide the significance of each risk identified with the operation, and selecting and implementing appropriate measures to control risk.

- **Fault Tree Analysis (FTA)**: a structured method of examining the root causes of an undesirable event – usually the failure of a complex system. It answers the question 'What combination of events could lead to this undesirable event?'. FTA is a graphical tool that has a built-in ability to examine how events combine to cause or prevent further events.

- **Event Tree Analysis (ETA)**: is, like Fault Tree Analysis, a structured graphical tool. However, ETA considers the possible outcomes that may result from an initiating event (or hazardous event), and from subsequent actions and decisions.

- **Cause-Consequence Analysis**: combines the functions of both Fault Trees (FT) and Event Trees (ET) to provide an analysis of both the root causes and the final outcomes of a hazardous event. It can be used qualitatively or quantitatively.

- **Common Consequence Tool (CCT)**: The Common Consequence Tool (CCT) provides a method for estimating the potential safety consequences

(fatalities and injuries to train occupants) arising from a train derailment, independent of the cause of derailment. For any given location specified by Engineering Line Reference (ELR) and mileage, the CCT returns a consequence rating ranging from 1 (lowest consequence) to 20 (highest consequence). The CCT models train derailments only; it does not model non-train incidents, such as injury to a trespasser on the railway, nor any direct consequences of any initial event subsequently leading to the train derailment e.g. collision with object on the line. For convenience, individual mapped Route versions of the common consequence scores have been developed and published.

- **Failure Modes and Effects Analysis (FMEA)**: a technique for identifying ways in which the constituent elements of systems can fail to perform their design intentions. It is used to evaluate and document the potential impact of each identified failure on equipment reliability and personnel safety. Due to the time consuming nature of the technique, its use is normally limited to system elements that are novel and/or have been identified through other techniques or experience as safety critical.

- **Bowtie Analysis**: a visual risk assessment tool based on the Barrier Based and Swiss Cheese risk models. The centre of a bowtie consists of a Hazard (the item/environment/act with the potential to cause harm) and a Top Event (the point at which control over the Hazard is lost). The Bowtie is structured in a Cause/Risk/Effect framework. Where Threats (Which may cause the top event to occur) are on the left of the Top Event and Consequences (Which describe the effect of the Top Event) are on the right of the Top Event. Controls to prevent Threats and controls to mitigate the consequences are represented in the form of Barriers.

3.7   Work Activity Risk Assessment

3.7.1   The operation of the railway network relies heavily on standardised processes, with many work activities carried out in the same way at different times and locations across the network. NR has therefore established a central database of work activity risk assessments.

3.7.2   NR Standard *NR/L2/OHS/00102 Work Activity Risk Assessment* details the principal process by which NR assesses risks associated with the work activities carried out by our employees and documents, and makes available, the findings of those assessments.

3.7.3   This standard is supported by a suite of NR specialist risk assessment standards for:

- *NR/L2/OHS/00107 Management Procedure - Display Screen Equipment Risk Assessment*

- *NR/SP/OHS/00114 Specialist Risk Assessment - Hand Arm Vibration*

- *NR/L2/OHS/00103 Specialist Risk Assessment – COSHH*

- *NR/SP/OHS/00106 Specialist Risk Assessment - Manual Handling*

- *NR/SP/OHS/00122 Specialist Risk Assessment - Workplace Noise*

- *NR/L2/ERG/003 Management of fatigue: Control of working hours for staff undertaking safety critical work*

- *NR/L2/OHS/00117 Specialist Risk Assessment – New and Expectant Mothers*

Function-specific procedures for undertaking WARAs underpin these arrangements further.

3.7.4   Work activity risk assessments are conducted by Nominated Risk Assessors, supported by persons who have appropriate knowledge and experience of the activity being assessed. These assessments identify any requirement for further Specialist Risk Assessment(s) where legislation dictates, or the need for specialist knowledge, skills or equipment are required.

3.7.5   A template Work Activity Risk Assessment Form is used to record the findings of the assessment and a standard risk calculation matrix is applied to quantify the level of risk. Measures to control the risks SFAIRP are identified using the knowledge and experience of the Nominated Risk Assessor(s), and other team members. The final findings of the assessment are documented, including existing and additional control measures.

3.7.6   Completed work activity risk assessments are reviewed by Nominated Reviewers within each function, which check that the assessment is suitable and sufficient.

3.7.7   Work activity risk assessments are further reviewed and amended at a frequency dependent upon the level of residual risk identified by the original assessment. Reviews are also conducted when the existing risk assessment has been identified as no longer reflecting working practices or adequately controlling the risk.

3.7.8   NR's arrangements for the planning, risk assessment and delivery of multi-activity work sites are defined in NR Standards *NR/L3/MTC/RCS0216 Risk Control Manual*, and *NR/L2/OHS/0044 Planning and managing construction work*, and *NR/L2/OHS/0047 Application of the Construction (Design and Management) Regulations to Network Rail Construction Projects* which requires each business unit to document their CDM Management Procedures, including those for risk management.

3.7.9   Control measures identified by risk assessments, are included in documented SSOW within each function. Functional documented SSOW are reviewed before they are applied at local level to identify any further control measures that may be required due to local conditions. These reviews either confirm that identified control measures are suitable and sufficient taking into account the working environment and local conditions, or identify additional control measures which are then recorded for briefing to persons who may be affected. Employee briefings are undertaken by line managers through the normal briefing process.

3.7.10   The national database of assessments is provided and maintained by the Principal Workforce Safety Specialist within the STE function. Work activity risk assessments held on the database are available to all employees through *Connect*.

3.7.11   A plan for measuring activities designed to prevent the occurrence of injuries and work-related ill health (active monitoring) is considered. Active monitoring is established during the transitional period and post transitional period of change to ensure the planned safeguards are effective and perform as intended.

3.8   Safety Decision Criteria

3.8.1   NR has arrangements that support a risk based safety decision making framework to help manage and prioritise safety activity. The procedure outlines the legal and

best practice requirements for making safety decisions and establishes a structured safety decision making process. It provides a standard which specify the requirements to ensure that safety decisions are proportionate, made in a consistent and transparent manner and demonstrate that safety risks have been reduced to a level which is as low as reasonably practicable (ALARP). This is consistent with the industry Taking Safe Decisions model.

3.8.2   NR has adopted the RSSB *Safety Decision Criteria* which sets out a framework for taking decisions and helps meet the reasonably practicable legal standard. Risk assessment appraisal methods and professional judgement are applied to safety investments in determining reasonable practicability.

3.8.3   Safety on the railway depends largely on the proper design, construction, maintenance and operation of the network. Most safety improvements are therefore likely to come from better process, managerial control and behaviour, rather than from expensive infrastructure enhancements. In these cases, simple inexpensive controls can be adopted on the basis of qualitative analysis, using judgement and common sense.

3.8.4   Where significant change is proposed (for example, infrastructure, organisation, or operation), Network Rail applies *CSM RA* to determine what safety enhancements are reasonably practicable.

3.8.5   Where infrastructure improvements are appropriate, the most efficient time to make these is likely to be at the time the infrastructure is due for renewal. Infrastructure assets generally are renewed in modern equivalent form and to the latest standards, which in most cases include reasonably practicable improvements. Where assets are being renewed in line with asset policy and relevant standards, scheme specific investment appraisal is not generally required.

3.8.6   However, there are occasions where it may be reasonably practicable to make safety enhancements to the infrastructure before its due renewal date, or over and above what is required by standards. Also, some standards specify certain requirements where reasonably practicable. In these circumstances, NR applies quantitative analysis combined with specific safety decision criteria for determining what is reasonably practicable and therefore mandated by the *Health and Safety at Work (HASAW) Act*.

3.8.7   The appraisal methodology applied depends on the type of scheme under consideration and the source of funding. Safety schemes required under *HASAW* are generally funded from the expenditure allowance – i.e. they are a legally required cost of doing business and as such are built into the expenditure allowance agreed as part of the regulatory funding settlement for each Control Period. Some of these are built into the business plans of each function and summarised in NR's strategic business plan. Guidance on this is defined in NR's **Investment Regulations**.

3.8.8   When the costs and safety benefits of a proposed risk control are being assessed quantitatively, it is necessary, as a way of comparison, to place a monetary value on both costs and safety benefits. NR applies this principle by using the Value of Preventing a Fatality (VPF) as a guide to what is reasonably practicable.

3.8.9   When safety improvements are being considered and the cost is less than the monetary value of the safety benefit determined by applying the VPF, NR will, generally, implement the improvement. Where the cost is above the monetary

value of the safety benefit, NR will apply professional judgement in determining whether the cost is grossly disproportionate to the safety benefit and it is reasonably practicable to implement the improvement. In making this judgement, NR will pay particular attention to:

- The degree of uncertainty in the assessment of costs and safety benefits

- The maximum potential safety consequences

- Absolute legislative requirements

3.8.10   Safety investments are authorised by the relevant investment panel, the arrangements for which are defined in NR's **Investment Regulations**.

3.8.11   The VPF can be found on the **RSSB Website**. This value is updated annually in line with the VPF adopted by the Department for Transport (DfT) and other Railway Group members. The VPF applies to fatalities and weighted injuries, where one fatality is considered equivalent to 10 major injuries or 200 minor reportable injuries or 1000 minor non-reportable injuries.

3.8.12   When the costs and/or benefits are incurred or delivered over a number of years, NR applies discounted cash flow analysis to determine the net present value of safety benefits compared to costs. Guidance on this and the discount rates applicable are defined in the NR **Investment Regulations**.

3.8.13   A similar quantitative approach, using formal cost benefit analysis, is also applied to demonstrate the reasonable practicability of changes to process that are likely to incur significant implementation costs.

3.8.14   When setting priorities for the development of further risk control measures, consideration is given to the levels of risk to which individuals within particular segments of the population are exposed.

3.8.15   The Health & Safety Executive (HSE) guidance publication, **Reducing Risks Protecting People (2001)**, describes a tolerability of risk framework based on risk to which individuals within particular segments of the population are exposed. Risks to individuals are categorised as Unacceptable, Tolerable and Broadly Acceptable, with different priorities identified for each category.

3.8.16   The Tolerability of Risk Framework is a conceptual model and its application is not mandated through legislation. The assessment of the level of individual risk depends largely on the selection of the segment of the population. There are no legislated quantified boundaries between the different ranges. However, the HSE has suggested guidelines of 1:1,000,000 fatality risk for the boundary between broadly acceptable and tolerable, and 1:10,000 (public) and 1:1,000 (workforce) fatality risk for the boundary between tolerable and unacceptable.
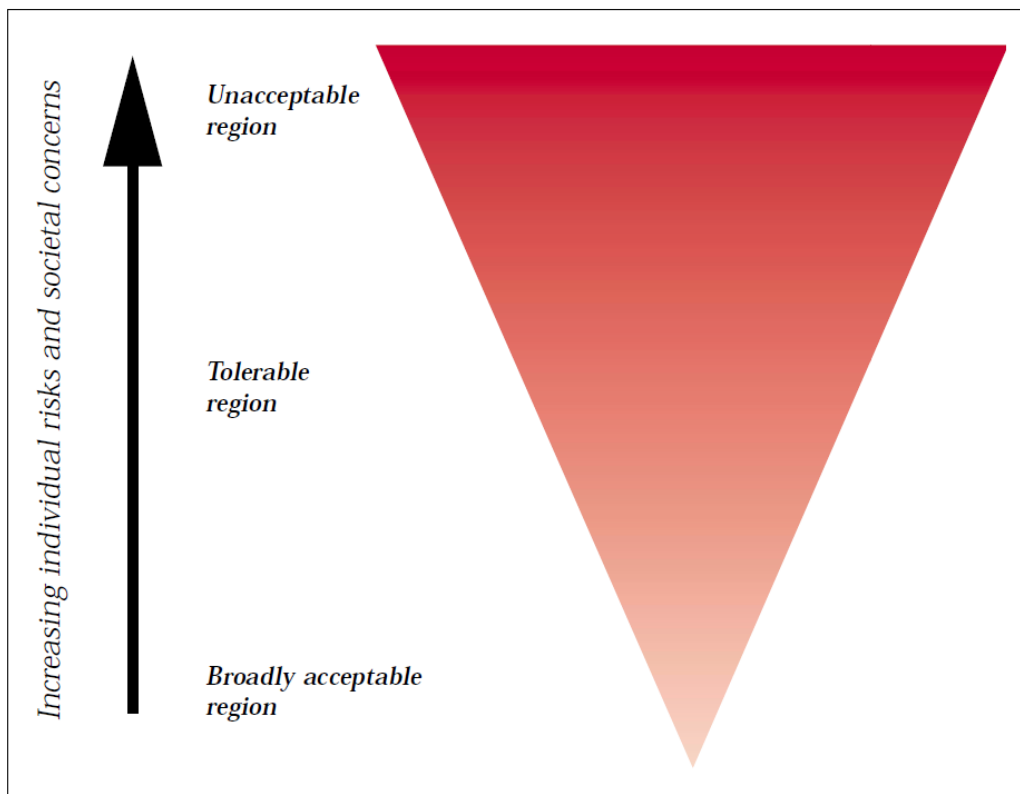
3.8.17   The legislative requirement to reduce risks, SFAIRP, and the application of the standard VPF, applies within each band. However, the priority and effort applied to analysing risks and developing potential measures for further risk mitigation increases in line with the level of individual risk.

3.8.18   For NR's undertaking, most population groups fall within the tolerable range and NR is committed to developing and evaluating options for further risk reduction and implementing those that are reasonably practicable.

3.8.19   In some cases the risks are considered so low as to be broadly acceptable, i.e. they are generally considered to be insignificant and adequately controlled. In these cases there is no requirement for systematic evaluation and risk reduction, although there is still a requirement to implement any further measures which are reasonably practicable.

3.8.20   However, there may be some population groups where the risks to individuals is assessed as within or approaching the unacceptable range. In these cases NR will allocate a high priority to actively develop and evaluate options for further risk reduction and implement those that are reasonably practicable.

3.8.21   Further guidance on the framework for taking decisions affecting safety in the GB rail industry, and within which NR operates and applies as appropriate, is provided in the RSSBs **Taking Safe Decisions** publication.

3.8.22   NR manages risk created by external parties. Each Route is developing Asset Protection processes, their purpose of which is to evaluate the level of risk posed to the operational railway from external parties, and how control of risk is implemented and managed.

3.9   Monitoring the effectiveness of Risk Control Arrangements

3.9.1   NR monitors on a regular basis, the effectiveness of health and safety management arrangements by specific health and safety performance groups at appropriate levels of the organisation. Health and safety assurance is provided under the monitoring and review part of the HSMS to test and observe policies and arrangements are implemented as intended. NR Standard *NR/SP/ASR/036 Network Rail Assurance Framework* provides details of these arrangements.

3.9.2   Specific performance of the risk management arrangements in terms of their effective control of risk is understood as a result of the following monitoring processes. These processes can also identify additional workplace or other operational hazards, in which case, these hazards are included in the risk assessment review process:

- Accident, incident and close call reporting and investigation

- Re-active monitoring – health and safety performance against targets, personal accident rates, operational accident and incident rates etc.

- Pro-active monitoring – measured performance against safety, health, environment and quality plan targets, workplace/worksite management visits, *safety conversations*, completed, effective briefs delivered, competence assessments completed etc.

- Findings from audits conducted

- Findings from health and safety inspections and senior management visits

- Feedback from employee health and safety representatives, both informally, and formally via the National Health, Safety and Welfare Council, and feedback from industry partners and interface organisations

3.9.3   Corrective actions necessary to maintain, or improve upon, performance of the HSMS that may be identified by any of the above methods will be reviewed at the Cross Functional Quarterly Safety Assurance Meetings and allocated to Responsible Managers for action.

3.9.4   Progress against corrective actions is monitored by the Cross Functional Quarterly Safety Assurance Meeting.

3.10   Review of Risk Control Arrangements

3.10.1   HSMS 8 Learning describes the range of reviews that are adopted for ensuring the effectiveness of NR's health and safety management arrangements.

3.10.2   Specific overall performance of the operational risk management arrangements will be reviewed via measurement against operational safety and health performance indicators. This performance is outlined in HSMS 7 and is reviewed formally within defined timescales by the following groups:

- Network Rail Board Exec Group 1

- Safety Health & Environment Committee (SHEC)

- NSHERG meeting

- Functional Executive Review Meetings (ERMs)

- National Health, Safety and Welfare Council

- Local Health and Safety Committee

3.10.3   Risk assessments are reviewed for continued suitability in the following circumstances:

- Routine review, the risk assessment process will specify the nature and frequency of workplace inspection, monitoring systems and procedures according to outcomes of the risk assessment, minimum statutory requirements and industry best practice

- When circumstances change affecting operational risk

- When new operations are considered

- With the introduction of new or changed regulatory requirements, standards or best practice guidance

- Following receipt of intelligence that may impact on the validity of the risk assessments, for example from accidents, incidents, or near misses, audit reports etc.

- When new technology is introduced

- When updates are made to existing machinery, plant etc.

3.10.4   Methods analogous to those used for the original hazard identification and risk assessment process will be employed for review i.e. local Responsible Managers own the assessments in their area of responsibility, hence are responsible for ensuring that the risk assessments remain suitable and sufficient, using trained and competent, risk assessors to assist in the review.

4   Implementing Controls

4.1   People

Organisation

4.1.1   NR's organisational structure defines how NR allocates responsibilities and tasks amongst its workforce and co-ordinates these to deliver its business objectives. Responsibilities are allocated in a structured way so that all employees have a clear understanding of their individual safety responsibilities.

4.1.2   Organisation charts show the job titles of specific posts and the direct reporting lines between posts are available on *ORG Plus Organisation charts* via Connect.

4.1.3   Employees are issued with *JDs* giving them a clear understanding of their accountabilities. Each line manager is responsible for issuing each of their team with a copy of their JD and briefing them on their roles and accountabilities.

4.1.4   Where employees are allocated to roles outside of the formal organisation charts (e.g. temporary project work) any safety responsibilities specific to their role are communicated to them in writing. Where contract staff are allocated to posts shown on the formal organisation charts, or to temporary project work, their safety responsibilities are also communicated to them in writing.

4.1.5   Following the implementation of a devolved model, NR operates in a matrix organisation comprising National functions and Routes. These two elements of its business need to operate effectively together to deliver NR's objectives.
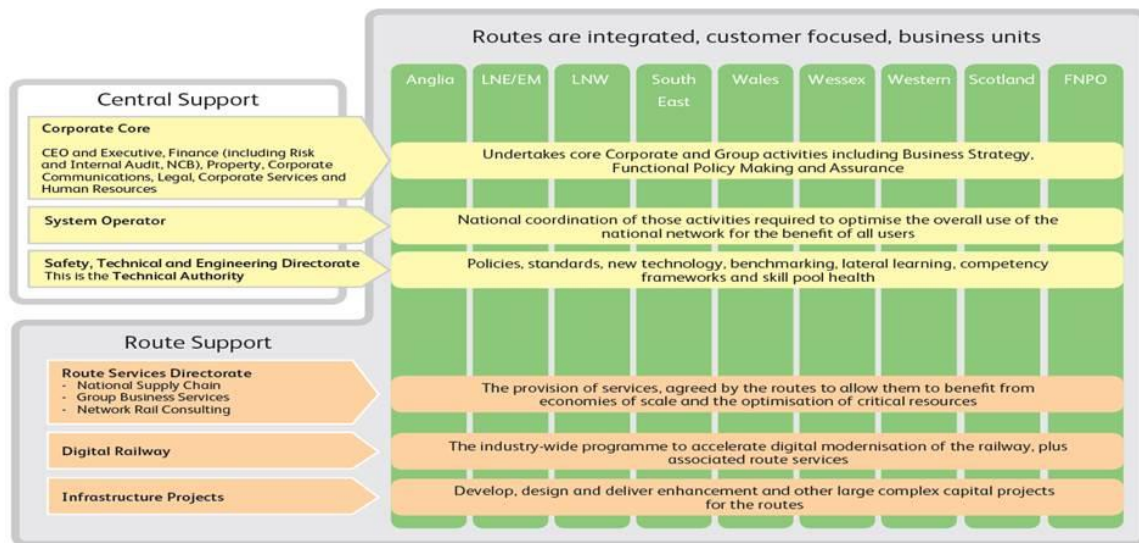
4.1.6   As part of its management system NR is required to document and provide guidance on how the business operates, specifically in the following key areas:

- Leadership

- Risk Management

- Controls

- Monitoring

- Learning and improvements

4.1.7   The *Principles of the Matrix Framework* (formerly known as *The Devolution Handbook*) is a key part of this documentation. Its purpose is for use by the Routes and the National functions to explain how the matrix organisation is designed to operate and reflect the organisation's management arrangements for delivering its core processes.

4.1.8   As part of the creation of the Network Rail Integrated Management System (IMS), led by the STE directorate, it is proposed that this document acts as the initial framework to be incorporated into the initial IMS design by:

- Providing clarity on the top level accountabilities of the business (Routes and National functions)

- Supporting the business in understanding how NR discharges these key requirements

- Supporting discharging the requirements of HSMS and the Safety Validation commitments

- Providing the framework for the business to understand, support and continuously improve the key business process and accountabilities

NR alliances

4.1.9   In all Routes NR, and the TOCs are working closely together, collaborating even more to deliver greater benefit to customers. Formally integrated and co-located

teams are not always a prerequisite for collaboration, as active partnership can still be achieved through effective leadership that fosters a culture of co-operation. A number of teams in several routes now work in the spirit of an 'alliance' without any structural changes.

4.1.10   The partnership developed between NR Wessex route and the TOC has the shared objective of working together to deliver the best possible service to customers and has delivered a number of benefits including, reduced delays per incident, better train performance and a joint approach to managing the impact of the weather on the railway. Formal Alliance teams are in place in Control, Performance, Planning and Waterloo Station.

4.1.11   The ScotRail Alliance is a close working relationship between the NR Scotland route and the TOC, which is to improve the railway in Scotland for customers by working together better. While remaining separate companies, both organisations will work to achieve common aims and objectives led by a single managing director.

4.1.12   The alliances have discrete individual agreements with each Operator, but all the agreements have common features including:

- NR and the Operator will remain separate entities

- Employees will continue to have the same employer with their current terms and conditions

- Each organisation continues to be ultimately accountable for their own areas of responsibility

- The interests of other passenger rail companies and freight Operators are protected

4.1.13   The agreements in place commit the companies to working together and to work up specified projects where there is an opportunity for more integrated working and an opportunity to improve the service to passengers or reduce cost. The alliances may look at how stations can be better managed to provide a better service to passengers, how engineering work can be better planned or how improvements to train punctuality can be delivered.

Key Safety Posts

4.1.14   Certain posts have specific responsibilities identified within the HSMS. These posts are designated as *Key Safety Posts* and the *JDs* endorsed accordingly. Nominated deputies are appointed for each Key Safety Post to cover for prolonged periods of absence. Nominated deputies are issued with copies of the JD of the Key Safety Post and briefed on the specific safety responsibilities of the post for which they are deputising in part or in whole.

4.1.15   These key safety posts exercise decisive authority over actions, products, decisions and policies that have a direct and material effect on the ability of NR to discharge its dutyholder responsibilities under *ROGS*.

4.1.16   These posts cannot be left uncovered for prolonged periods without detriment to NR's ability to discharge its dutyholder responsibilities under *ROGS*, hence the need for nominated deputy(s) to be briefed on the accountabilities and key responsibilities of the role.

4.1.17   In order to identify if a particular post is a Key Safety Post, it is necessary to identify the following:

- Does the post have specific responsibilities identified against it in the HSMS or are there plans to do so?

- Does the post have a nominated deputy, i.e. the post is key, and cannot be left uncovered for prolonged periods?

4.1.18   There are no general corporate criteria to assist in making the determination whether a post has specific responsibilities that need to be included in the HSMS in the first place. It is therefore a matter reserved for individual business units to judge, albeit subject to challenge and rejection by the CHSQO, where they believe that the judgement is perverse, or would create a situation where the term has effectively become meaningless, and could be applied to any managerial post within the organisation.

4.1.19   To help to differentiate between Key Safety and non-Key Safety posts, it is necessary to view a post in the context of the concepts of accountability and decisive authority. Accountability is the acknowledgment and assumption of ultimate responsibility for actions, products, decisions, and policies including their administration, governance, and implementation within the scope of the role or employment position, and encompassing the obligation to report, explain, and be answerable for, resulting consequences. Decisive authority concerns decisions that the post or body can legitimately take autonomously without reference to a higher authority in the normal course of events.

4.1.20   Therefore, a key safety post is something that meets all the following criteria:

- It exercises decisive authority over actions, products, decisions and policies including their administration, governance and implementation within the scope and accountabilities of the post. The actions, products, decisions and policies have a direct and material effect on the ability of NR to discharge its dutyholder responsibilities under *ROGS*

- The post cannot be left uncovered for prolonged periods without detriment to NR's ability to discharge its dutyholder responsibilities under *ROGS*, hence the need for nominated deputy(ies) to be briefed on the accountabilities and key responsibilities of the role

4.1.21   The accountabilities of a functional Head are categorised in three areas:

Technical Direction

- Setting the technical direction in their field of expertise, directing the translation of business objectives into technical policy

- Providing technical input to Network Rail Standards, including ongoing ownership and arbitration of technical components

- Influencing the development of statute, external regulations and Railway Group Standards so that Network Rail's interests are protected

- Providing guidance and interpretation of technical requirements for compliance with statute, external regulations and Railway Group Standards

- Providing single point leadership for technical communities and directing the professional development within these communities

- Catalyst for technological change, providing professional direction in support of research and development into more effective technical solutions to business requirements

- Providing technical advice and strategy to the Board, SHE Committee, Executive Committee, NSHERG, etc.

- Representing NR at technical bodies in the UK industry (ICE, IET, IMechE, etc.) and providing Network Rail's technical input to European and global level liaison (UIC, CEN, etc.)

Technical compliance

- Specification of technical audit and monitoring requirements in the form of audit, verification and monitoring protocols

- Providing technical input to acceptance process

- Support to procurement process

Technical Authority

- Setting the framework that enables railway system operation at lowest whole life cost within tolerable risk, and implementation of change that maintains continued safe and efficient operation of the railway

- Supporting development of, and setting technical competence requirements for, key activities and posts

- Review and acceptance of technical recommendations arising from Formal Inquiries

4.1.22   The following posts within NR example designated Key Safety Posts:

- Chief Executive [Board]

- Route Services Director [Route Services]

- Managing Director, Group Digital Railway [Digital Railway]

- Chief Systems Engineer [Digital Railway]

- Director, Telecoms Asset Management [Digital Railway]

- Professional Head (Telecoms) [Digital Railway]

- Head of Operations (Telecoms) [Digital Railway]

- Head of Telecoms (Asset & Performance Management) [Digital Railway]

- National Telecoms Asset & Performance Manager [Digital Railway]

- Head of Telecoms (Network Operations) [Digital Railway]

- Head of Field Services [Digital Railway]

- Managing Director, RSSCO [Route Services]

- Principal Engineering Manager [Route Services]

- OTM Performance Manager [Route Services]

- Head of Driver Standards [Route Services]

- Fleet Manager (Depot) [Route Services]

- Managing Director, Property [Property]

- Director, Corporate Communications [Communications]

- Group HR Director [Human Resources]

- Managing Director [Infrastructure Projects]

- Regional Director (Central) [Infrastructure Projects]

- Regional Director (Scotland & North East) [Infrastructure Projects]

- Regional Director (Southern) [Infrastructure Projects]

- Regional Director (Wales & West) [Infrastructure Projects]

- Engineering Assurance Director [Infrastructure Projects]

- Technical Head of Discipline (Track) [Infrastructure Projects]

- Technical Head of Discipline (E & P) [Infrastructure Projects]

- Technical Head of Discipline (Signalling) [Infrastructure Projects]

- Technical Head of Discipline (Buildings & Civils) [Infrastructure Projects]

- Technical Head of Discipline (Construction Management) [Infrastructure Projects]

- Programme Director (Signalling – Northern) [Infrastructure Projects]

- Programme Director (Signalling – Southern) [Infrastructure Projects]

- Programme Director (Track) [Infrastructure Projects]

- Programme & Technical Services Director [Infrastructure Projects]

- Major Programme Director [HS2]

- Major Programme Director [Thameslink]

- Managing Director, England & Wales [Route Businesses]

- Scotrail Alliance Managing Director [Route Businesses]

- Managing Director, Freight & National Passenger Operators [Route Businesses]

- Route Managing Director [Route Businesses]

- Chief Operating Officer [Route Businesses]

- ScotRail Alliance Infrastructure Director [Route Businesses]

- Head of Operations Delivery [Route Businesses]

- Head of Maintenance Delivery [Route Businesses]

- Infrastructure Maintenance Delivery Manager [Route Businesses]

- Infrastructure Maintenance Engineer [Route Businesses]

- Current Operations Manager (IECC or Pre-IECC or SR&C) [Route Businesses]

- Head of Integrated Control [Route Business Scotland]

- Alliance Control Manager [Route Business E&W]

- Operations Manager [Route Services]

- Local Operations Manager [Route Businesses]

- Electrical Control Room Operator Manager [Route Businesses]

- Shift Station Manager [Route Businesses]

- Station Operations Manager (Alliance, Birmingham) [Route Businesses]

- Route Programme Director (Works Delivery) [Route Businesses]

- Director, Route Safety & Asset Management [Route Businesses]

- ScotRail Alliance Sustainability & Safety Assurance Director [Route Business Scotland]

- Head of Route Safety Health & Environment [Route Businesses]

- Operations Risk Advisor [Route Businesses]

- Route Asset Manager (Discipline) [Route Businesses]

- Asset Protection Project Manager [Route Businesses]

- Area General Manager (High Speed) [Route Businesses]

- Head of High Speed Operations [Route Businesses]

- Operations Manager (High Speed) [Route Businesses]

- Local Operations Manager (High Speed) [Route Businesses]

- Competence Management Systems Manager (High Speed) [Route Businesses]

- Operational Security & Contingency Planning Manager [Route Businesses]

- Security & Contingency Planning Specialist [Route Businesses]

- Senior Operations Manager (Supply Chain Operations) [Route Services]

- Head of Operations Principles & Standards [STE]

- Operational Planning Project Manager [System Operator]

- Access Planning Manager (National) [System Operator]

- Capacity Planning Director [System Operator]

- Support Services Manager [System Operator]

- Group Safety, Technical & Engineering Director [STE]

- Chief Engineer [STE]

- Chief Mechanical & Electrical Engineer [STE]

- Professional Head of Asset Data [STE]

- Professional Head of Plant [STE]

- Professional Head of Traction & Rolling Stock [STE]

- Professional Head of Power Distribution HV/LV [STE]

- Professional Head of Contact Systems AC/DC [STE]

- Head of System Compatibility [STE]

- Chief Track & Lineside Engineer [STE]

- Professional Head of Track [STE]

- Lead Engineering Capability Manager (Track, S&C & Lineside) [STE]

- Head of Lineside [STE]

- Chief Control, Command & Signalling Engineer [STE]

- Professional Head of Signalling [STE]

- Professional Head of Switches & Crossings

- Professional Head of Level Crossings Engineering [STE]

- Chief Buildings & Civils Engineer [STE]

- Professional Head of Structures [STE]

- Professional Head of Buildings & Architecture [STE]

- Professional Head of Geotechnical [STE]

- Professional Head of Mining & Tunnels [STE]

- Professional Head of Drainage [STE]

- Professional Head of Maintenance [STE]

- Chief Health, Safety & Quality Officer [STE]

- Head of Corporate Workforce Safety [STE]

- Principal Workforce Safety Specialist [STE]

- Principal Fire Safety Specialist [STE]

- Head of Corporate Passenger & Public Safety [STE]

- Principal Operations Safety Specialist [STE]

- Head of Ergonomics [STE]

- Group Chief Information Officer [Route Services]

- Head of Security Governance [STE]

- Chief Systems Assurance Engineer [STE]

4.2   Safety Critical Work Posts

4.2.1   NR is identified as a controller of safety critical work in accordance with ROGS. These posts are designated as Safety Critical Work Posts and the JD is endorsed accordingly. The occupant of the post is required to sign the JD.

4.2.2   Safety critical work means any safety critical task carried out by any person in the course of their work. A safety critical task means:

a. In relation to a vehicle used on NR managed infrastructure (NRMI):

   i. Driving, dispatching or any other activity which is capable of controlling or affecting the movement of that vehicle

   ii. Signalling, and signalling operations, the operation of level crossing equipment, receiving and relaying of communications or any other activity which is capable of controlling or affecting the movement of that vehicle

   iii. Coupling or uncoupling

   iv. Installation of components, other than where the installation of those components is subject to supervision and checking by a safety critical worker or a controller of safety critical work

        v. Maintenance, other than where the carrying out of that maintenance is subject to supervision and checking by a safety critical worker or a controller of safety critical work

        vi. Checking that that vehicle is working properly and, where carrying goods, is correctly loaded before being used

  b. In relation to NRMI:

        i. Installation or maintenance of any part of it, or of the telecommunications system relating to it, or used in connection with it, or of the means of supplying electricity directly to that transport system or to any vehicles using it or to the telecommunications system, other than where the carrying out of that task is subject to supervision and checking by a safety critical worker or a controller of safety critical work

  Note - the definition of maintenance includes:

        i. Any repair, alteration, reconditioning, examination or testing of infrastructure

        ii. Controlling the supply of electricity directly to it or to any vehicles used on it

        iii. Receiving and relaying of communications

        iv. Any person ensuring the safety of any persons working on or near to the track, whether or not the persons working on or near to the track are carrying out safety critical work

  c. In relation to training, any practical training or the supervision of any such training in any of the tasks set out in subparagraphs (a) to (b)

4.2.3 The above criteria should be used to determine if a post is a Safety Critical Work Post and, where it is not included in the following list, the HSMS Specialist should be advised accordingly.

4.2.4 Every controller of safety critical work is required to ensure, SFAIRP, that a person under their management, supervision or control, with the exception of where that person is receiving practical training in a safety critical task, only carries out safety critical work where:

  a. That person has been assessed as being competent and fit to carry out that work following an assessment by an assessor

  b. There is an accurate and up to date record in writing of that persons competence and fitness which references any criteria for determining competence and fitness against which that assessment of competence was made

  c. The record, or an accurate summary of the record referred to in sub-paragraph (b) is available for inspection, on reasonable request, by any other controller of safety critical work or any operator who may be affected by any safety critical work carried out or to be carried out by that person, for the purposes of establishing that persons competence and fitness to carry out safety critical work

  d. There are in place arrangements for monitoring the competence and fitness of that person

4.2.5 Every controller of safety critical work is required to review, without unreasonable delay, any person's competence or fitness assessment where:

a. They have reason to doubt the competence or fitness of a person to carry out that safety critical work

b. There has been a significant change in the matters to which the assessment relates

c. To undertake a reassessment of competence or fitness where the result of a review of competence or fitness indicates that it is required

4.2.6   Every controller of safety critical work is required to have arrangements in place to ensure, SFAIRP, that a safety critical worker under their management, supervision or control does not carry out safety critical work in circumstances where they are so fatigued, or where they would be liable to become so fatigued that their health or safety or the health or safety of other persons could be significantly affected.

4.2.7   For all safety critical work under its control, NR has systems in place for adequately managing the competence and fitness of those carrying out safety critical work and the associated fatigue risks. The arrangements are applied to all tasks that are defined in the *Railways (Safety Critical Work) Regulations* and in accordance with the relevant *ORR guidance*. Where safety critical workers are NR's own employees this is done through its competence management and line management arrangements.

4.2.8   Certain posts within NR require the occupants of the posts to undertake safety critical work and these posts are designated as Safety Critical Work Posts. The following are extracts of posts within NR undertaking Safety Critical Work as the core part of their normal duties:

- Signallers (including Level Crossing Keeper)

- Electrical Control Room Operators

- Incident Officers

- Operations Controllers

- Operations Managers

- Signalling and Telecoms Maintainers

- Track Maintainers

- Electrification and Plant Maintainers

- Station Operations Manager (Birmingham)

- Chief Trains Managers (Birmingham)

- Platform Supervisors

- Platform Staff

- Isolation Planners

- Senior Operations Delivery Managers

- Operations Delivery Manager

- Route Asset Managers

4.2.9   The following are extracts of Route Services Supply Chain Operations (RSSCO) posts that have been designated as Safety Critical Work Posts:

- OTM Performance Manager

- Head of Driver Standards

- Fleet Manager (Depot)

- Fleet Engineering Manager (Depot)

- Training & Competency Manager (Operations)

- Rail Plant Controller

- Maintenance Manager

- OTM Maintenance Supervisor

- OTM Maintenance Technician/Operator

- OTM Maintainer/Operator

- OTM Maintainer

- OTM Technician

- Operations Manager

- Driving Standards Manager

- OTM Supervisor North

- OTM Supervisor South

- Trainer Assessor

- Driver Operator

- Operator Maintainer

- Depot Operations Manager

- Project Operations Manager

- Rail Fleet Support Engineer

- Fleet Engineer (Materials Delivery)

- Fleet Engineering Manager (Materials Delivery)

- Fleet Engineer (Grinders)

- Fleet Engineer (Infrastructure Monitoring)

- Fleet Engineer (Stoneblowers)

- Fleet Engineer (Seasonal Fleet and B&R)

- Fleet Engineering Manager (Grinders)

- Fleet Engineering Manager (Infrastructure Monitoring)

- Fleet Engineering Manager [MPSB]

- Fleet Engineering Manager [Stoneblowers]

- Fleet Engineering Manager [Seasonal Fleet & B&R)]

- Depot Engineering Manager

- Operations Assurance Manager

- Operations Assurance Specialist

- Principal Engineering Manager

- Fleet Engineer (High Output)

- Fleet Engineer (Plant)

- Fleet Engineer (T&RS)

- Fleet Engineering Manager (High Output)

- Fleet Engineering Manager [Plant]

- Fleet Engineering Manager [T&RS]

- Logistics Operative

- Logistics Supervisor

- Maintenance Electrician

- Maintenance fitter

- Mobile Wheel Lathe Operative

- Mobile Wheel Lathe Supervisor

- Production Supervisor

4.2.10   The following are extracts of posts that are responsible for the examination of civil infrastructure assets and thus undertake safety critical work activity:

- Construction Management Assistant

- Senior Earthworks Management Engineer

- Senior Asset Engineer (Building Fabric)

- Asset Engineer (Building Fabric)

4.2.11   The following are extracts of posts within Asset Information Services that undertake safety critical work activity:

- Delivery Manager

- Examination Inspector [Lead]

- Examination Inspector

4.2.12   Other posts within NR require the occupants to carry out safety critical work in certain circumstances. This would include covering the safety critical work activities of any of the posts listed above, or undertaking any of the following extract of auxiliary operating roles (listed by the term used to denote a formalised standard of competence where relevant):

- Senior Person in Charge of Possession (SPICOP)

- Person in Charge of Possession (PICOP)

- Engineering Supervisor (ES)

- Handsignaller (HS)

- Level Crossing Attendant (LXA)

- Point Operator (PO)

- Protection Controller (PC)

- Controller of Site Safety (COSS)

- Individual Working Alone (IWA)

- Lookout/Site Warden (LKT/SW)

- Bridge Strike Examiner (BSE)

- Bridge Strike Nominee Level 2 (BSN2)

- Bridge Strike Nominee Level 1 (BSN1)

- On-Track Plant Crane Controller (OTP CC)

- On-Track Plant Machine Controller (OTP MC)

- Authorised persons OHLE (AP)

- Nominated persons OHLE (NP)

- Nominated Persons to Remove Obstructions from OHLE

- Nominated Persons to Authorise Movements over Broken Rails

- Pilot working

- POS Representative

- Ground frame operations

- On-Track Plant Operator

- Safe Work Leader (SWL)

4.2.13   The posts most likely to fulfil these roles are:

- Operations Manager

- Local Operations Manager

- Mobile Operations Manager

4.2.14   Where employees are required to undertake any of these roles their JD is endorsed as Safety Critical Work Post. Where NR employs contractors to carry out safety critical work, they are required to have suitable arrangements in place directed towards ensuring that competence, fitness and fatigue are properly managed. NR does this through its supplier qualification and arrangements. NR co-operates as necessary with other controllers of safety critical work to enable them to discharge their responsibilities under the **RSCW Regulations**.

4.3   Heads of Disciplines

4.3.1   A Head of Discipline is the NR senior professional within a recognised technical discipline.

4.3.2   Each Head of Discipline is accountable for:

- Guidance on, and interpretation of, technical requirements for compliance with statute, external regulations and **Railway Group Standards (RGSs)**

- Providing technical input to NR Standards, including ongoing ownership of technical components

- Influencing the development of statute, external regulations and **RGSs** so that NR's interests are protected

- Provision of professional leadership, including supporting research and development into more effective technical solutions to business requirements

- Supporting development of, and setting technical competence requirements for, key activities and posts

- Provision of expert technical advice to the business, including reviewing business proposals from a technical perspective. This includes:

  ⬥ Support to the acceptance process

  ⬥ Providing technical support to the procurement process

  ⬥ Review and acceptance of technical recommendations arising from Formal Inquiries

  ⬥ Representing NR at technical bodies at various levels from UK industry (ICE, IEE, IMechE, IRSE, etc.) to European and global level (UIC, CEN, etc.)

  ⬥ Specification of technical audit and monitoring requirements in the form of audit and monitoring protocols for each owned standard

4.3.3   The Head of Discipline is accountable across NR for the quality of the technical advice and support provided to the business. The Head of Discipline is not accountable for assuring compliance with NR Standards and advice. This accountability lies with the head of the function concerned.
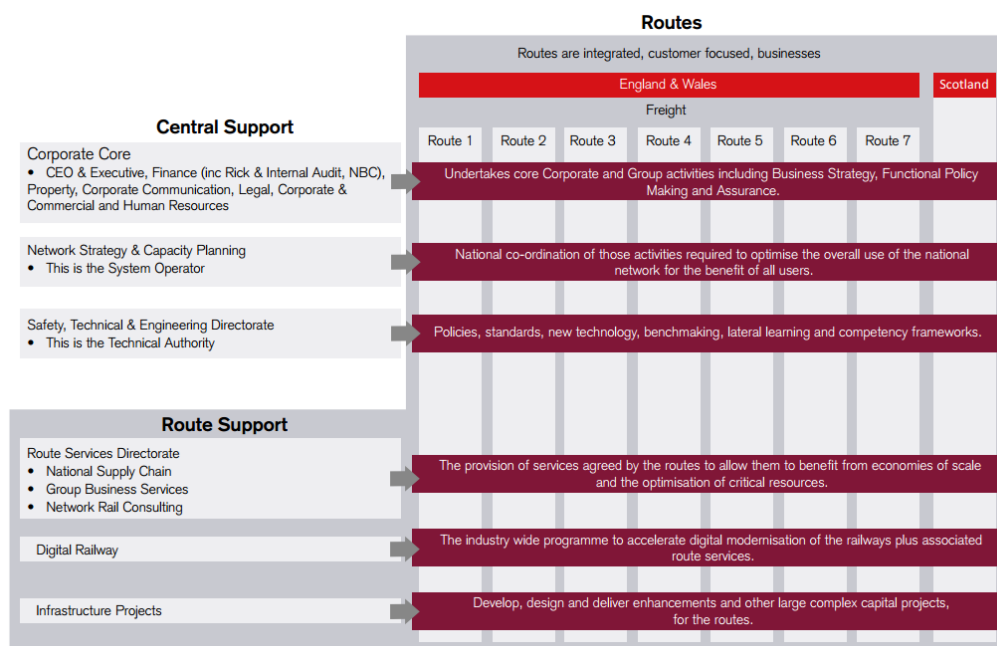
4.3.4   A Head of Discipline is required to hold a recognised technical qualification in a discipline appropriate to their post, and to be a member of an appropriate professional body. Where no appropriate professional body exists, a Head of Discipline is required to demonstrate qualification through previous experience within the discipline. Examples of specific minimum competence requirements are shown in the following table extract:

Discipline	Post	Competence Requirements
Control, Command & Signalling	Head of Signalling	Chartered Engineer and Member of The Institution of Engineering and Technology/IRSE

Discipline	Post	Competence Requirements
Level Crossings	Head of Level Crossings	Chartered Engineer and Member of The Institution of Engineering and Technology/IRSE
Power Distribution HV/LV	Head of Power Distribution HV/LV	Chartered Engineer and Member of The Institution of Engineering and Technology, or Mechanical Engineer
Contact Systems AC/DC	Head of Contact Systems AC/DC	Chartered Engineer and Member of The Institution of Engineering and Technology, or Mechanical Engineer
Structures	Head of Structures	Chartered Civil or Structural Engineer
Buildings & Architecture Engineering	Head of Buildings & Architecture	Chartered Civil or Structural Engineer RICS, CIOB, CIBSE, RIBA or similar relevant membership
Geotechnical	Head of Geotechnical	Chartered Civil Engineer or Geologist
Mining & Tunnels	Head of Mining & Tunnels	Chartered Civil or Structural Engineer or Chartered member of the institute of materials, minerals and mining.
Track	Professional Head of Track	Chartered Civil Engineer with extensive experience of railway permanent way management
Lineside	Head of Lineside	Incorporated Engineer with extensive experience of railway off-track management
Drainage	Head of Drainage	Chartered Civil Engineer or Geologist
Asset Data and Information	Head of Engineering & Asset Management Capability	Extensive experience in the management of asset related data and information, with Chartered level membership of a relevant institution/body
Plant	Professional Head of Plant	Chartered Engineer and Member of The Institution of Engineering and Technology, or Mechanical Engineer IMechE (Institution of Mechanical Engineers)
Traction & Rolling Stock	Professional Head of Traction & Rolling Stock	Chartered Engineer and Member of The Institution of Engineering and Technology, or Mechanical Engineer IMechE (Institution of Mechanical Engineers)
Ergonomics	Head of Ergonomics	Chartered Ergonomist and Human Factors Specialist (Chartered Institute of Ergonomics & Human Factors)

Discipline	Post	Competence Requirements
Fire Safety	Principle Fire Safety Specialist	Member of the Institution of Fire Engineers
Operations Principles & Standards	Professional Head of Operations Principles & Standards	Extensive experience of train operation and signalling including detailed knowledge of all books of Rules and Regulations published as RGSs
Environment & Sustainability	Head of Environment & Sustainability	Science degree in appropriate subject

4.3.5   A number of posts in NR also provide technical direction in their field of expertise, for example Principal Programme Sponsor (Business Planning). Whilst these posts are not deemed to be a Head of Discipline, they provide support to each Head of Disciplines asset category.

4.3.6   Route Asset Protection teams can seek support from these posts when managing risk, for example when created by external parties.

4.3.7   The Asset Protection organisation is being reviewed to ensure it is appropriate to the scope of external party activity.

4.4   Implementation and Operations – Competence, Training, Development and Awareness

General arrangements

4.4.1   The Director, HR sets an overall framework for competence management. Heads of Disciplines support this by setting specific technical, operational and safety competence standards within their own professional disciplines. These are incorporated, where appropriate, into JDs.

4.4.2   Posts are filled by a process of competency-based selection led by line managers with support from the HR function. This involves conducting competence-based interviews to select the candidate who most closely meets the requirements of the post.

Suitability

4.4.3   Suitability means an individual meets the medical or physical requirements and has a high degree of emotional intelligence to match other JD requirements as well as the skill and knowledge requirements for the task. Job Task Analysis (JTA) and Training Needs Analysis (TNA) sets out these requirements.

Medical fitness

4.4.4   Prior to any identification of training and/or competence requirements, medical fitness of the individual shall be taken into account and shall be in line with NR Standard *NR/L2/OHS/00124 Competence specific medical fitness requirements and supplier requirements for medical assessments*. Any individual required to go on or near the line shall be able to demonstrate medical fitness and competence in accordance with:

- ***NR/L2/OHS/00124 Competence specific medical fitness requirements and supplier requirements for medical assessments***

- ***NR/L1/OHS/051 Drugs and Alcohol***

- Safety Critical Work Identification card (SCWID) (see **NR/L3/NSC/313/MANUAL On-track machines (OTMs) driver and operations standards manual**, **NR/L3/OCS/041/4-19 Train Dispatch Competence Standard - Assessment Process**), and Personal Track Safety (PTS) (see **NR/L2/CTM/021 Competence & Training In Track Safety**)

4.4.5   Line managers issue and brief employees on JDs that describe the role of the post, the principal accountabilities, and the competence requirements. Where a post is filled by a person who does not yet have all the required competencies, the line manager puts in place transitional arrangements until the postholder can demonstrate these competencies.

Assessment and Training

4.4.6   NR Standard ***NR/L2/CTM/202 Quality Assurance in Training and Assessment*** sets out the training and assessor competence. The standard requires assessors and trainers to be able to demonstrate suitable occupational competence in the subject area in which they are required to deliver assessments or training as well as competence as an assessor or trainer.

4.4.7   All new entrants undertake a four stage on-boarding and induction process. An e-Learning module (Welcome to Network Rail) is sent to them once they have accepted their job offer along with the Network Rail On-Boarding Checklist which is completed with their line manager once they commence their employment. This highlights all the mandatory and legal information they need to be aware of. A face to face event is then held which has a content mix of national and local information.

4.4.8   For those new to NR or new to a management role, a One People Manager workshop is available which trains them in the key responsibilities expected of a people manager.

4.4.9   Line managers arrange for new entrants and transferees between jobs to receive local job orientation as soon as practicable on arrival and before commencing work. The safety aspects of local job orientation are detailed in the ***Network Rail On-Boarding Checklist***.

4.4.10   Line managers arrange for appropriate assessment, monitoring and review of the performance of those employees for whom they are responsible. Line managers/employees in Role Clarity Bands 1-8 are subject to an annual performance review process. The review assesses the capabilities of the person against determined areas where competencies can be improved and action plans are set for such improvement. The ***Managing for Performance*** procedure allows for the removal of an employee to a more appropriate position when the individuals performance does not meet the required standard. This procedure may be invoked at any time.

4.4.11   Training and relevant medical examinations are arranged through the HR function. HR maintains personnel records including details of medical examinations, training and competence assessments. Arrangements are in place to give advance notice to line managers of the expiry date of competence and details of any medical restrictions applied to staff.

4.4.12   Those newly appointed to a director post are given an individually tailored induction programme so that they are aware of their responsibilities and the nature of the system safety risks affecting NR. The programme for each director is drawn up by the Principal Health and Safety Change Specialist, on behalf of the CHSQO.

4.4.13   NR ensures all employees receive mandatory training, which includes the following:

- ***Doing the Right thing*** (I-ethics) available as both an E-learning Option* & Briefing*

- General Fire Safety Awareness (Choice on E – learning or Briefing) See NR Standard ***NR/L2/CTM/229 Competence and Training for Emergency Evacuation Wardens and Persons Responsible for Fire Safety***

- ***Asbestos Awareness*** (Choice on E – learning or Briefing)

- ***Information Security*** – E learning only

- ***Everyone – Diversity and Inclusion*** – E learning only

Checks are carried out to ensure that these are in date and employees have undertaken this development.

4.4.14   For maintenance, signalling, track safety, traction supplies, and certain other safety related activities, specialist training is provided and employees are formally assessed against the appropriate competence standards. Line managers prevent employees from undertaking such work until the necessary standard of competence has been achieved.

Safety Critical Competence - Competence Management System

4.4.15   NR Standard ***NR/L1/CTM/001 Competence Management*** sets out the requirements for a Competence Management System for managing the competence of people who undertake safety critical or safety related work on the NRMI to satisfy the requirements of ***ROGS***.

4.4.16   NR Standard ***NR/L2/CTM/201 Competence Management*** defines the mandatory requirements for managing the competence of people who undertake Safety Critical or Safety Related work on NRMI. The main purpose is to ensure that NR, its contractors and suppliers take a consistent approach to Competence Management. The standard enables NR to control risks associated with the competent performance. NR Standard ***NR/L2/CTM/201 Competence Management*** defines the processes that NR implements and maintains as part of its ***Competence Management System***:

- The identification of activities and assessment of risks

- Selection of competence standards and training courses

- Development of procedures and methods for managing competence

- Determining how to meet these standards

- Establishing training, development and assessment needs

- Maintaining managers competences

- Selection and recruitment

- Undertaking training development and assessment

- Arrangements for controlling the activities that are undertaken

- Monitoring and maintaining the performance of individuals

- Managing sub-standard performance

- Keeping records

- Verification, audit, and review of the **Competence Management System**

4.4.17   NR Standard **NR/L3/CTM/306 Skills Assessment Scheme** is a competence assurance process based on risk. It applies a methodology to attain, maintain and renew competence based on the activity being performed by an individual. This standard and its modules set out the requirements of the Skills Assessment Scheme. It defines the processes to be followed in order to attain competences within its scope. This standard and its modules define the processes to be followed to attain a competence. They set the standards to be achieved when completing competence assurance activities within the scope of the Skills Assessment Scheme. This standard applies to people who undertake competence assurance activities that fall within the scope of the Skills Assessment Scheme.

4.4.18   The **Skills Assessment Scheme** is the NR means of competence assurance and is about making the assessment of capability proportionate to the level of risk involved. The assurance regime is derived from assessing a number of factors, including:

- The complexity of the task

- The likelihood of skills fade

- The impact of not doing it right

This allows NR to apply a regime that varies from re-train every 2 years to a 50 year award of competence. The control is a mandated **Annual Capability Conversation** without which competence is automatically removed.

4.4.19   Competence standards are developed by the relevant Heads of Disciplines based on applicable Railway Group and National Occupational Standards and against which the performance of employees is evaluated. These standards describe what a person must be able to do, how well and how this would be assessed.

4.4.20   NR's **Competence Management System** mandates a competent person must hold a certificate which confirms that specific competence has been demonstrated by an individual against the requirements of a competence standard.

4.4.21   A competence profile defines competence standards with a description of the range of competence requirements that apply to a specific job role or post. The competence profile is used to determine the training and assessment requirements for the person occupying the post. The profile supplements the relevant JD, forming the basis for recruitment and selection and is also used to identify individual training and assessment needs.

4.4.22   Competence assessment is undertaken in accordance with the requirements set out in NR Standard **NR/L2/CTM/202 Quality Assurance in Training and Assessment**.

4.4.23   A detailed plan of training and assessment requirements for employees is maintained, on Oracle E-Business Suite, based on the competence profiles and training frameworks.

4.4.24   The HR Shared Services management system (HRSS) and supporting competence record is updated for each individual based on the results of the latest assessment/review. This record is updated and re-issued each time an employee's competence changes.

4.4.25   In some cases, a person is required to complete a period of work experience under the supervision of a mentor to enable the individual to be able to demonstrate competence in specific work activities. The arrangements for this mentoring are agreed between the line manager, the person concerned and the mentor following the completion of training. In some other cases, a person is required to complete a period of learning with appropriate support.

4.4.26   Any employee required to undertake safety critical work on NRMI is issued with a relevant identification card. Only authorised people are permitted to undertake safety critical work and authorisation is granted on the basis of a person being medically fit and competent for the activity concerned.

Signal Engineering Competence

4.4.27   The *Institution of Railway Signal Engineers (IRSE)* operates a competence certification scheme to provide assurance about the competence of individuals to carry out technical safety-critical or safety-related work on signalling equipment and systems. It provides a cross-industry accepted benchmark of competence for personnel carrying out a range of activities from maintenance through design, installation, and testing. In addition to the Skills Assessment Scheme, NR uses this certification scheme to assess the competence of its staff used on safety-critical and safety-related signalling work.

4.4.28   NR Standard *NR/L2/SIG/10160 Signal Engineering: Implementation of IRSE Licensing Scheme - The Route to Competence* sets out the requirement for the mandatory application of the IRSE Licensing Scheme to NR's own engineers and technicians as well as those of its contractors and/or consultants. For Telecoms staff, NR uses the Skills Assessment Scheme to confirm the competence of telecoms staff undertaking safety-critical and safety-related work.

Signaller Competence

4.4.29   Signallers are trained, assessed and certified competent in accordance with National Occupational Standards. These arrangements are set out in NR Standard *NR/L2/OCS/041 The Operations Manual procedure* and *NR/L3/OPS/041/4-20 Competence Standard for Operating Signalling Equipment*.

4.4.30   Signallers are managed by Local Operations Managers who have arrangements in place so that:

- Signallers are assessed as competent to carry out work in their particular location
- Signallers are assessed as medically fit
- Arrangements are in place to control the working hours of signallers
- Competency standards for assessors are met

4.4.31   New entrants to the signalling grades attend a standard basic signalling skills training programme.

4.4.32   Basic signalling training is delivered at NR approved centres using registered professional and vocationally competent trainers. Various simulation media are used to support basic, signalling system conversion and refresher training delivery.

4.4.33   Signallers then receive local on-the-job training followed by final competence assessment by the line manager qualified in competence assessment. The line manager issues a signed certificate of competence detailing the specific locations the signaller is competent to operate. This is retained on the signallers personal safety file. Newly qualified signallers are subject to increased levels of monitoring in accordance with NR Standard *NR/L2/OCS/041 The Operations Manual* and the Operations Manual procedure *NR/L3/OCS/041/2-07 Operator Additional Monitoring and Support Procedure*.

4.4.34   Entrants to the signalling grades who are only required to work level crossings which do not require signalling block knowledge, do not attend the nationally set signalling course. Instead, they receive appropriate on-the-job training and are assessed as competent by the local line manager. Signallers moving to another box using the same signalling system receive appropriate on-the-job conversion training and are assessed as competent by the local line manager. If a change of signalling system is involved when a signaller changes post, conversion training programmes that are delivered either at a training location or on-the-job, are provided. An appropriately qualified local manager will assess competence.

4.4.35   NR has competency assessment processes that test each signaller's knowledge and understanding of relevant signalling rules, regulations and instructions, as well as the level of confidence each signaller has in their responses. As part of this process, signallers are subject to continuous assessment on a three-year cycle and each signaller is issued with a workbook identifying specific competence requirements relevant to the locations they are authorised to work. The Operations Manual procedure *NR/L3/OCS/041/4-20 Competency Standard Operating Signalling Equipment* sets out the arrangements for this activity.

4.4.36   In order to support the maintenance of competence, all signallers, local operations managers, mobile operations managers, operations managers, and other operations staff receive Operations Safety Briefs which take place every six months. Signallers are further released from duty 4 days per year for development and competence development with their line manager, where assessment evidence is taken into account, paying particular attention to any identified areas of weakness, recent changes in rules and regulations and any emerging development needs. During a three-year cycle these nationally co-ordinated refresher training/assessment elements cover the emergency and degraded mode working situations that they may only deal with infrequently. The assessment evidence generated during these sessions contributes to the evidence gathered through regular supervised visits during the three-year continuous assessment cycle. These sessions also cover the regular formal face-to-face safety briefings for signallers. Reassessments are considered for issues such as substandard performance, long term sickness, legislation/standard changes and changes due to the introduction of new and modified vehicles, plant and equipment, etc.

4.4.37   Each signalling location is subject to supervisory visits by the line manager, which include fitness for duty checks, at a predetermined frequency. The frequencies vary depending on a number of risk factors including signalling complexity and traffic density. Each signaller is also subject to supervisory visits at a predetermined frequency. Records are maintained of these visits.

4.4.38   Local Operations Managers and Operations Managers are subject to formal
            competence assessment at initial appointment and reassessment every two years
            to assure the Chief Operating Officer/ScotRail Alliance Infrastructure Director
            (Scotland only) that postholders are competent in railway operating Rules and
            Regulations.

4.5   Fitness for Work and Management of Fatigue

4.5.1   NR sets standards, where appropriate, for medical fitness and hours of work. The
            medical fitness requirements include criteria for visual acuity, colour vision,
            hearing and general health. They specify the scope of medical examinations and
            when they are required. These are defined in NR Standard *NR/L2/OHS/00124
            Competence Specific Medical Fitness Requirements*.

4.5.2   The extent of medical examination for a recruit to NR depends upon the post for
            which the individual is being recruited. For jobs which do not require track access,
            the individual completes a medical questionnaire and the occupational health
            professional determines whether any further information or a meeting is required.

4.5.3   Applicants for safety critical posts are given hearing and sight examinations and
            are medically examined in relation to the physical and psychological requirements
            of the job. A medical assessment shall be carried out before an individual is
            permitted to hold one or more of the competences listed on *Sentinel*, except *ICI*.
            This initial medical assessment is undertaken before the applicant is permitted to
            undertake safety critical work and, thereafter, at periodic intervals dependent on
            the age of the applicant at the time of the initial and each subsequent assessment.
            Medical certificates are issued on appropriate completion of each medical
            assessment. The maximum expiry date of medical certificates issued shall be:

Age at date of medical assessment	Maximum validity of certificate (unless revoked earlier)
Until aged 40 years	Every 10 years
Until aged 65 years	Every 5 years
Aged over 65 years	Annually

            Shorter expiry dates may be issued for medical reasons.

4.5.4   Confidential medical records are maintained using the HR Shared Services
            (HRSS) medicals team and management systems.

4.5.5   NR Standard *NR/L2/ERG/003 Management of Fatigue: Control of Working
            Hours for Staff Undertaking Safety Critical Work* details the arrangements for
            reducing, SFAIRP, the risks to health and safety that are associated with working
            patterns, shift work and excessive working hours.

4.5.6   The standard is supported by the following functional Level 3 standards, and a
            guidance note for Infrastructure Projects employees and suppliers:

- *NR/L3/OCS/041/2-02 Control of Excessive Working Hours for Persons
  Undertaking Safety Critical Work* details the arrangements for managing
  fatigue and working hours in terms of:
  - Designing and risk assessing working patterns
  - Working time limits and managing exceedances of working time limits
  - Monitoring and reviewing working patterns

- Applies to all operations staff (within the Route, including Managed Stations staff) who undertake safety critical work and those who have responsibility for the rostering and/or management of staff who undertake safety critical work

- *NR/L3/MTC/MG0224 Infrastructure Maintenance process* for the management of fatigue and control of working hours for employees undertaking safety critical work defines the requirements for managing fatigue and working hours for maintenance staff within the Route, and those employed under contract by the Route, who undertake safety critical work. Its purpose is to reduce the risks to health and safety that are associated with working patterns, shift work and excessive working hours.

- *NR/L2/INI/CP0070 Principal Contractor Licensing Scheme* is NR's process to verify that organisations discharging Contractor duties on construction work where NR is the client, have the relevant management systems in place to incorporate the additional requirements over and above legislation, and that they are implementing these requirements on site.

- *NR/GN/INI/001 Guidance on the Management of door to door work and travel time* provides information to support the assessment of risk associated with fatigue and the management of work and travel time. It is for all NR staff and suppliers working for Infrastructure Projects who access NRMI.

4.5.7   NR Standard *NR/L2/ERG/003 Management of fatigue: Control of working hours for staff undertaking safety critical work* also covers NR's fatigue management arrangements for safety critical workers. This standard outlines the requirements for managing fatigue and working hours, including those associated with undertaking on call safety critical work. It applies to all NR employees who undertake safety critical work, and to those suppliers whose employees undertake safety critical work on behalf of NR.

4.5.8   Specific requirements are set out for line managers or other identified roles who:

- Have responsibility for the rostering and/or management of staff who undertake safety critical work, and/or

- Are responsible for arranging, placing, controlling and monitoring of contracts which involve undertaking safety critical work on behalf of NR.

4.5.9   The scope of this standard includes controls for:

- Working hours

- Exceedances of working time limits

- Design and risk assessment of working patterns

- Management of fatigue

- Monitoring and review of arrangements for managing fatigue and working hours

4.5.10   NR applies the following limits for safety critical workers:

- No more than twelve hours to be worked per period of duty/shift

- No more than seventy two hours to be worked in any seven day period

- A minimum of twelve hours rest between booking off from a period of duty/shift to booking on for the next period of duty/shift

- No more than thirteen periods of duty to be worked in any fourteen day period

4.5.11   These limits are not sufficient, on their own, to control all of the risks from fatigue, but form part of a set of fatigue management arrangements in conjunction with other measures such as the risk assessment of base rosters and of actual hours worked.

4.5.12   Line managers plan and develop rosters and working patterns in accordance with the working time limits defined within NR Standard *NR/L2/ERG/003 Management of fatigue: Control of working hours for staff undertaking safety critical work*. These are agreed with relevant employee representatives such that the above working time limits are not exceeded. Any local arrangements for rostering or managing working hours are required to remain within these identified working time limits.

4.5.13   Rosters are developed in accordance with good practice roster design to minimise the build-up of fatigue. Good practice roster design includes, but is not limited to, the following:

- Restricting the number of consecutive night or early morning shifts to reduce fatigue build-up

- Providing adequate rest between shifts and between blocks of shifts to allow fatigue to dissipate, particularly for night shifts. It is recommended that 48 hours rest be provided following a block of nights

- Utilising forward rotating shift patterns (earlies to lates to nights) where practicable

- Planning spare duties so workers have advance notice of start times

- Providing breaks where there are no natural breaks in work activity

- Considering the impact of travelling time and workload when scheduling shifts longer than 8 hours.

Further information is included in NR's fatigue management e-learning programme.

4.5.14   All rosters are risk assessed using the Fatigue and Risk Index (FRI) prior to implementation to evaluate whether the pattern of shifts places staff at risk of fatigue. Compliance with the identified working time limits does not constitute a risk assessment (the FRI is available for download from the HSE *website* or via NR's *fatigue management e-learning programme*). The guidelines set principles and parameters for use of the FRI.

4.5.15   Where rosters are amended in response to short-notice changes to work requirements or staffing availability, such as to cover unplanned staff shortages or sickness, these amendments are made in accordance with good practice roster design to minimise the build-up of fatigue.

4.5.16   Where resource shortages occur beyond a four-week period, the actual hours worked are reviewed and control measures put into place to manage identified fatigue risks. This may include amendment of the roster in accordance with available resources, the addition of contingent labour or a more even allocation of overtime to avoid individuals becoming at greater risk of fatigue as a result of prolonged working in excess of the base roster.

4.5.17   Where resource shortages have been or are likely to be prolonged beyond a 3-month period, the roster is amended in accordance with the revised staffing profile, and this is risk assessed.

4.5.18   Where employees are persistently working in excess of a base roster to cover resource deficits, the initial risk assessment of that roster becomes no longer applicable as the cumulative risk posed by the additional hours worked is not being assessed. A new roster should then be devised to better reflect the available resources and action should be taken to address the resourcing deficit as soon as possible to reduce the impact on the remaining employees, particularly where the resource deficit is prolonged.

4.5.19   A copy of the FRI risk assessment and risk controls implemented for each roster is maintained for audit purposes, in accordance with the requirements of NR Standard *NR/L3/INF/02226 Corporate Records Retention Schedule*.

4.5.20   Working time limits are exceeded only with prior approval, on an infrequent basis and only in exceptional circumstances, as defined in NR Standard *NR/L2/ERG/003 Management of fatigue: Control of working hours for staff undertaking safety critical work*. The prior approval and risk assessment process is defined in the relevant functional procedures. Where work can be completed at another time without disruption or without a need to exceed the working time limits, an exceedance is not granted.

4.5.21   Functional heads are required to define, for their areas of responsibility, posts permitted to authorise exceedances within their area of responsibility. This should normally be the line manager but may be another nominated person, particularly if the exceedance is incurred out of hours (e.g. on-call manager, Route Control).

4.5.22   An exceedance is risk assessed and authorised by a line manager or other nominated person prior to its being incurred. Before authorising an exceedance, the line manager or other nominated person should:

- Consider the risks involved so that the exceedance does not place the individual or the safety of the railway at an unacceptable level of risk.

- Consider the alternative options available

- Identify mitigation measures to address the fatigue risks associated with the exceedance

4.5.23   NR Standard *NR/L2/ERG/003 Management of fatigue: Control of working hours for staff undertaking safety critical work* provides a table of the factors known to contribute to fatigue and increase risk and is used for guidance when risk assessing an exceedance request.

4.5.24   Where a line manager or other nominated person determines that an exceedance can be authorised, they are required to complete a record of the authorisation, including the mitigation measures to be implemented where appropriate. Where the working time limit is defined in terms of number of shifts, each shift over the limit is counted as a separate exceedance for the purposes of recording. Functions are required to develop a record to be used for the purposes of recording the authorisation. NR Standard *NR/L2/ERG/003 Management of fatigue: Control of working hours for staff undertaking safety critical work* provides a template form demonstrating the minimum requirements for this record.

4.5.25   Where they have not been directly involved in the authorisation of an exceedance, the line manager is required to co-sign the exceedance report form on the next working day.

4.5.26   Line managers take steps to relieve staff who have worked in excess of the identified working time limits as soon as practicable and provide them with sufficient time to receive adequate rest before their next period of duty. Line managers are also required to take steps to mitigate against further exceedances occurring. These mitigating measures may include:

- Alteration of the roster to provide adequate rest for employees who have exceeded

- Provision of additional resources

- Reallocation of staff to priority work tasks, where appropriate

- Provision of additional supervision

- Provision of additional breaks during a shift

4.5.27   Functional heads have arrangements in place for collating information on working hours and exceedances in order to assess how effectively they are controlling the risks arising from fatigue. The actual hours worked are monitored against the identified working time limits on a period basis. This includes any period of overtime (whether planned or unplanned) and any period where non-safety critical work is undertaken. This may include retrospective analysis with the FRI of individuals who have worked a high number of hours as a means of informing future decisions about allocation of overtime or coverage due to the level of risk imposed. This may also include analysis of time sheets for evidence of actual hours worked, as measured against the identified working time limits.

4.5.28   The number of exceedances are monitored and reported on a period basis with the aim of minimising the occurrence of exceedances. This process includes:

- Compilation of period reports on the number of exceedances that occur, including reference to causes

- Monitoring of exceedances per individual to identify where particular individuals may persistently exceed working time limits

- Agreement of action plans with the line manager to limit the number of exceedances where practicable

- Auditing of the exceedance authorisation documentation and of the process taken to authorise exceedances as a means of preventing retrospective authorisation

- Reviewing the adequacy of mitigation measures implemented when exceedances have been incurred

4.5.29   In addition to the monitoring of exceedances, monitoring and review should consider those working more than 60 hours a week, which should provide an early indication of patterns or trends which may give rise to exceedances occurring.

4.5.30   Suitable measures are required to be taken to prevent recurrences where exceedances could have been prevented.

4.5.31   Line managers are required to retain records of all exceedances incurred and the signed authority to support them, in accordance with the requirements of NR Standard *NR/L3/INF/02226 Corporate Records Retention Schedule*.

4.5.32   On-call time is monitored on a period basis. This includes time spent responding to call-outs both via telephone and in person. Where there is a high level of call-

out activity identified over a prolonged period which regularly affects the ability of employees to obtain sufficient rest between duties, consideration is required to be given to reviewing the on-call arrangements for that location.

4.5.33   Line managers have arrangements in place that prevent employees from carrying out or continuing to carry out safety critical work activities where there is reason to believe they are unfit due to fatigue. The reason for the employees fatigue is required to be established SFAIRP so as to prevent future occurrence. In the event of an employee being unfit due to fatigue, appropriate control measures shall be applied before the individual commences or recommences safety critical work activities. Guidance for managers on identifying and managing employees who are fatigue is contained within NR's fatigue management e-learning programme.

4.5.34   Functional heads have arrangements in place for providing information on the management of fatigue and working hours to employees who fall within the scope of NR Standard *NR/L2/ERG/003 Management of fatigue: Control of working hours for staff undertaking safety critical work*. This may include, but is not limited to, completion of NR's fatigue management e-learning programme, or the provision of specific training on the use of the Fatigue and Risk Index or on coping with shift work, on-going briefing material.

4.5.35   Suppliers to NR of staff undertaking safety critical work are required to have arrangements in place for managing fatigue, working hours and exceedances for their employees, in accordance with the requirements of NR Standard *NR/L2/CPR/302 Supplier Qualification – Core Requirements*.

4.5.36   All suppliers to NR are subject to formal audit arrangements. The effectiveness of contractor management arrangements for fatigue and working hours for staff undertaking safety critical work may be subject to monitoring by the line manager responsible for the management of the contract. An audit of fatigue management arrangements may also be undertaken (see HSMS 7.3 Safety Assurance).

4.5.37   Functional heads are responsible for self-assuring compliance with NR Standard *NR/L2/ERG/003 Management of fatigue: Control of working hours for staff undertaking safety critical work* in accordance with NR's Safety Assurance arrangements (see HSMS 7.3 Safety Assurance). Compliance with this standard is also addressed through NR's Safety Assurance arrangements.

4.5.38   A review of arrangements for managing the risks of fatigue is required to be undertaken by a line manager or Functional head where:

- There are plans to change the existing working patterns

- There has been a significant change in circumstances, such as resulting from job redesign, changes to workload or organisational change

- Fatigue has been identified as a causal factor in an incident investigation which gives reason to doubt the effectiveness of the arrangements

- Monitoring has shown that standards and limits are being exceeded on a regular basis

- Long term sickness, a significant number of unfilled job vacancies or industrial action results in frequent exceedances

- There is a significant incidence of workers being stopped from carrying out safety critical tasks due to being unfit because of fatigue

- There is any other reason to doubt the effectiveness of the arrangements

4.5.39   Information is available on the *Oracle Learning Management (OLM) e-learning course on Fatigue Management* and relevant health and wellbeing factsheets (see also HSMS 4.20 Workforce Health and Safety).

4.6   Drugs and Alcohol Policy

4.6.1   NR Standard *NR/L1/OHS/051 Drugs and Alcohol Policy* defines the policy and related implementation arrangements to control the risks of employees and contractors working for or on behalf of NR being unfit through drugs or alcohol while at work. The Policy demonstrates NR's commitment to:

- The health and safety of its employees and contractors

- Prevent as far as reasonably practicable problems resulting from drug and alcohol misuse arising at work

- Raise awareness of all Employees and Contractors to the effects of Drugs and Alcohol and recognise the common symptoms of Misuse, including the impact on themselves and on their work (See NR Standard *NR/L2/OHS/00120 Testing for drugs and alcohol*)

- Encourage those employees who Misuse Drugs and Alcohol to seek help voluntarily at an early stage, before their performance at work is adversely affected and to deal fairly, consistently and in a supportive manner with those employees, provided they co-operate fully with the treatment programme

- Assist managers/supervisors in dealing with drugs and alcohol misuse incidents at work

- Establish clear guidelines for dealing with misconduct arising from drugs and alcohol misuse

It requires contractors to provide their own drugs and alcohol policy to support NR's Standard as part of their health and safety management arrangements.

4.6.2   All NR employees recruited into safety critical work or posts, which require competences that are managed through the Sentinel card system, are tested for the presence of drugs or alcohol. All employees recruited to other posts are required to confirm that they understand, and will comply with, NR's Drugs and Alcohol policy. Employees in safety critical work or key safety posts, and those that are Sentinel cardholders, are subject to random testing for drugs or alcohol. Employees are also subject to for cause testing for drugs or alcohol, where appropriate, or example following involvement in a safety critical accident or where breach of the policy is suspected.

4.7   Employee Assistance

4.7.1   For the Route employees (i.e. signallers, level crossing operators, controllers, mobile operations managers and electrical control operators) NR Standard *NR/L2/OCS/041 The Operations Manual* procedure and procedure *NR/L3/OCS/041/2-07 Operator Additional Monitoring and Support Procedure* assist line managers in the identification and support of those who may be experiencing personal, health or domestic issues. The procedure is designed to provide both the employee and the line manager with a process for exploring such matters in a supportive environment. It provides guidance about the types of

support available and outlines some actions that may be used to help support the operator whilst maintaining the safety of the railway.

4.7.2   Specifically, employees are identified as requiring additional support and monitoring when they return from an extended absence (i.e. when they have been absent for more than eight weeks). The additional support may take the form of additional refresher training if the manager and operator agree that this is an appropriate course of action. See the NR *Employee Assistance Programme (EAP)*.

4.8   Consultation and Communication

4.8.1   NR values the input that its employees make to the development of health, safety and welfare policies and local working procedures. In support of this, a health, safety and welfare at work procedure has been agreed with recognised Trade Unions, namely the RMT, TSSA and Unite/CSEU unions.

4.8.2   The purpose of this procedure is to provide a procedural framework for dealing with matters related to health, safety and welfare at work in accordance with the *Health and Safety at Work Act*, and the *Safety Representatives and Safety Committee Regulations*, as amended by the *MHSW Regulations*.

4.8.3   The parties to this procedure recognise the paramount importance of health and safety at work and the positive contribution that health and safety representatives make. Improvements in health and safety performance depend on full co-operation and commitment from all employees and managers. Health and safety representatives and safety committee/council structure have vital roles to play in developing this commitment at all levels. The recognised Trade Unions nominate NR employees to act as local Health & Safety Representatives with specific health and safety functions. They have direct access to local management and the intention is to resolve as many health and safety issues as possible at the lowest level consistent with authority and accountability, and the procedure requires that effort is to be taken to provide that matters raised are resolved at the appropriate level.

4.8.4   To support the introduction of this procedure and to assist in improving its safety culture, NR has agreed with the trade unions that they appoint a number of Lead Union Health & Safety Representatives whose role is to support the introduction of this procedure across the whole organisation and work with NR in improving the organisations health and safety culture.

4.8.5   A NR National Health, Safety and Welfare Council (the Council) has been established to consider organisation wide policies and principles related to health, safety and welfare at work covering the totality of NR's business and employees (this is separate to the role of the Council associated with General Collective Bargaining as defined in the General Collective Bargaining Procedure Agreement and the Management Grades Collective Bargaining Procedure Agreement).

4.8.6   The purpose of the Council is to:

1. Discuss, develop and implement the health, safety and welfare programmes and safety policies related to the totality of NR's business and its employees

2. Monitor health, safety and welfare strategies and standards with the objective of promoting health, safety and welfare through management and employees co-operation

3. Review and discuss the general safety performance of the business

4. Review and discuss emerging trends in the context of the health of employees

5. Consider important matters of principle

6. Consider the issues which remain unresolved and have been referred to the Secretary

4.8.7   The Chair and Secretary of the Council are appointed by NR. At Council meetings, the organisations side comprises not more than ten representatives appointed by NR. The employees side comprises not more than nine representatives appointed by the trade unions on the basis of a maximum of 4 x RMT, 3 x TSSA and 2 x Unite/CSEU. In addition, each trade union may appoint one official employed by the union and one employee of the trade union who is a Health and Safety specialist.

4.8.8   Meetings of the Council are held periodically and not less than four times a year. Further meetings take place as necessary and within twenty eight days of a request being made either by the organisations side or by a trade union on the employees side.

4.8.9   Each NR Area or Area equivalent has established a health, safety and welfare committee, to deal with matters with Area wide or functional equivalent implications or which have been referred to it because of differences at local level. In addition, there are two Headquarters functions committees.

4.8.10   Each Area and equivalent Committee comprises of:

1. The appropriate senior managers from the Area or function the chair person will normally be the Head of Operations Delivery and Head of Maintenance Delivery

2. Health and safety representatives as set out in the appendices to the procedure

4.8.11   The purpose of the Committees is to keep under review the effectiveness of measures taken to protect the health and safety at work of employees within its scope, including issues escalated from local level and to promote co-operation between NR and employees in instigating, developing and carrying out such measures.

4.8.12   The Committee meets on a frequent basis and in no case less than four times a year. Further meetings take place as necessary and within twenty eight days of a request being made either by Area/functional management or by a trade union party to the agreement.

4.8.13   Matters are not normally referred to a higher level. If discussions fail to settle a difference, the procedure is exhausted. However, if after exhausting the local, Area or functional equivalent procedures the representatives legitimately believe that it is not within the remit of the Head of Operations Delivery and Head of Maintenance Delivery, or functional equivalent manager to resolve the issue, they can refer it to their National Official who, if in agreement with their view, may contact the relevant Employee Relations Specialist to facilitate a meeting with the Chief Operating Officer/ScotRail Alliance Infrastructure Director (Scotland only),or functional equivalent director.

4.8.14   Separate to the Area Committees within each function detailed above, a Route based Committee meeting, which will normally be chaired by a Route Managing Director, or Chief Operating Officer/ScotRail Alliance Infrastructure Director (Scotland only), shall be held at least once a year specifically for the purpose of addressing cross functional safety matters that affect employees in both the Operations and Maintenance Committees within the same Route. Further meetings shall take place as necessary and within twenty eight days of a request being made either by Area/functional management or by a trade union party to this Agreement.

4.8.15   A trade union appointing a local health and safety representative advises the local manager in writing of the appointment and also when the appointment ceases. The functions of local health and safety representatives are as set out in the *Safety Representatives and Safety Committees Regulations* as amended by the *MHSW Regulations*.

4.8.16   The boundaries of the workplace to be covered by health and safety representatives will normally be the Area/function controlled by the local manager within which there will be a health and safety representative(s) for each constituency. Each trade union party to the agreement will normally appoint not more than one health and safety representative from amongst the grades of employees they represent per constituency.

4.8.17   Local managers should meet with local health and safety representatives on a frequent basis but not less than four times a year. Meetings are required to be held within seven days of a specific request for a meeting. Where the matter concerns employees controlled by other functional managers or other Areas, the relevant health and safety representative are invited to the discussion. Emergency meetings may be held upon request to discuss matters considered by the health and safety representative(s) concerned to constitute a serious and imminent risk to health and safety at work.

4.8.18   Any matters raised by local health and safety representatives or Trade Unions between normal meetings are reported to the next meeting. If a matter is not resolved at local level it may be referred to the Area or functional committee level and may be so referred by either of the parties concerned. In the event of an urgent health and safety problem not being resolved locally or at Area level, the head office of the trade union may bring it to the attention of the Secretary of the NR Health, Safety and Welfare Council in order that the necessary discussions can be arranged as appropriate. However, to progress an issue in this way would be the exception rather than the norm.

4.8.19   The procedure agreement also includes a number of general arrangements for:

- Workplace inspections (both routine and special inspections by local health and safety representatives)

- The provision of information (statutory provision, information in relation to accidents/ill health/dangerous incidents, health and safety information, timely and efficient communications and access to information)

- Reasonable access to office facilities or time away from normal duties with pay as is necessary to undertake planned inspections, attend meetings, have appropriate involvement with regard to hazard identification, risk assessments, the determination of controls and to discharge their other functions, i.e. undertake consultation, review of health and safety documentation/information, undertake correspondence)

- Attend courses on health and safety at work matters as are agreed to be reasonable by the parties to the agreement (TUC Stages 1 and 2, course equivalent to these as run by the individual Trade Unions, other courses as may be agreed by the National Council as being relevant), and reimbursement of reasonable expenditure associated with attending such courses

4.9   Safe Delivery of Core Activities

Asset Management Process

Asset Management System

4.9.1   NR's **Asset Management Process (AMP)** is defined through the **Asset Management System (AMS)**. It provides an overview of how all its activities, learning and control frameworks work together, so that they are able to be understood, communicated and operated across NR.

4.9.2   The AMS outlines the key documents that describe NR's Approach to Asset management as below.

Asset Management Policy (AMP)

4.9.3   The **Asset Management Policy (AMP)** includes details of the organisation's asset management policy statements and guiding principles, a framework for asset management, and a commitment to communicate the policy as appropriate

4.9.4   NR's Asset Management Framework, as shown below, encompasses 8 stages with underpinning processes that provide the mechanism to create an effective line of sight between its high level objectives, on the ground work delivery and through monitoring and review, to return feedback and learning to help frame future strategy.
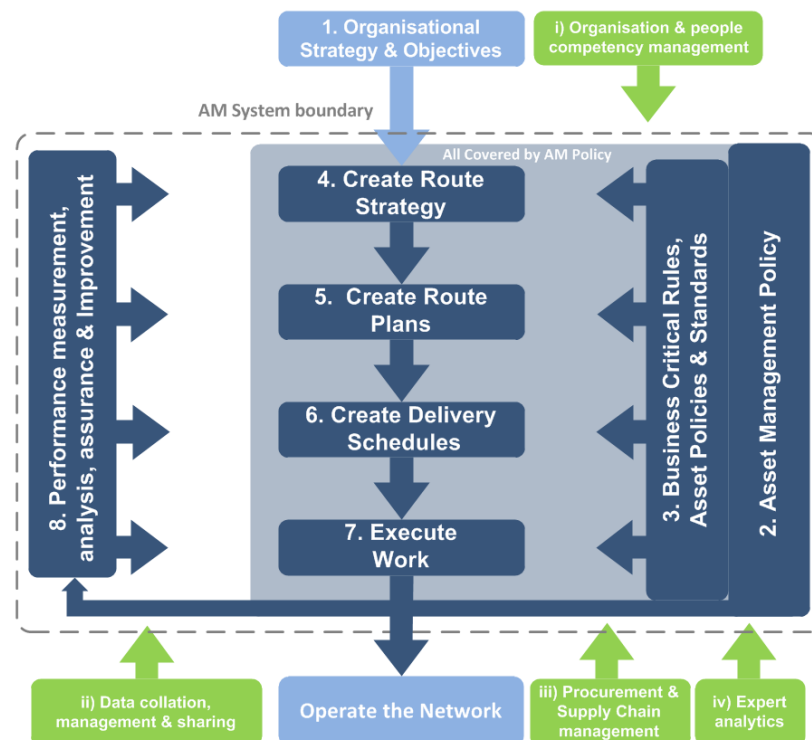
Asset Management Strategy (AMS)

4.9.5   The *Asset Management Strategy (AMS)* includes a narrative on the Asset Management Objectives, and how improvement initiatives are guiding the development of Asset Management Excellence to deliver:

- Improved Safety

- High Performing assets, required to provide a quality service

- Value for money at all times

4.9.6   All projects which may cause significant change to the infrastructure are subject to infrastructure change approval, whereby all aspects of the proposed change are reviewed, to provide assurance that relevant risks have been identified and that adequate controls are in place for the change (see HSMS 6.1.15 Network Code and 6.6.9 Infrastructure, Rail Vehicle and Safety Critical Plant and Equipment).

4.9.7   The impact of proposed new or altered infrastructure on train and station operators is considered and any plans for new or altered infrastructure (including station facilities) are developed in close co-operation with them and any other affected parties, as applicable, including adjacent Infrastructure Managers (see HSMS 6.1 Transport Operators and 6.6.9 Infrastructure, Rail Vehicle and Safety Critical Plant and Equipment).

4.9.8   Risk assessment and change control is undertaken in accordance with NR's relevant procedures. This includes meeting the requirements of CSM RA (see HSMS 6.6.15), the *MHSW Regulations* and, where appropriate, legislative requirements in relation to specific risks.

4.9.9   All construction works that result in physical change to the railway system are designed, planned, constructed and implemented in accordance with: statutory requirements, particularly:

- The *CDM Regulations*

- *CSM RA*

- *Technical Specifications for Interoperability (TSI)* where applicable

- *RGSs*

- NR Standards (or authorised departures there from)

- Relevant National and European standards, wherever possible adopting best industry practice

The Engineering function leads the appropriate acceptance into service of infrastructure changes.

4.9.10   The *Sponsors Handbook* sets out the process for collecting, analysing and grouping refurbishments, renewals and enhancement requirements together in CAPEX infrastructure projects. These grouped refurbishments, renewals and enhancements are documented by Strategic Route and support the NR Business Plan. The *Sponsors Handbook* specifies how refurbishments, renewals and enhancements are captured and grouped before the project lifecycle commences and how to document these relationships in multi-disciplinary projects.

4.9.11   NR Standard *NR/L2/INI/02009 Engineering Management for Projects* describes the processes and roles and responsibilities for the management of the technical

and engineering requirements of projects for and on behalf of NR. It applies to all projects and the organisation's working on those projects that change, renew, enhance or remove NR infrastructure assets.

4.9.12   However, where the project is to only undertaken by the Route, and the type, complexity and scale of the whole of the project is covered by NR Standard **NR/L3/MTC/RCS0216 Risk Control Manual**, then where the complete works are to be managed and undertaken by the Route, the Route may undertake these projects, in compliance with these controls, rather than apply NR Standard **NR/L2/INI/02009 Engineering Management for Projects**.

4.9.13   NR Standard **NR/L2/INI/02009 Engineering Management for Projects** applies to all phases of a project as applicable, including, but not limited to:

1. Feasibility studies

2. Design

3. Construction

4. Testing and commissioning

5. De-commissioning and demolition

4.9.14   NR Standard **NR/L2/INI/02009 Engineering Management for Projects** applies to projects which protect NR's asset when a party other than NR carries out work on, over, or under, NR property. The requirements defined within this standard detail the responsibilities that are aligned to elements of the CDM Regulations.

4.9.15   In addition to general health and safety legislation, the **CDM Regulations** contain specific legislative requirements that aim to reduce construction and operational safety risk by requiring effective co-ordination, management and co-operation throughout the life-cycle of a physical asset. NR Standard **NR/L2/OHS/0047 Application of the Construction Design and Management Regulations to Network Rail Construction Projects** describes the requirements and arrangements for the application of the **CDM Regulations** across NR.

4.9.16   Network Rail Infrastructure Limited as a corporate body is a dutyholder under the **CDM Regulations**, generally client where it procures the proposed work, and for a number of projects, a combination of dutyholder roles. NR will not appoint individual people as dutyholders in the **CDM Regulations**, its standard requiring each project to appoint CDM Representatives to facilitate the discharge of NR's dutyholder accountabilities for that project. NR Standard **NR/L2/OHS/0047 Application of the Construction Design and Management Regulations to Network Rail Construction Projects** describes the CDM Representative roles and their function in the delivery of physical work.

4.9.17   Where Third Party and Outside Party works are undertaken, NR confirms in writing who is the Client and what duties NR holds, through a Memorandum of Understanding, or an equivalent contract document. NR Standard **NR/L2/INI/CP0043 – Management of Third Party Works** on NR Infrastructure defines how NR will manage Third Party works.

4.9.18   NR's business as usual activity is to manage and implement construction works, including design. To enable consistency and avoid recreating arrangements, the standard sets a hierarchal management framework for NR's compliance to the **CDM Regulations**. Through the devolution model, each business unit (Route, Function, Major Programme and Region) documents their CDM Management

Procedures for how they discharge elements of NR's duties as Client, Designer, Contractor, Principal Designer and Principal Contractor.

4.9.19   The director of a business unit documents and implements their own CDM Management Procedures, which provide instructions to their staff on how to apply the *CDM Regulations*. The procedures reflect the activities the business unit performs and its interfaces with other parts of NR. As a minimum it describes the following:

- Roles and Responsibilities

- Exchange of information

- Risk Management

- Document Management

- Assurance Arrangements

4.9.20   The NR Standard *NR/L2/OHS/0047 Application of the Construction Design and Management Regulations to Network Rail Construction Projects* requires a CDM Plan to be completed for each project, which details the CDM management arrangements for that specific project. The CDM Plan documents the project specific roles and accountabilities, including transitional arrangements. The standard, the business units CDM Management Procedures and the project specific CDM Plans are supported by a number of other related standards.

4.9.21   NR's Client arrangements for the production, management, storage and provision of Health and Safety Files are defined in NR Standard *NR/L2/INF/02202 Records Management of Health and Safety Files*.

4.9.22   NR's arrangements as Client for ensuring that adequate welfare facilities are provided for construction works are defined in NR Standard *NR/L3/INI/CP0036 the provision of welfare facilities*. NR's arrangements as Client for ensuring that an appointed Contractor or Principal Contractor has the necessary skills, knowledge, experience and capability is through the Principal Contractor Licencing Scheme, as defined in NR Standard *NR/L2/INI/CP0070 Principal Contractor Licensing Scheme*.

4.9.23   Other dutyholder appointments are subject to prequalification and meeting the industry minimum requirements, as reviewed and audited by *RISQS* as an independent industry body. RSSCO, IP and Route contract and procurement teams have supplemented this requirement with business unit supply-chain assurance process.

4.9.24   NR's Clients arrangements for the production of the Construction Phase Plan, by NR and external appointments are defined in NR Standard *NR/L2/OHS/0044 Planning and managing construction work*, for works in the rail environment. For the high-street environment the arrangements are defined in NR Standard *NR/L2/OHS/005 High Street Environment and conditions for work outside NR controlled infrastructure*.

4.9.25   The process for implementing the physical change, will determine which functions and business units have accountabilities and the interfaces between them, for discharging NR's CDM duties. In accordance with the Client Principles, the System Operator or a Network Operations Route will hold the Client accountabilities in the majority of cases for enhancement projects. the Route will hold the Client accountability for renewals works. For a project, the *Contract*

Strategy Mapping Tool (available on Safety Central) can be used to describe the interfaces and how the accountably within NR transition throughout a project.

4.9.26   A *RACI* (template available on Safety Central) is to be determined which will identify which party is best placed to discharge the respective dutyholder requirements of CDM.

4.9.27   A business unit may delegate responsibility for a task, as defined in their CDM Management Procedures to another part of NR or to a supplier. Where this is option is chosen, the CDM Management Procedures will document how the business unit will assure that the task has been completed and undertake in compliance with the *CDM Regulations*. Accountability cannot be transferred and will be retained by the original business unit.

4.9.28   When roles on a project are transferred between individuals, functions, delivery groups, and suppliers, during the project then the transfer of roles is required to be clearly documented in the CDM Plan including formal arrangements to demonstrate coordination and management continuity including transfer of Health & Safety information. Where the role of Principal Contractor is transferred between organisations then the plan allows time for NR to provide the necessary pre-construction information (including as built information) to the new Principal Contractor and for that contractor to plan the delivery of the work.

4.9.29   In situations where there are either:

a. Closely related projects

b. Different projects work areas that are directly adjacent or overlap

The respective project Client Representatives are required to reach a clear understanding of the CDM arrangements that apply, verify that these are documented in the CDM Plans, and relevant information is communicated to all involved parties.

4.10   Prevention through Engineering and Design (PtED)

4.10.1   Prevention through Engineering and Design (PtED) represents the best-value approach to the identification and elimination of hazards from the railway system and its interfaces, over its life-cycle. NR Standard *NR/L1/HSS/00126 Prevention through Engineering and Design (PtED)* policy sets NR's commitments and aspirations for removing hazards and reducing risk in the railway system by being effective, consistent, measured, and adopting a systems thinking approach. The policy acts as a key enabler (capability) for leading health and safety in Britain's railway; the rail industry's strategy for health and safety improvement.

4.10.2   The policy provides a coherent overall policy of prevention, through the setting of requirements for PtED. These require NR to continual improvement in the following areas:

- Organisational culture and structure

- Management system

- Technology

- Investment

- Workforce education

- Procurement

- Hazard management

- Investigations

- Research

- Learning

- Improving the elimination of hazards at source

4.10.3   Research from the HSE, the USA and Australia, has shown that decisions made about how the built environment or systems are designed and how this activity is performed (design/engineering management), affects the type and amount of:

- Injuries

- Health impacts and fatalities that occur during the construction

- Operation

- Maintenance and decommissioning of the built environment

4.10.4   PtED has the ability to reduce potential injuries and fatalities between 40% and 70%.

4.10.5   The culture and organisational systems of NR can either limit or enable individual and group behaviour to eliminate hazards or reduce risk, at the most effective point in the change process and over the whole-life of its assets*:*
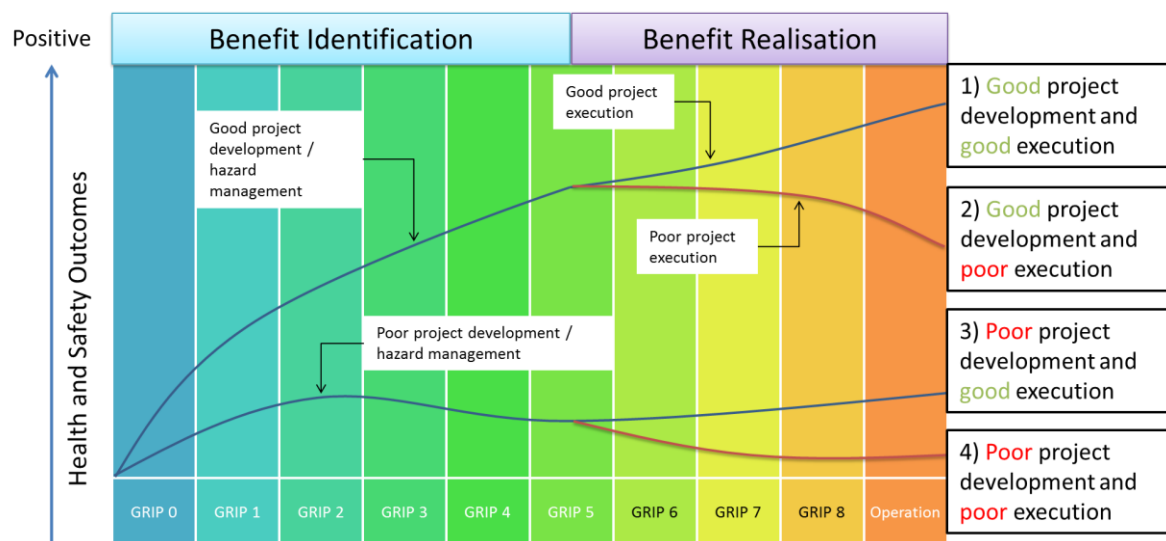
4.10.6   NR Standard **NR/L1/HSS/00126 Prevention through Engineering and Design (PtED) policy** sets the requirements to establish and continually improve the means of engineering or designing the elimination reduction of hazards and risk in the areas of:

a. Safety

b. Health and wellbeing

c. Environment protection

d. Security

e. Inclusion

4.10.7   The NR Board Executive Committee has accountability for the implementation of the PtED policy across the organisation to deliver the following commitments:

      a. Set PtED outcomes as organisation and personal priorities, supported with sufficient resources

      b. Create an organisational culture, structure and management system to achieve PtED outcomes

      c. Educate its workforce, the rail industry and stakeholders in PtED to develop increasing capability

      d. Learn and retain knowledge from past incidents and events both in the rail industry and from outside the rail industry

      e. Research the effectiveness of PtED practice, new solutions to existing problems, and the identification of future research needs

      f. Increase the practice of PtED, throughout the organisation, the rail and construction industries

      g. Increase the ratio of hazards eliminated through PtED to operational controls and the reduction of dependence of on-going human intervention

      h. Improve the awareness and the demonstration of how the actions of individuals, and NR as a whole, affect PtED outcomes and practice

4.10.8   Infrastructure design requirements are specified in relevant Railway *TSIs*; Group, NR and relevant technical engineering standards. Heads of Disciplines are responsible for technical standards and also specify the inspection, assessment and maintenance requirements for those parts of the infrastructure whose design predates current standards.

4.10.9   Designers duties under CDM are prescribed in the CDM Regulations and require designers to identify risk, control identified risks by design, and document any identified residual risks which require controls or mitigations by other means. Specifically ROGS, require the incorporation of the European Union Regulation 402/2013, CSM RA (see HSMS 6.6.48 Application of CSM RA). NR Standard designs and asset policies apply the CSM RA method in their creation, and a Hazard Record provided with the design.

4.10.10 Design work is only undertaken by competent persons against approved standards, procedures, codes of practice and relevant regulatory requirements. It is normally undertaken as part of a project and is therefore subject to relevant project controls in accordance with NR Standard *NR/L2/INI/02009 Engineering Management for Projects*.

4.10.11 Design work is subject to technical approval, the general requirements for which are set out in NR Standard *NR/L2/INI/02009 Engineering Management for Projects*. Specific technical approval requirements for asset groups are then further defined in NR Standards:

- *NR/L2/SIG/30003 Engineering Assurance Arrangements for Signalling Engineering Schemes and Services*

- *NR/L2/CIV/003 Engineering Assurance of Building and Civil Engineering Works*

- *NR/L2/TRK/2500 Engineering Assurance Arrangements for Track Engineering Projects*

- *NR/L2/ELP/27311 Engineering Assurance Requirements for Design and Implementation of Electrical Power Engineering Infrastructure Projects*

- *NR/L1/TEL/30100 Telecoms Design*

- *NR/L2/TEL/30022 Engineering Assurance Arrangements for Communications Engineering Schemes and services*

- *NR/L2/ERG/24020 Engineering assurance requirements for Ergonomics within design and development projects*

4.11   Construction

4.11.1   The Project Manager creates plans for the project, including engineering designs, based on the sponsor's instructions. This includes the identification of hazards and assessment of risks at all further stages of the project and the identification of control measures to reduce the risks as far as reasonably practicable. These risk assessments use professionally recognised techniques for hazard identification, quantified risk assessment, and safety cost benefit analysis, where appropriate, to identify acceptable levels of risk in accordance with these principles.

4.11.2   The Project Manager will arrange consultation with adjacent or affected parties, including owners of neighbouring land, Local Authorities, and Highways Agency, in compliance with legislation including, yet not limited to, the Health and Safety at Work etc. Act 1974, and the New Roads and Street Works Act 1991, to protect persons associated with the delivery of the proposed project from dangers to their health and safety, and others who might be affected by the work activity including members of the public, for example passengers, pedestrians, cyclists, equestrians and motorists. These include proper arrangements for design (including planning and risk assessment) and management (including supervision) of the works. Under the Equality Act 2010, there is a duty to have regard for the needs of disabled people and older people in the planning and execution of works.

Third and Outside Party schemes

4.11.3   The responsibility during the implementation stage for a Third Party scheme rests with Infrastructure Projects or Route Asset Managers, depending on the size of the scheme. NR Standard *NR/L2/INI/CP0043 Requirements for the Safety Management of Third Party Works* sets out requirements for the application of equivalent controls to be established when Third Parties wish to specify, manage and/or deliver infrastructure projects upon NRMI.

4.11.4   For Third Party schemes, the Asset Protection team will usually be the initial point of contact and undertake the role of Sponsor (producing sponsors instructions, stage gate authorisations, etc.). Heads of Disciplines specify engineering policy and requirements, and provide engineering advice. Local site knowledge is provided by the route civils asset management team.

4.11.5   For Outside Party schemes, the Director Route Safety & Asset Management/Director Asset Management (Scotland only), shall be accountable for establishing the CDM management principles for the scheme, and ensure the duties of CDM Client are clearly documented and communicated, following agreement to the apportioning of Client responsibilities between NR and the Outside Party.

4.11.6   Where a Third Party or an Outside Party promotes a scheme on or adjacent to NR property, that Party shall be identified as the Lead, or Principal Client. However, NR will always retain certain Client duties in compliance with the Network Licence, specifically with regard to the management of the NR Asset, and the provision of Pre-construction Information appropriate to the proposed works.

4.11.7   For such schemes the capability assessment shall be reviewed. Where capacity or capability of the Asset Protection team is identified as insufficient for discharging the Client duties in compliance with the Network Licence, the Route Managing Director/ScotRail Alliance Infrastructure Director (Scotland only), shall make suitable arrangements to provide support or alternative resources for enabling the discharge of these duties.

4.11.8   Where the Third Party appoints the CDM Principal Designer for proposed works on NR operational infrastructure, a RACI is to be drawn up to identify which party is best placed to discharge the dutyholder requirements of CDM, and that NR should be appointed as the Principal Designer for those works on NR operational infrastructure.

4.11.9   Where the Outside Party appoints the CDM Principal Designer for a project on property adjacent to the NR operational estate, then agreement is to be reached with the ORR that NR does not act as Principal Designer.

4.11.10   Where the Third Party appoints the CDM Principal Contractor for proposed works on NR operational infrastructure, a RACI is to be drawn up to identify which party is best placed to discharge the requirements of CDM, and that NR should be appointed as the Principal Contractor for those works on NR operational infrastructure.

4.11.11   Where the Outside Party appoints the CDM Principal Contractor for a project on property adjacent to the NR operational estate, then agreement is to be reached with the ORR that NR does not act as Principal Contractor.

4.11.12   The respective Route will engage and liaise with lineside neighbours, statutory authorities, local bodies and developers who are planning their own works adjacent to the Network, and to identify where access may be required onto the rail network, so as to control that access.

4.11.13   The Route will seek to ensure that any risks to the safe operation of the railway are successfully mitigated. This usually involves formal engagement with the other party to support a planned programme of work via an Asset Protection Agreement. This Agreement must reflect the nature of the engagement, and duties which NR will discharge. The Route Asset Protection team will deliver NR's obligations under these Agreements.

4.11.14   Where the Asset Protection team is approached by another party seeking to undertake works either over, on or adjacent to the rail network, solely for their own benefit, the Asset Protection team shall seek to support the safe planning, design and delivery of the scheme with that party and discharge NR's obligations. It is accepted that an Outside Party is unlikely to have been assessed as a rail competent body, and in order to meet the requirements of the Network Licence, the Asset Protection team shall take on specific duties under the **CDM Regulations**, so NR may ensure its compliance with the Network Licence.

4.11.15   Where a Third Party or an Outside Party promotes a scheme on or adjacent to NR property then asset information will be shared before the works are to start. This will allow anyone involved in any design, survey or construction/installation of an asset, to have relevant information.

4.11.16   Pre-construction Information is to be looked on as live, i.e. information is to be shared across all parties involved with the proposed works as it becomes available, and the record updated.

4.11.17   For Third Party proposed works the Project Manager shall request a CDM Plan from the Third Party where required by NR Standard **NR/L2/OHS/0047 Application of the Construction (Design and Management) Regulations to Network Rail Construction Projects**. The CDM Plan is to document evidence of how each of the dutyholders is to discharge their duties.

4.11.18   Each CDM Plan is to be reviewed on a regular basis as to ensure its adequacy and validity against the proposed works.

4.11.19   For Outside Party proposed works the Contractor or Principal Contractor shall be requested to provide a Construction Phase Plan (CPP) and all supporting documentation which will provide information equivalent to a CDM Plan, before start of the construction phase, so NR may ensure its compliance with the Network Licence.

Project safety management – preconstruction information

4.11.20   The NR Standard **NR/L2/OHS/0047 Application of the Construction (Design and Management) Regulations to Network Rail Construction Project**s details the development of preconstruction information.

Construction Phase Plan

4.11.21   Before commencement of physical works under the implementation phase, the Project Manager ensures the Principal Contractor has a satisfactory Construction Phase Plan and where necessary that effective handover arrangements have been specified for the handover of responsibilities for the asset from the Route (within which sits the maintenance organisation) to the project contractor. The required content and specification of the Health and Safety File is agreed in advance of the commencement of work with either the Infrastructure Maintenance Delivery Manager or the equivalent responsible person for Property.

4.11.22   NR Standard **NR/L2/OHS/0044 Work Package Planning** defines the process for providing on-site personnel with sufficient information to enable them to manage the risk associated with work activities. It requires the production of Work Package Plans and Task Briefings for specific items of work in accordance with the requirements of relevant NR Standards and as specified within the Construction Phase Plan. Work activities deemed significant are not undertaken until the relevant Work Package Plan has been accepted by a competent person within the Project Managers team.

Health & Safety File

4.11.23   NR Standard **NR/L2/INF/02202 Records management of health and safety files** specifies the records management requirements for these files. The standard specifies the records management processes for the:

    a.   Delivery and acceptance of H&S Files into steady state

    b.   Content of H&S Files

    c.   Onwards management and update of H&S Files

4.11.24   It is mandatory for NR staff and NR contractors who carry out work on NR infrastructure where a Health and Safety File is a requirement under the **CDM Regulations**.

Entry into Operational Service (EIS)

4.11.25   NR Standard **NR/L2/INI/CP0075 Procedure for the Entry into Operational Service of Railway Infrastructure** describes NR's arrangements for undertaking Entry Into Operational Service (EIS) of new or altered railway infrastructure. This is achieved by the demonstration that the assets provided, whether new, temporary or legacy assets, are suitable, sufficient and correctly configured to provide for the safe functional operational requirements of the railway infrastructure.

4.11.26   NR Standard **NR/L2/INI/CP0075 Procedure for the Entry into Operational Service of Railway Infrastructure** provides the requirements for a project to plan in advance of EIS activities starting, how new or altered railway infrastructure shall be entered into operational service. The requirements for EIS are also described, including the relationship with discipline specific EIS standards and the roles and responsibilities of people involved with the process. This procedure covers the EIS of all new or altered Railway Infrastructure where a Designated Project Engineer (DPE) is appointed in accordance with NR Standard **NR/L2/INI/02009 Engineering Management for Projects**.

4.11.27   The decision to bring a new or altered asset into service is that of the relevant Project Manager and this decision considers requirements such as engineering, commercial, safety assurance, operational readiness, maintainer preparedness, **CSM RA** and/or Interoperability.

4.11.28   NR Standard **NR/L2/MTC/088 Arrangements for maintenance of new and changed assets** sets out the requirements for the safe and effective maintenance of all new and existing assets undergoing change, or that are affected by project works, at all times that they are in operational use, whether the works to them are complete or not, and that the responsibilities for maintenance of such assets are clearly identified. NR Standard **NR/L2/MTC/088 Arrangements for maintenance of new and changed assets** does not deal specifically with the actual commissioning and inspection of the project works as to their fitness for operational use or for their final acceptance by the asset steward. However, the arrangements for these are documented in the Asset Management Plan required by NR Standard **NR/L3/MTC/089 Asset Management Plan**.

4.12   Maintenance

4.12.1   Maintenance work is defined as construction work in the **CDM Regulations**. The same requirements for construction will be applied to maintenance activities, unless the business unit's CDM Management Procedures define local equivalents that better reflect the risks involved. Where 'like for like' replacement of assets is proposed, it will be risk assessed by the Director Route Safety & Asset Management/Director Route Asset Management (Scotland only), or their teams, to justify that it is the design solution that eliminates all foreseeable risks, or where they cannot be eliminated reduces the risk SFAIRP. NR aims to maintain the railway infrastructure in a safe and reliable condition, by working to specifications, defined in NR Standards, which set out what must be maintained and how it should be maintained.

4.12.2   The list of work identified as being necessary is known as the unconstrained workbank, and comprises both major items of work specified by location and some items of work which are specified only as volumes of activity to be carried out on each route. The Route Asset Manager [Asset] specifies the appropriate mitigating actions necessary if work is either cancelled or deferred. This is defined in

accordance with relevant standards, examples of which are NR Standard *NR/L2/TRK/6001 Renewals Workbank Management* (this defines the process for the management of the renewals workbank including strategic management, peer review processes, programme compilation and scheduling for delivery) and NR Standard *NR/L2/HAM/02201 Management of the Risk Arising from Deferred Renewals* (this supports NR asset management policy(ies) and associated risk control on how to prepare, implement and manage measures directed towards controlling the risks arising from deferred renewals).

4.12.3   Once produced, the total volume of the workbank is reviewed against the availability of the necessary resources in an integrated process the revised workbank volume is established within a framework of relevant NR Standards which takes account of the availability of design and implementation resources and funding availability. This constrained workbank is reviewed and accepted by the Route Asset Manager [Asset], who also specifies any mitigating actions to be incorporated into the plan in respect of deferred work.

4.12.4   The Work Plan Co-ordinator develops a detailed plan taking into account specific resource availability and engineering requirements. This plan is then passed to the Access Co-ordinator (for detailed access planning), the Infrastructure Maintenance Engineer (to implement maintenance plans) and to Programme Managers (to implement the renewals plan).

4.12.5   Maintenance plans are developed for each Delivery Unit that define the arrangements for delivering the required levels of inspection, maintenance and testing to comply with relevant standards. These mandate the minimum levels of maintenance for each asset type. Where required, they are supported by detailed maintenance procedures.

4.12.6   Each Infrastructure Maintenance Delivery Manager is responsible for managing systems and processes so that maintenance work allocated to the Delivery Unit is programmed and carried out safely and efficiently, that the end product complies with the engineering specification, and that NR's information systems have been updated to reflect the work that has been carried out.

4.12.7   Asset condition data is collected and records of maintenance, inspection and testing are maintained. The information gathered is used to optimise maintenance specifications and standards and, where possible, enable condition-based maintenance regimes to be implemented.

4.12.8   Planned preventive inspection, testing and maintenance is carried out on key items of equipment whose failure has unacceptable safety risks, or where required by legislation and to protect the value of the asset.

4.12.9   Planned inspection is undertaken on equipment to monitor asset condition. The frequency depends on the degree of risk associated with the equipment concerned. NR's engineers, using their professional judgement, take the decision on whether or not to alter the frequency of checks. Their professional judgement is supported by a variety of decision support tools that help quantify the risks.

4.12.10   Infrastructure assets are maintained for as long as they give safe and reliable service. Decisions on whether to renew an asset or to continue to maintain it are made by engineers from the appropriate discipline, taking into account available asset information and, when available, using appropriate analytical models.

4.12.11   If it is decided to renew an asset at a date later than the due date, an assessment is performed to determine whether any precautionary measures should be applied, such as the imposition of a temporary speed restriction. The NR asset management policy(ies) and associated risk controls for managing the risk arising from deferred renewals is supported by NR Standard ***NR/L2/HAMG/02201 Management of the Risk Arising from Deferred Renewals***.

4.12.12   Delivery Unit organisations and the RSSCO team manage the delivery of all maintenance work. Where contracts are in place that covers more than one Delivery Unit, such as fencing and vegetation management, a nominated lead Delivery Unit will manage the delivery.

4.12.13   Where NR does not undertake the maintenance directly, the condition of such assets is inspected and maintained by contractors in accordance with relevant standards and contract terms prepared on behalf of the Head of Maintenance Delivery, Director Route Safety & Asset Management/Director Route Asset Management (Scotland only), as appropriate.

4.13   Operations

4.13.1   NR's core processes for operating the network consist of:

- Access planning

- Directing the operations of the network through national and route controls

- Controlling the movement of trains by operation of the signalling systems

- Controlling the electrical traction supplies by operation of the electrical control systems

- Responding to incidents through operational or infrastructure teams

- Managing those stations for which NR is the Infrastructure Manager

Access Planning

4.13.2   Access planning is the process by which NR produces working timetables of train paths on its network and allocates possession of the track for engineering works and whereby access is only granted to those operators of trains who have a current safety certificate relevant to the route and nature of traffic proposed.

4.13.3   The basic framework governing each working timetable is provided by the ***Rules of the Route*** and the ***Rules of the Plan***. The ***Rules of the Route*** deal with the timing and location of possessions for planned maintenance and other works, together with permitted restrictions, such as temporary speed restrictions for maintenance repair works. The ***Rules of the Plan*** deal with, amongst other matters, certain timing capabilities of the network such as the running times for different categories of trains, minimum headways between trains over each segment of route and stopping times at stations. This timing within Rules of the Plan creates suitable safety margins between trains including avoidance of conflict at junctions.

4.13.4   The Capacity Planning Director leads a team of persons conversant with train planning tools and techniques who validate and authorise changes to the timetable based upon documented headways, margins and pathing times. NR Standard ***NR/L2/OCS/031 Risk Assessment and Briefing of Timetable Change***

sets out the common process for identifying and assessing the risks associated with timetable change and the controls for reducing such risks SFAIRP.

4.13.5   All planned significant timetable changes are reviewed nationally by the Timetable Change Assurance Group (TCAG) that is chaired by the Capacity Planning Director. Where a detailed assessment is considered necessary, TCAG directs the relevant Route-based Timetable Change Risk Assurance Group (TCRAG) to carry this out and identify any reasonably practicable risk mitigation controls.

4.13.6   A Timetable Change Brief is produced for the beginning of each new published timetable and to which local items may be added. Once approved by the Route Managing Director/ScotRail Alliance Managing Director (Scotland only), it is provided to line managers and operators of trains and stations in sufficient time to enable the briefing of all signallers and train drivers prior to implementation of the timetable.

Possessions Planning

4.13.7   The access planning process NR Standard ***NR/L3/INI/CP0064 Delivering Work Within Possessions*** is required to provide sufficient access to the track environment to maintain, renew and enhance the infrastructure to deliver a safe and reliable network. The process provides three points of entry for disruptive possessions to be included in the timetable year planning cycle:

- TT - 176 weeks before the relevant timetable commences

- TT - 55 weeks before the relevant timetable commences

- TT - 30 weeks before the work commences

4.13.8   The planning process also allows for possession activities to be lodged in draft long-range form, three to five years before the relevant timetable commences.

4.13.9   NR Standard ***NR/L2/NDS/202 Principles, Timescales and Functional Responsibilities for Engineering Work, Access and Heavy Resource Planning*** describes the process to bring together the planning of work and access on the railway infrastructure.

4.13.10   Non-disruptive (rules of the route) possessions are planned to meet the above disruptive timescales, but worksites within possessions can be included up to T - 2 weeks before the commencement of work. In addition, where reactive maintenance is required to address track defects, etc., then possessions may also be planned in these timescales provided there is no effect on train services. Additional work activities can be included in the possession plan, between T - 10 to T - 4 days prior to the commencement of work, providing the work is of an urgent nature and does not interfere with the existing work plan and that a risk assessment is undertaken.

4.13.11   A description of the method of working is required for each possession application which must include how railway operational interfaces are managed. A risk assessment is carried out in respect of what the work is, where the work is to take place (taking into account such factors as distance from running lines, live overhead lines, access points, etc.), how the work is being undertaken (trains, on/off tracking of OTP) and duration of the task (daylight and or night time working).

4.13.12   The description of the method of working will pass through various iterations at each stage of the planning process, as it is developed. For tasks not covered by a generic task description, a competent person signs off the operational interface component of the description of the method of working.

4.13.13   The appropriate possession plan is then published in the relevant Weekly Operating Notice in accordance with NR Standard *NR/L2/OPS/110 Requirements for the Weekly Operating Notice, Periodical Operating Notice and Local Operating Instructions (incl. Sectional Appendix)*.

Operations Control

4.13.14   The National Operations Centre (NOC) liaises with Route Control Centres to collate real time information on network safety and performance. The NOC also has a national co-ordinating role for:

- Dissemination of urgent advice of operating issues in accordance with NR Standard *NR/L2/OPS/035 Dissemination of Urgent Operating Advice,* and critical engineering issues in accordance with *GE/RT8250 Reporting High Risk Defects*

- Dissemination of weather warnings

- Co-ordination of major incident response at national level

- Co-ordination of nationally managed rail vehicle breakdown and recovery resources (e.g. rail cranes)

4.13.15   Each Route has one or more Control Centres that liaise with signalling locations, electrical control rooms and with operators of trains and stations to provide overall co-ordination of train movements over a particular geographic area. Additionally, the centres provide a route-wide communication and co-ordinating role for NR's employees, contractors, train operators, and with the emergency services, following accidents or incidents on or adjacent to the infrastructure. The centres form a significant communication component in the processes to deliver the requirements of NR Standard *NR/L2/OPS/035 Dissemination of Urgent Operating Advice*, as well as Railway Industry standards *RIS-8250-RST Reporting High Risk Defects* and *RIS-0707-CCS Management of Safety Related Control, Command and Signalling System Failures*.

4.13.16   NR Standard *NR/SP/OCS/043 National Control Instructions* mandates the use of National Control Instructions, their Approved Codes of Practice and organisation instructions which apply at each Control Office location. National Control Instructions are produced as a functional procedure for all NR Control Offices and contain a template for organisation instructions which apply at each Control Office location. Organisation instructions which apply at each Control Office location are produced by Operations Managers or Alliance Control Manager (Wessex only), or Head of Integrated Control (Scotland only), from the template, taking account of local factors. *NR Standard NR/SP/OCS/043 Specification: National Control Instructions* sets out the process for the design of these instructions, their implementation, and the arrangements for governance and compliance.

Signalling Control

4.13.17   The movement of trains on the network is controlled by signallers who operate the signalling system from signalling control locations. They control train movements

over sections of the network and are grouped within geographically defined Routes/Areas and managed by Operations Managers.

4.13.18   Train movements are controlled by signallers on the basis of train paths shown in the working timetable, taking account of actual train movements and any short term changes, for example as a consequence of engineering work or signalling system failure. Any short term amendments are detailed in Special Notices or under Very Short Term Planning arrangements by Route Control Centres. Longer term changes are published in timetable supplements. This information is distributed under document control procedures, as hard copy or by electronic means.

4.13.19   The risks associated with the movement of trains, including personal safety of persons on or about running lines, are controlled through the correct application of detailed rules and instructions, many of which are published as *RGSs*.

4.13.20   These rules and instructions enable the consistent management of safety procedures across the interfaces between different groups of employees and different organisations. RGSs for operations include:

- *GE/RT8000 series The Rule Book (including Train Signalling TS1 – TS10)*

- *GO/RM3056 The Working Manual for Rail Staff*

4.13.21   These documents define the requirements and detailed procedures for safe interworking, and are supplemented locally by other mandatory operating instructions in accordance with NR Standard *NR/L2/OPS/110 Requirements for the Weekly Operating Notice, Periodical Operating Notice and Local Operating Instructions (incl. Sectional Appendix)*, including:

- Signalbox Special Instructions

- Sectional Appendices

- National Operating Instructions (NOI) *NR/NOI-004*

- Electrical Control Room Instructions

- Radio Electronic Token Block Regulations

4.13.22   The NOI *NR/NOI-004* is to be read in conjunction with the *GE/RT8000* series of Rule Book Modules. This document is designed to provide additional instruction and guidance to NR staff that are in receipt of the Rule Book. These additional instructions carry the same requirement and responsibilities as those within the Rule Book Modules, and it is the responsibility of those charged with these duties to make sure that they are familiar with and understand these instructions.

4.13.23   This document has been created primarily using the information removed from the Rule Book as part of the Tranche Change Process. Other instructions have been added following recommendations within the Route. The information removed from the Rule Book and placed in this document is classed as Single Duty Holder meaning that the responsibility lies with NR for these instructions to be carried out. They do not include actions required of others outside of NR.

4.13.24   Together, these Rules, Regulations, Instructions and Appendices define the controls and authority for movement, whether in normal mode, degraded mode or emergency conditions. Details of any urgent amendments to these rules are published in Weekly and Periodical Operating Notices, in accordance with NR Standard *NR/L2/OPS/110 Requirements for the Weekly Operating Notice,*

Periodical Operating Notice and Local Operating Instructions (incl. Sectional Appendix), which are prepared and sent out by each Routes organisation to signallers, contractors and the operators of trains and stations.

Managed Stations

4.13.25   Each Managed Station has a NR Station Manager/Area Manager Alliance (Wessex only), who has the lead responsibility for health and safety management including security, crowd control, planned general inspections, train despatch monitoring and liaison with train operators. They manage the delivery of a core set of activities, delivered either by a team of NR employees or by Third Parties, to the operators of trains and their customers.

4.13.26   Transport Undertakings (i.e. the operators of trains) are normally responsible for the following activities within each Managed Station:

- Cleaning and maintaining dedicated areas

- Ticket sales and revenue protection

- Management and control of Automatic Ticket Gates (ATGs)

- Train attendance and despatch

- Travel Centre

4.13.27   Responsibility for these activities may vary at each Managed Station and the precise activities and the responsibilities for their provision are defined in the access agreement between NR and all the relevant train operators for each Managed Station. Where activities are undertaken by train operators, the relevant procedures are no less than those of NR. NR also has arrangements by which the activities for which the organisation is responsible are delivered by competent persons.

4.13.28   Station Managers/Area Manager Alliance (Wessex only) are supported by Shift Station Managers, who monitor the delivery of these activities using the relevant procedures within the NR Standard *NR/L3/OCS/044/MS-07/Appendices Control of Work on Managed Stations - Appendix A (NR/L3/OPS/044/MS-07/Appendices)*, which provides a structured framework and set of procedures for managing the operational activities and risks associated with Managed Stations.

4.13.29   Station Managers/Area Manager Alliance (Wessex only) have arrangements with train operators that define the responsibilities and arrangements for the despatch of trains, operation of the station and evacuation procedures. Station Managers/Area Manager Alliance (Wessex only), review the delivery of activities and undertake regular liaison meetings with the representatives of train operators to discuss relevant health and safety issues, address any deficiencies, and develop appropriate remedial measures for implementation.

4.13.30   Where essential maintenance or renewal work is to be undertaken to the fabric of the station, whether by NR employees or contractors, Shift Station Managers provide a safety briefing *NR/L3/OCS/044/MS-02 Safety briefing, Identification cards and Access Control Systems (NR/L3/OPS/044/MS-02)* and operate a permit-to-work process *NR/L3/OCS/044/MS-07 Control of Work on Managed Stations (NR/L3/OPS/044/MS-07)* in accordance with the relevant procedures in the *NR/L3/OCS/044 Managed Station Manual - Contents, Procedures & Responsibilities Matrix*. This is used to establish controls over the work-site/station operations interface.

4.13.31   Alterations and property development on stations have the potential to introduce risk and are appropriately risk assessed to identify necessary control measures, taking into account factors such as crowd control and fire safety, using procedure NR Standard **NR/L3/OCS/044/MS-27 Project Review Group**.

Managed Stations - Crowd Control

4.13.32   Organisational arrangements are established to cater for the number and purpose of people expected to be in the station at any given time. Real-time monitoring of crowd flow and accumulation is carried out by Managed Stations employees who are in radio contact with the Shift Station Managers. Each crowd control plan, developed in accordance with procedure **NR/L3/OCS/044/MS-32 Crowd Control Plan (NR/L3/OPS/044/MS-32)**, documents the risk based approach to manage the accumulation of crowds to acceptable levels. Such measures include controls ranging from restricting/closing pedestrian access to the station, to coordinated closure of adjacent transport operator facilities (e.g. LUL trains will run through the adjacent underground station non-stop). The ultimate crowd control mechanism is to evacuate the station where the crowding could become dangerous. Where the overcrowding event becomes unsafe the emergency plan, developed in accordance with procedure **NR/L3/OCS/044/MS-23 Emergency Planning (NR/L3/OPS/044/MS-23)**, may be implemented.

4.13.33   For large pre-planned events, a contingency plan is drawn up in conjunction with the relevant interfacing organisations and special arrangements, including additional staff where necessary, are provided to control crowds associated with scheduled events (e.g. football matches, music concerts).

4.13.34   Station Managers/Area Manager Alliance (Wessex only), co-ordinate, maintain, exercise and review the crowd control arrangements (including the station emergency plan) with interfacing organisations (e.g. train operators, LUL, LOL and MTRC, Local Authorities, BT and civil police) via regular programmed meetings and live and table-top exercises involving these key organisations.

Managed Stations - Train Despatch

4.13.35   The arrangements in place to manage the despatch of trains at Managed Stations is reviewed through an assurance check in accordance with NR Standard **NR/L3/OCS/044 Managed Station Manual - Contents, Procedures & Responsibilities Matrix** and procedure **NR/L3/OCS/044/MS-18 Train Dispatch Monitoring**.

4.13.36   The assurance check is undertaken by the Station Manager/Area Manager Alliance (Wessex only), to a frequency determined by documented risk assessment, which takes into account several different factors such as the station layout, train despatch arrangements, the results of previous assurance activity and the performance of the train operator.

4.13.37   Where NR employees despatch trains, Birmingham New Street only, this is undertaken in accordance with the defined safe system of train despatch, developed following risk assessment, by competent persons, appropriately trained and certificated in accordance with NR Standard **NR/L3/OPS/041 Operations Manual – Contents & Responsibilities Matrix** and procedure **NR/L3/OCS/041/4-18 Train Dispatch Competence Standard** as published on the Competence Management System.

Managed Stations – Assaults on Employees

4.13.38   NR has a zero tolerance towards assault on any of its employees and NR Standard **NR/CS/OHS/005 Personal Security** defines the organisations policy and related implementation arrangements to control risks to the personal security of its employees whilst at work.

4.13.39   All Managed Stations employees who come into regular contact with the public are briefed on the Rules on Aggression Avoidance and all Managed Stations employees based on stations or who come into contact with the public on a regular basis are provided with formal training on Aggression Avoidance.

4.13.40   Each Managed Station has installed digital or tape recorded CCTV that is licensed for security and safety management and used by NR and the Police to act as a deterrent, as evidence and to provide intelligence. NR will press for severe punishment of persons guilty of harassment or violence to its employees. NR will also seek to use Anti-Social Behaviour Orders as provided for in the Crime & Disorder Act to prohibit such persons from entering stations.

4.13.41   Where NR employees are assaulted procedure NR Standard **NR/L2/INV/002 Accident and Incident Reporting and Investigation** is implemented to cater for the welfare of employees. An investigation is undertaken to identify any measures which can be taken to prevent reoccurrence. Data from such reports is monitored at periodic safety meetings to identify trends and where necessary action plans are devised to reduce the incidence of assaults.

Managed Stations 'Lite'

4.13.42   At many NR managed stations, specific station services are contracted to train operating industry partners via sub contracted services agreements and NR remains accountable in accordance with its safety obligations and station license. At Reading, Bristol Temple Meads, Cannon Street, Clapham Junction and Guildford, the stations are operated under an alternative model to that of the remainder of the managed stations. The hour by hour management and a majority of station services are delivered by a train operator on NR's behalf, with NR retaining overall accountability. Under these arrangements, NR allows the use of train operators' equivalent station safety and operating procedures to avoid overlapping or duplicate safety processes. The interface arrangements between NR and Train Operators in this relationship are safety validated. NR maintains a station management post responsible for each of these stations to oversee the contract deliverables, industry collaboration and compliance based checks.

OTM Driving/Mainline Operations

4.13.43   NR has principles, roles, responsibilities, systems and processes, which are in place, to manage the health, welfare, safety and security of its employees, and others affected by its mainline operations. The scope of train operations is limited to the driving of On-Track Machines (OTM) on the NRMI and is primarily managed by the RSSCO Function. The arrangements for safe mainline operations are documented within the Health & Safety Management System (Transport Undertaking) (HSMS TU), which supports NR's Safety Certificate and is published on **Connect**.

4.14   Key Health and Safety Risks and Controls

Emergency Planning and Crisis

4.14.1   NR is defined as a Category 2 Responder under the Civil Contingencies Act, and recognises its duties to assess and plan for accidents, incidents and other emergencies on or affecting NR infrastructure and to provide an effective response.

4.14.2   NR Standard *NR/L2/OPS/250 Network Rail National Emergency Plan* describes the national generic arrangements in place to provide an effective response to accidents, incidents and other emergencies on or affecting NR infrastructure. NR has arrangements to regularly review the National Emergency Plan and update it whenever necessary.

4.14.3   NR's emergency plans have been developed in co-operation with the emergency services and with other relevant transport undertakings, including LUL, LOL and MTRC. This co-operation extends to the planning, testing through exercises, and implementation of the emergency procedures. Plans are co-ordinated for emergency preparedness throughout the organisation such that all plans complement each other and those of other interfacing organisations (e.g. Local Authorities, LUL, LOL and MTRC). Information is supplied to the emergency services to assist them in forward planning and also during emergencies. Emergency plans are provided to all relevant stakeholders, including LUL, LOL and MTRC. Plans are reviewed with the emergency services and with other relevant transport undertakings and interfacing organisations by the Route Emergency Planning and Coordinating Committee (REPACC).

4.14.4   NR has developed plans that cover the following:

- Identification of the significant hazards and the associated risk, including those arising from occasional or one off events

- Strategies for dealing with potential emergencies, both internal and external

- The conditions under which they will be applied and the organisational arrangements needed to implement them

- The responsibilities of NR staff and appropriate guidance to protect the safety of themselves, the general public, contractors and train operating and station staff

- Liaison with external organisations prior to, during and following an emergency

- Attendance on site of appropriate employees to deal with public and media enquiries

- Responsibility for informing the ORR and the *RAIB*, in appropriate circumstances.

- An abnormal, unstable and complex situation that presents threat to commercial and strategic objectives, reputation and license to operate (this is termed as a Crisis in NR, see HSMS 4.14)

Arrangements and Communication of Emergency Response

4.14.5   The contents of emergency plans are communicated to all relevant personnel through briefing, training, and during exercises. NR Standard *NR/L2/OPS/250*

Network Rail National Emergency Plan contains a brief description of the roles and responsibilities of posts that NR may appoint as part of the rail industry response to an incident. Additionally it provides a brief outline of the roles and responsibilities of personnel from external agencies that may be found at an incident site, for example Freight/Train Operating Companies (FOCs/TOCs) and the Emergency Services. NR has arrangements to suitably train and brief relevant employees for the roles they may need to take in emergency situations. Where plans require the designation of responsibilities to individuals, such individuals are trained and assessed competent in their tasks. NR has arrangements to regularly review the National Emergency Plan and update it whenever necessary. NR Standard NR/CS/OPS/200 Network Rail Security Manual mandates core operational security requirements and provides associated guidance.

4.14.6   The Operational Security & Contingency Planning Manager acts as the overall co-ordinator of emergency planning for NR, overseeing the compilation of emergency plans such that they are produced in accordance with *RGS GO/RT3118 Incident Response Planning & Management,* and are consistent across NR's areas of operation. Line managers are responsible for preparing, maintaining and managing emergency plans relevant to their operational area. Advice on drawing up these plans is given by the Operational Security & Contingency Planning Manager and team when required.

4.14.7   A three-tier structure is applied to the management of rail response to an incident. This basic structure will apply whatever the severity of the incident. However, not all of the structure will be implemented for each incident. The detailed response depends on the circumstances, in liaison if appropriate, with the emergency services. These tiers are defined as Strategic (Gold) Tactical (Silver) and Operational (Bronze).

Gold (Strategic)

The role of the personnel in the Gold location is to be responsible for the strategic management of the incident. Gold is led by the Rail Incident Commander (RIC), and would normally be situated at NR Route Control. Gold provide executive support to the Rail Incident Officer, and focus on operational strategy.

Silver (Tactical)

The role of the personnel in the Silver location is to determine the priorities in allocating resources, obtaining other resources as required, planning and co-ordinating the overall response on site from a rail industry perspective. Within NR, this role is performed by the Rail Incident Officer (RIO) who is the lead rail industry responder on site for Route incidents, or the Station Incident Officer (SIO) for incidents that occur at Managed Stations (a SIO may be appointed from within the Train Operating Organisation (TOC) at stations not directly managed by NR).

Bronze (Operational)

Bronze staff are key personnel required to support the RIO (or SIO in the case of incidents occurring at Managed Stations) in providing effective management of the recovery from an incident. Those operating at this level concentrate on undertaking specific tasks within their area of responsibilities. These activities will be co-ordinated by the RIO as far as rail related organisations are concerned. The need for the appointment of Bronze Command personnel will be dictated by the circumstances of the incident. The Emergency Services will establish a command structure based on the same three tiers, i.e. Bronze, Silver and Gold.

4.14.8   The National Operations Centre provides a national notification and communications role, whilst emergencies on the network are co-ordinated on the ground by the relevant Route Control, which is responsible for co-ordination of response, rescue and recovery arrangements. Supporting equipment and facilities, such as emergency rail vehicles (snowploughs, rail cranes etc.), road vehicles, radios etc., are identified and contracts made with organisations as necessary to operate them. Contracts specify the required levels of availability and response times for all such emergency equipment and facilities.

4.14.9   The contents of emergency plans are communicated to all relevant personnel through briefing, training, and during exercises. NR Standard **NR/L2/OPS/250 Network Rail National Emergency Plan** contains a brief description of the roles and responsibilities of posts that NR may appoint as part of the rail industry response to an incident. Additionally it provides a brief outline of the roles and responsibilities of personnel from external agencies that may be found at an incident site, for example Freight/Train Operating Companies (FOCs/TOCs) and the Emergency Services. NR has arrangements to suitably train and brief relevant employees for the roles they may need to take in emergency situations. Where plans require the designation of responsibilities to individuals, such individuals are trained and assessed competent in their tasks.

4.14.10   Emergency plans are regularly tested and reviewed. NR holds joint practical exercises with the emergency services and other responding agencies, train and station operators and Local Authorities to confirm that the emergency plans are effective, and that they can be applied in practice. Testing and review may be through live emergency exercises, table-top exercises or workshops as appropriate. NR also participates in planning meetings and exercises with external organisations, and provides access to its premises and infrastructure for familiarisation purposes.

4.14.11   Recommendations arising from testing and review are documented and incorporated into emergency plans and relevant standards, as appropriate.

4.14.12   In the case of a corporate crisis, which NR defines as an abnormal, unstable and complex situation that presents a threat to commercial and strategic objectives, reputation and license to operate, a strategic crisis management team (SCMT) may be mobilised to manage resulting issues. The CEO or their nominated alternative can declare a crisis and once declared they will appoint a senior director to the role of SCMT Director who is assumed full delegated authority for the crisis response. An SCMT team is drawn from across the business, deploying individuals with a variety of skills and competences who have been trained in the SCMT processes and governance arrangement. A crisis management policy, plan and handbook, with appropriate templates, are readily available for each SCMT to mobilise quickly. In the event of an operational emergency, an SCMT (if mobilised) will act as a strategic capability that sits above incident and functional response capabilities, and will focus on long-term reputational, financial, commercial and other impacts and ultimately NR's license to operate.

Liaison with External Bodies/Interfaces

4.14.13   The Operational Security & Contingency Planning Manager acts as the overall co-ordinator of emergency planning for NR, overseeing the compilation of emergency plans such that they are produced in accordance with ***RGS GO/RT3118 Incident Response Planning & Management*** and are consistent across NR's areas of operation. Line managers are responsible for preparing, maintaining and managing emergency plans relevant to their operational area. Advice on drawing up these plans is given by the Operational Security & Contingency Planning Manager and team when required.

Traumatic incident management

4.14.14   NR is dedicated to promoting a positive working environment for its staff and colleagues and aims, therefore, implement control measures that aim to reduce the likelihood of employees being exposed to, or involved in, a potentially traumatic incident.

4.14.15   Mental health conditions can develop immediately after trauma, but can also occur in the weeks, months, or years later. The majority of people recover within a few days of a traumatic incident and suffer no long-term negative psychological effects. Therefore, enforcing psychological intervention or formal professional healthcare services immediately following an incident should be avoided.

4.14.16   Control measures identified by NR Standard ***NR/L2/OHS/052 Traumatic Incident Management*** aim to reduce the risk of employees developing a mental health condition following a potentially traumatic incident.

4.14.17   Sufficient resources are available to all employees to raise awareness of the normal reaction to a potentially traumatic incident, and to embed principles of watchful waiting throughout the business.

4.14.18   Employees more likely to be exposed to potentially traumatic incidents can be offered training to understand the nature of their work and the impact such exposure might have on their mental health.

4.15   Fire Safety

4.15.1   NR has arrangements in place to manage risks from fire in accordance with the requirements of fire safety legislation to reduce the risks to its employees and other persons, protect its extensive property portfolio and minimise business disruption.

4.15.2   The Head of Fire Safety Policy is responsible for developing fire risk policy and loss control strategy directed towards reducing fire risk and compliance with statutory fire safety legislation.

4.15.3   The NR fire safety policy mandates requirements applicable to the control of risks arising from fire to the safety of NR workforce, contractors, customers, assets and business activity. It defines the policy and procedures for the delivery of effective fire safety management. The policy is detailed in NR Standard ***NR/L1/FIR/100 Organisation Fire Safety Handbook***, which is supported by the following suite of Level 3 standards for fire safety:

- ***NR/L3/FIR/101 Fire Safety – Managed Stations***

- ***NR/L3/FIR/102 Fire Safety – Operational Estate***

- ***NR/L3/FIR/103 Fire Safety – Offices and Competency and Training Delivery Centres***

- ***NR/L3/FIR/105 Fire Safety - Property: Business Space, Freight & Miscellaneous Property Portfolios***

- ***NR/L3/FIR/106 Fire Safety – Maintenance***

- ***NR/L3/FIR/107 Fire Safety - Fire Risk Assessment***

- ***NR/L3/FIR/108 Fire Safety - Fire Extinguishers***

- ***NR/L3/FIR/109 Fire Safety - Fire Log Book***

4.15.4   All NR managed premises have a manager appointed as the Person Responsible for Fire Safety (PRFS). The PRFS is responsible for arranging fire risk assessment for buildings under their control which take into account the probability of a fire occurring and the potential consequences for safety and business continuity.

4.15.5   Fire risk assessments are reviewed by the PRFS at a frequency determined by the assessment. Buildings are inspected by the PRFS to check the adequacy of the fire safety arrangements at a frequency based on the results of the fire risk assessment. The PRFS uses an aide memoir check sheet, from NR guidance note ***NR/L3/FIR/109 Fire Safety - Fire Log Book***, when conducting fire safety inspections of the premises.

4.15.6   Line managers arrange for all persons under their control to receive appropriate instruction and training in the fire safety arrangements pertinent to their workplace. All NR employees receive instruction and training on the fire safety arrangements within their work location as part of their induction process. Refresher training is delivered to all employees at a frequency which maintains competence, but not greater than every three years. Employees with additional fire safety responsibilities receive additional training commensurate with their responsibilities, e.g. line managers responsible for fire safety, emergency evacuation wardens.

4.15.7   Managers with fire safety responsibilities are supported by the Principal Fire Safety Specialist and the out-based team who:

- Provide fire safety advice, including in respect of new/altered buildings design

- Review train operator, station operator and contractor safety management documentation

- Undertake fire safety audit and investigation

4.15.8   The Route Asset Manager accountable for building assets specifies maintenance regimes, inspection activities, and renewal proposals for buildings to include the planned preventative maintenance (PPM) programmes for all fixed fire systems including fire alarm systems, fire suppression systems and emergency lighting systems such that they are maintained in accordance with the appropriate British Standard(s) by competent persons. All new, altered and refurbished premises are vetted for fire safety and any proposed changes are assessed for compliance with the relevant fire safety legislation.

4.15.9   The portable fire extinguishers maintenance contract is managed by the National Contracts Manager.

4.15.10   The Director, Property is responsible for arrangements by which all property lease agreements correctly address tenants' responsibilities for fire safety as part of the conditions of the lease.

4.16   Infrastructure Integrity

Signalling

4.16.1   Appropriate standards, procedures and work instructions are in place and implemented by a competent workforce throughout the entire life-cycle of the signalling system.

4.16.2   The NR Signalling Asset Policy sets out the overall strategy for the signalling system. In line with the requirements of the asset policy new equipment/systems can only be introduced onto the network following acceptance of a safety justification that demonstrates that a safety risk is not introduced onto the network and the risks have been managed SFAIRP.

4.16.3   Renewal needs are identified by the use of the SICA (Signalling Infrastructure Condition Assessment) process as defined in NR Standard *NR/L2/SIG/13251 Management of the Signalling Infrastructure Condition Assessment SICA Process*. Various renewal options exist according to the components/systems requiring renewal. These renewal options range from targeted renewal of specific components or groups of components through to full replacement by modern equivalent systems.

4.16.4   Design, Installation, Testing and Commissioning activities require compliance to comprehensive standards and procedures with the work implemented by a competent workforce.

4.16.5   All contractors supplying labour require *RISQS* approval. *RISQS* is the UK rail industry supplier qualification scheme, providing a single common registration, qualification and audit process for suppliers shared by the UK rail industry. Initial and periodic audits are performed by independent bodies, such as NCB on behalf of NR to confirm supplier compliance to NR Standard *NR/L2/CPR/302 – Supplier Qualification - Core Requirements*.

4.16.6   IRSE Assessing Agencies which process IRSE licence applications are routinely audited by the IRSE to confirm compliance to IRSE licensing rules and regulations. The IRSE are in turn audited by UKAS, to confirm that licensing scheme rigour is maintained.

4.16.7   NR employs both Site and Construction management supervision arrangements to manage the various stages of the contracts. Handover/handback procedures are designed to robustly manage the decommissioning and commissioning of systems into operational service.

4.16.8   Maintenance activities require compliance to comprehensive standards, procedures, and works instructions, by a competent workforce. Critical signalling equipment/systems have mandatory maintenance instructions with stated ranges of task frequencies based upon local conditions. Maintenance tasks and frequencies use a risk based approach which optimises maintenance activities according to equipment type, frequency of use and impact on safety and performance.

4.16.9   On-going performance of the signalling system is monitored using the FMS and SINCS (Signalling Incident System). Signalling failures are reviewed according to the requirements of NR Standard **NR/L2/SIG/10047 Management of Safety Related Reports for Signalling Failures**. Processes also demand that failures are fully investigated to understand their root cause and any corrective actions are applied as required, including nationally where appropriate. The investigations may require testing by specialists and involve independent organisations as deemed necessary by the circumstances associated with the incident.

Structures

4.16.10   The requirements for the safe management assuring the integrity of structures are defined in NR Standards **NR/L1/CIV/032 The Management of Structures** and **NR/L3/CIV/006 Handbook for the Examination of Structures**. For their respective route, the appointed Structures Manager typically the Route Asset Manager (Structures) shall:

1. Arrange for information necessary for the effective management of structures to be collected and entered into appropriate database(s)

2. Appoint a competent Engineer to manage each structure or group of structures (for example, of a particular type or category within a defined geographic area)

3. Designate those structures that are to be managed as a Major Structure for which a bespoke asset management plan will be required

4. Instruct the production and maintenance of Local Extreme Weather Plan(s) by coordination with other affected asset owners

4.16.11   For structures allocated to them the Engineer will ensure that:

- A register of all assets under their management is maintained

- Appropriate management control procedures are being carried out on each asset

- Evaluations are carried out and documented on an appropriate frequency to the risk being managed.

- Change of use is evaluated

- Decide and implement interventions required to maintain the required outputs of the asset

4.16.12   Note that Evaluation is an important aspect of structures management which is carried out by the Engineer. It is defined as an appraisal of all relevant information regarding the stability, load-bearing capacity, condition and use of a structure to determine the actions required to maintain acceptable levels of safety and performance.

4.16.13   Evaluation is essential in structures management due to the unique and archaic nature of the asset portfolio. The application of judgement is regulated by competency reviews.

Competence

4.16.14   Engineers appointed to deliver one or more of the requirements of the safe management of structures shall:

1. Have the competency, skill, knowledge and experience necessary to undertake their role commensurate with the form, type and complexity of the structure(s) being managed

2. Be aware of their responsibilities

3. Understand why and be able to judge when urgent action is required to maintain safety

Competence requirements for specific roles for managing structures are defined in NR Standard **NR/SP/CTM/017 Competence & Training in Civil Engineering**.

Safety management process for Structures

4.16.15   NR's safety management process for Structures:
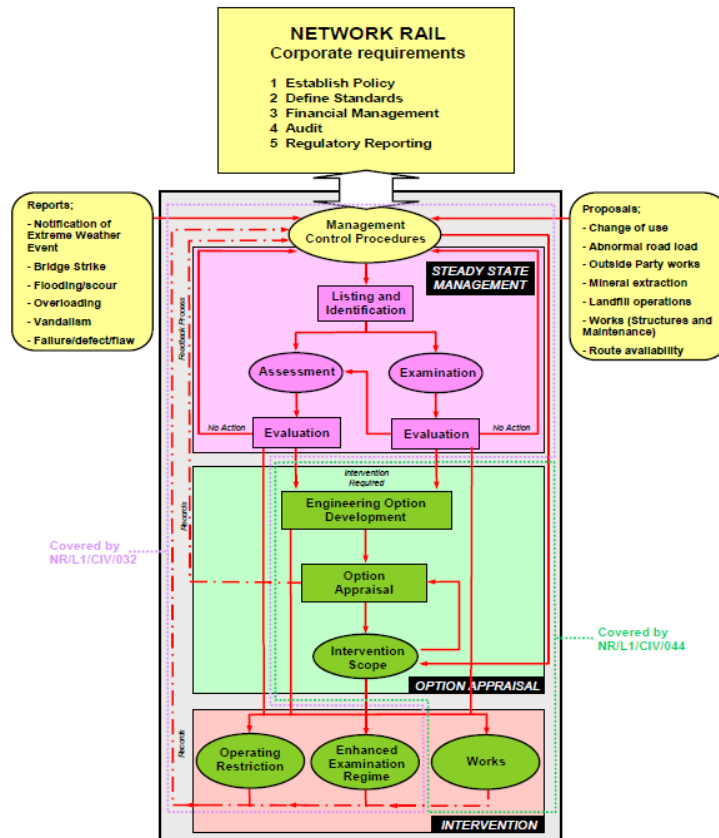
Note that specific requirements for managing each category are defined in NR relevant Level 2 standards.

Civils Strategic Asset Management Solution

4.16.16   CSAMS is a strategic asset management capability which:

- Refines and improves on risk-based examination regimes

- Increases visibility and understanding of risk

- Mitigates incidents through early intervention on the right assets at the right time

- Moves to a proactive predict and prevent way of working

- Reduces resource impacts and improves decision making resulting in more effective strategic management

4.16.17   CSAMS integrates with existing NR systems, such as ORBIS, ADS and RINM, delivering:

1. A consistent way of maintaining the safety of Civils Assets

2. A single view of trusted data supported by common governance

3. Mobile access to Civils Asset Management information
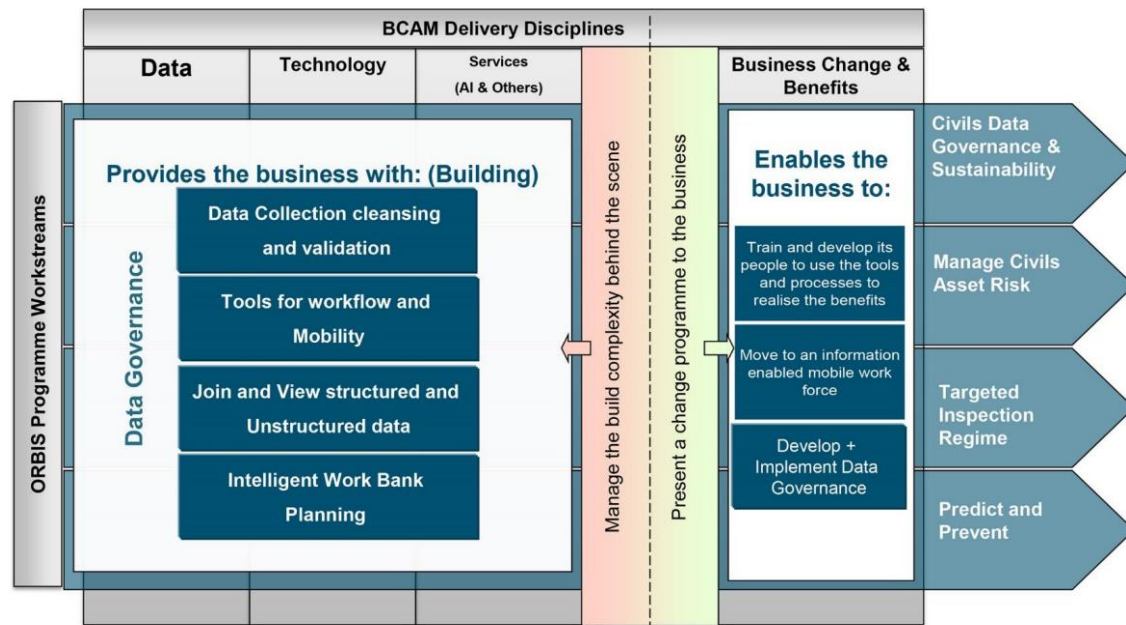
4.16.18 A trusted, common source of civils asset information linking location, type, history (condition, past interventions, capability etc.). Digital records including photographs, video, design drawings and reports are available for retrieval by Asset Engineers and Managers for planning / executing work.

4.16.19 Examiners capture data using handheld devices on site. Asset identity is derived by GPS position. Results can be electronically transmitted to NR's central repository (Ellipse).

4.16.20 Information about historic and emerging incidents (including near misses) associated with Civils assets is collected and analysed to identify risks, effective remediation options and other lessons learned.

4.16.21 Management information can be obtained at multiple levels of detail, from Route dashboard status to individual asset lists. Regular compliance and ad-hoc reporting requirements are easily accommodated through standardised reporting tools.

4.16.22 Route Planners and Asset Managers have full visibility of the unconstrained (before available resource and funding constraints are applied) Route Workbank to maximise the opportunities for optimised work planning.

4.16.23 Enable development of asset management policies, Route Asset Management Plans and sustainability/whole life modelling to improve safety and performance of the railway.

4.16.24 The fitness for purpose of existing structures is assured through a formalised regime of structural assessments and examinations. Structural assessments are undertaken to determine, or confirm, the safe loading capacity of the structure and are usually only undertaken on bridges. An examination will report on the condition of the structure, identify the location and severity of any defects, provide where possible information to assess the rate of deterioration of the structure and, where necessary, identify works required to maintain the fitness for purpose of the structure.

4.16.25   The requirements for undertaking a structural assessment (other than for an Earthwork) are specified in NR Standard **NR/SP/CIV/035 Assessment of Structures**. The stability of Earthworks is determined in accordance with NR Standard ***NR/GN/CIV/203 Evaluation and Assessment of Earthworks***.

4.16.26   Examination regimes for particular structures are developed in accordance with NR Standard ***NR/L3/CIV/006 Handbook for the Examination of Structures*** to enable:

- The condition of the structure to be determined and recorded

- The presence, nature, severity and extent of defects that may indicate or cause deterioration of the structure to be identified and recorded

- Information to be provided that, with reference to previous examinations, allows the rate of deterioration and any significant change in the condition, loading or environment of the structure to be determined

- Informed decisions to be taken as to the actions and remedial works that need to be implemented so that there is no unacceptable risk to the safety or performance of the structure

4.16.27   The following can be carried out for a particular regime:

- Visual examinations

- Detailed examinations (including underwater examinations)

- Additional examinations

4.16.28   In general, structures are examined annually. The frequency of the detailed examination of a structure is determined using the risk-based approach set out in NR Standard ***NR/L3/CIV/006 Handbook For The Examination Of Structures***.

4.16.29   Underwater examinations are generally carried out at a maximum three year interval for structures which have elements within a watercourse or sea, or where the depth of water prevents a Visual examination.

4.16.30   Additional examinations are carried out as required, for example if a structure has suffered significant accidental damage from a bridge strike.

4.16.31   NR Standard ***NR/L3/CIV/006 Handbook For The Examination Of Structures*** defines the requirements and provides recommendations for:

- The examination of structures

- Recording and reporting the findings of an examination

- Identifying actions and remedial works that need to be undertaken so that there is no unacceptable risk to the safety or performance of a structure as a result of its condition

4.16.32   The competency of those undertaking examinations and evaluating the results of examinations are specified in NR Standard ***NR/SP/CTM/017 Competence and Training in Civil Engineering***.

Bridges and culverts

4.16.33   The requirements for examination of bridges and culverts are defined in NR Standard ***NR/L3/CIV/006 Handbook for the Examination of Structures***.

4.16.34   NR undertakes a programme of structural assessment of bridges and puts in place mitigation measures for bridges that have yet to be assessed as part of this programme or for those bridges that are not amenable to a quantified assessment. Structural assessments are also undertaken as and when required, for example, prior to a change in the use of a bridge. The arrangements for undertaking a structural assessment of underbridges are detailed in NR Standard *NR/GN/CIV/025 The Structural Assessment of Underbridges.*

Bridge Strikes

4.16.35   The requirements for the management of bridge strikes are described in NR Standard *NR/L3/CIV/176 Management of Reports on Bridge Strikes*. Guidance on the interpretation and application of these requirements is provided in NR guidance note *NR/GN/CIV/202 Management of the risk of Bridge Strikes*. Further and more specific guidance on the process and activities to be undertaken by Bridge Strike Nominees is provided in NR guidance note *NR/GN/CIV/201 Management of Bridge Strikes - Good Practice Guide for Bridge Strike Nominees*. This document provides guidance on the processes to be followed during examination of bridges following a reported bridge strike and gives examples showing the damage limits to a bridge up to which Bridge Strike Nominees are authorised to permit train movements.

4.16.36   Instructions on the response to a notification of a bridge strike are contained in the Rule Book Module TS1 and also in Signal Box Special Instructions.

4.16.37   Persons authorised to examine bridges that have been struck by a vehicle and who have to make decisions on the re-opening of railway lines to rail traffic are trained and certified as competent in accordance with NR Standard *NR/SP/CTM/017 Competence and Training in Civil Engineering*.

Tunnels

4.16.38   Detailed examination frequencies of tunnels are determined in accordance with NR Standard *NR/L3/CIV/006 Handbook For The Examination Of Structures*. Each tunnel is divided into separate components such as tunnel bores, shafts and adits so that, as appropriate, different components can be examined at different intervals. Examination intervals are then determined using a risk based approach, with intervals ranging from one year for higher risk category components to 6 years for components in the lowest risk category.

Earthworks

4.16.39   The NR Earthworks Asset policy sets out the approach of the organisation in delivering earthworks management which meets the safety and commercial requirements which the organisation and its stakeholders require. The asset policy is supported by NR Standard *NR/L2/CIV/086 – Management of Earthworks* which in turn is supported by:

- *NR/L3/CIV/065 - Examination of earthworks*

- *NR/L3/CIV/071 - Geotechnical Design*

- *NR/L3/CIV/028 - The management of reports of Safety-Related Events on Buildings and Civil Engineering infrastructure*

4.16.40   The geotechnical suite of standards will be converted into the Business Critical Rules framework.

Drainage

4.16.41   The NR Drainage Asset Policy sets out the approach of the organisation delivering drainage management which meets the safety and commercial requirements which the organisation and its stakeholders require. The Asset policy is supported by the NR Standard *NR/L3/CIV/005 Railway Drainage Systems Manual* which defines the requirements and provides recommendations for:

- The management of Drainage Systems
- The design, remediation and installation of Drainage Systems
- The Inspection and Maintenance of Drainage Systems
- Recording information on Drainage Systems
- Drainage Management Plans

4.16.42   NR has identified key priorities and developed short term drainage objectives which set out targets for completion within 3 to 5 year spans. The drainage objectives are monitored through the engineering assurance process.

4.16.43   NR is developing a 30 year Drainage Asset Strategy which will provide the direction for the Drainage Asset across the whole lifecycle management of the asset.

4.16.44   The CIV005 suite of standards will be converted into the Business Critical Rules framework where developments such as decision support tools and mobile inspection tools will be mandated.

Buildings and station structures

4.16.45   NR Standard *NR/L3/CIV/006 Handbook for the Examination of Structures* sets out two examination regimes for building and station structures. The major structural elements, such as train shed roofs and platform canopies, generally receive a Visual examination every 12 months and a detailed examination every five years. Other elements of a buildings fabric receive a Visual examination every five years.

4.16.46   These examinations are supported by processes to receive and respond to reports of defects and to review and implement an annual planned maintenance programme.

Repair and maintenance of structures

4.16.47   On those rare occasions when defects are found during an examination which, in the opinion of the examiner, give rise to immediate concern for the continuing safety of a structure, the operational railway, people, equipment or property they are immediately reported to Control.

4.16.48   In the more usual case of structures having defects that are not of immediate concern the information provided in examination reports is used to determine what mitigation measures may be required and also the timing and extent of any necessary repair works. If necessary the continued safety of the structure is assured by carrying out additional examinations or increasing the frequency of the detailed examinations.

Track

4.16.49   The NR Track Asset Management Policy sets out the approach of the organisation in delivering track which meets the safety and commercial standards which the organisation and its customers require. The asset policy is supported by principal NR Standards, including:

- Track design (***NR/L2/TRK/2049 Track Design Handbook***)

- Construction (***NR/L2/TRK/2102 Design and Construction of Track***)

- Inspection and maintenance (***NR/L2/TRK/001 Inspection and Maintenance of Permanent Way***)

- The control of risks associated with continuous welded rail track (***NR/L2/TRK/3011 Continuous Welded Rail (CWR) Track***)

4.16.50   The full suite of 133 track standards will be converted into the Business Critical Rules framework. The ***Risk Based Maintenance Tool*** will be used as the best practice process to risk assess local change requests against national baseline requirements.

4.16.51   NR uses industry approved modelling tools to identify the sustainability of various policy options and undertakes assurance of compliance to policy.

4.16.52   Competence requirements are set out in individual NR Standards such as ***NR/L2/TRK/001 Inspection and Maintenance of Permanent Way*** and ***NR/SP/CTM/011 Competence and Training in Track Engineering***.

Switches & Crossings (S&C)

4.16.53   The following NR Standards provide additional guidance in support of the management of S&C:

- Design and specification (***NR/L2/TRK/070 S&C System Specification for the design of switches and crossings***)

- Inspection and maintenance (***NR/L2/TRK/001/mod05 Switches and crossings (S&C)***)

- Inspection and repair (***NR/L2/TRK/0053 Inspection and Repair Procedures to Reduce the Risk of Derailment at Switches***)

Lineside

4.16.54   NR has processes in place which support boundary management measures commensurate with assessed risks posed by the adjacent environment and the railway, and incorporate methods of assessing these risks.

4.16.55   Inspections and remedial activities are carried out along the line of the boundary at prescribed periodicities, dependent on the risk of breach, or adverse impact on the managed infrastructure, in compliance with the following NR Standards:

- The control of risks associated with animal incursion, trespass and vandalism (***NR/L2/TRK/5100 Management of Fencing and other Boundary Measures***)

- The control of risks associated with lineside vegetation (***NR/L2/TRK/5201 Management of lineside vegetation***)

Infrastructure Projects (IP)

4.16.56   IP Track delivery arrangements are documented in Infrastructure Projects (Track) Portfolio Management Plan – IP6027. This document defines the operation and principles behind the Track Delivery organisational structure including High Output and Switches & Crossings. Further aspects of track management arrangements are detailed in other relevant NR standards.

Electrical Supplies

Electromagnetic Fields

4.16.57   The health and safety of the workforce can be affected by the exposure to the electric and magnetic fields (EMFs).

4.16.58   The *Control of Electromagnetic Fields at Work Regulations* implement European Directive 2013/35/EU on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields). The *CEFW Regulations* place general duties on employers and employees to prevent harm arising from the conduct of their business activities.

Traction Current

4.16.59   The electrical supply system is designed, constructed, maintained and operated to deliver traction current to the trains in a safe and efficient manner, in accordance with the requirements of the *Electricity at Work Regulations* and other relevant safety legislation. Electrical loading is determined for normal/permissible degraded operation and short circuit currents are determined for credible fault conditions. Circuit breakers are used to supply the catenary or conductor rail system. They are fitted with over current protection relays that will automatically disconnect the supply if an overload or fault occurs.

4.16.60   The electrical supply can be switched on and off remotely from an electrical control room for the purpose of isolating the system for emergencies or planned work. Procedures covering all control room activities are contained in Local Control Room Instructions, and Control Room personnel are required to be competent in these and all other rules and instructions associated with the operation of the traction supply system.

4.16.61   The system and the components that make up the system are designed and constructed to be compliant with relevant European/National Standards, *RGSs* and NR Standards.

4.16.62   The system is installed by accredited suppliers, and maintained by competent persons in accordance with a suite of organisation maintenance standards.

4.16.63   The key standards that control the risk of inadvertent contact with live parts of the system are the Electrified Line Work Instructions, and all staff and contractors that work in the vicinity of electrified lines are required to be competent in the rules and instructions contained therein. Where relevant, NR employees and contractors also have to be competent in the rules and instructions relating to the operation and isolation of the associated electrical distribution systems.

4.16.64   NR is trialling manual securing of isolation on newly electrified infrastructure, and is further developing remote securing solutions for roll out across legacy power distribution systems.

4.16.65   NR recognises there is scope to review power supply, local switching and isolation arrangements, in order to identify options to improve safety in both routine and emergency situations, including in conjunction with other duty holders where facilities are leased or shared.

4.16.66   The NR Standard *NR/SP/ELP/29987 Working on or about 25kV AC Electrified Lines* is formed of a suite of thirteen individual modules, the first of which is an introductory preface. The suite is appropriate for employers and those persons under their supervision required to work on or about 25kV AC Electrified Lines.

4.16.67   The DC electrified railways have three separate NR Standards for safe working:

- *NR/WI/ELP/3091 DC Electrified Line Work Instructions*

- *NR/WI/ELP/27051 Work Instructions for DC electrified lines in the Liverpool area*

- *NR/WI/ELP/27052 Working Instructions for DC Electrified Lines on the Northern City Line*

4.17   Public Safety

Level Crossing Overview

4.17.1   There are two categories of level crossing in use across the rail network, namely those that are for public use and those that are for private use. Public crossings are used by the general public and may be pedestrian, vehicular or both. Whereas Private crossings are used only by authorised parties (e.g. a farmer).

4.17.2   All crossings are further categorised as being Protected or Unprotected. Protected (Active) Crossings provide warning of the approach of a train through the closure of gates or barriers, or by warning lights and/or sound and this protection may be Controlled or Automatic. Controlled protection is provided by a signaller, either at the crossing or at a remote location using Closed Circuit Television (CCTV) surveillance cameras. Automatic protection is afforded by the passage of the train and activated on the approach to the crossing. Unprotected (Passive) Crossings do not provide a warning that a train is approaching, rather it is for the user to determine whether it is safe to cross. For either category of crossing, specific design criteria must be met and instructions for safe use, with appropriate signage, must be provided at all level crossing locations. The design criteria are summarised in the *Office of Rail & Road (ORR) Level Crossings: A guide for managers, designers and operators (Railway Safety Publication 7 - December 2011)*.

Level crossing types

4.17.3   There are a number of different types of level crossings in use across the rail network.

Private crossings

4.17.4   Private crossings, also known as User-Worked Crossings (UWCs) are provided with signs to advise users of the correct method of working at each UWC. Depending on the level of safety risk associated with each UWC, some will have additional protection:

- GPS-based system that provides the signaller with information relating to a trains proximity to the crossing

- Detection of the trains proximity by RADAR which triggers local warning by way of wayside train horns

- Train detection within the block section accomplished using full axle counter techniques

Public crossings

- **Manually Controlled Gate Crossing** - These have gates on both sides of the road, and the gates are normally closed to road traffic when a train is approaching, although not all manually controlled gated crossings on public roads are maintained in a normally open to road position. Furthermore, not all manually controlled gate crossings are operated by NR employees.

- **Manually Controlled Barrier Crossing (including CCTV)** - These have full barriers on both sides of the road. It is operated by a NR employee, either at the crossing or using a Closed Circuit Television (CCTV) surveillance system to control it remotely. When a train is coming, there is a warning amber light, followed by alternately flashing red lights. There is additionally an audible warning for pedestrians, cyclists and horse riders.

- **Manually Controlled Barrier Crossing with obstacle detection (MCB-OD)** - uses obstacle detection technology in place of CCTV.

- **Traincrew Operated Crossing** - There are a relatively small number of these crossings. They have gates on both sides of the road and are operated by the train crew, who will close the gates before the train goes through the crossing.

- **Automatic Half Barrier and Barrier Crossing (Locally Monitored)** - These have road traffic signals and half barriers across the left hand side of the road, which are either automatically operated by approaching trains, or by the train driver. When a train is coming, there is a warning amber light, followed by alternately flashing red lights. There is also a warning tone for pedestrians, cyclists and horse riders.

- **Automatic Open Crossing (Locally Monitored)** - These have no barriers but have road traffic signals, which are either automatically operated by approaching trains, or by the train driver. When a train is coming, there is a warning amber light, followed by alternately flashing red lights. There is also a warning tone for pedestrians, cyclists and horse riders.

- **Automatic Open Crossing (Locally monitored)+Barrier** – Similar operation to AOCL, with the addition of half barriers. The barriers deploy automatically alongside the flashing light sequence and warning tone.

- **Automatic Open Crossing (Remotely Monitored)** - There is no form of barrier protection at this crossing but have road traffic signals, which are automatically operated by approaching trains. Once the train has passed the crossing, the siren stops sounding, followed by the extinction of the traffic lights. The equipment is monitored at a remote point, which is manned when the line is open. In addition, telephones connected to the manned monitoring point are available for the crossing user.

- **Open Level Crossing** - These are open to the road, with no road traffic signals, barriers or gates. There are signs warning road users to give way to oncoming trains.

- **Bridleway Crossing** - These are crossings, usually gated, that are primarily designed for horses and their riders. Some have telephones for contacting the signaller, due to the reduced visibility of approaching trains.

- **Footpath Crossing** - These are crossings, usually gated, that are primarily designed for pedestrians. There are three different types: those with no protection, those with Whistle Boards, and those with Miniature Warning Lights. There may be styles or wicket gates restricting access to the crossing.

- **Station Crossing with Miniature Warning Lights** - These level crossings are found at stations. They provide access between platforms at stations with no footbridge, or disabled access between platforms. They have Miniature Warning Lights that indicate when it is safe to cross.

- **Station Crossing With White Lights** - These provide access between platforms at stations with no footbridge or disabled access and require users to be accompanied by Station staff.

- **Station Crossing With No Gates** - These provide access between platforms at stations with no footbridge, or disabled access between platforms. There are no gates.

New technology

4.17.5   NR is adopting new technologies such as:

- **Overlay Miniature Stop Lights** - The Overlay MSL family gives a flexible level crossing solution for footpath and user worked crossings. The system provides red/green warning lights indicating to crossing users whether or not it is safe for them to cross.

- **EBI Gate 2000 Level Crossing** - Provide highly reliable barriers and signals across a main line or mass transit network. Various types of occupancy detectors and warning devices can be applied as required.

- **Supplementary Audible Warning Device (Covtec)** - The system provides an audible warning to pedestrian users at footpath crossings, supplementing existing whistle board protection arrangements.

NR is additionally investing and developing alternative technologies to supplement existing solutions, and these will be phased into use following rigorous testing and assessment.

Risk controls

4.17.6   NR's *level crossing policy* describes the organisation's approach to managing level crossing safety. Risks associated with level crossings are managed principally through:

- The mandated requirements and standards for the production of signalling design for, among others, level crossings that are set out in NR Standard *NR/L2/SIG/11201 Signalling Design Handbook*

- A programme of risk assessment to identify reasonably practicable measures for further risk reduction

- The continued reduction in the numbers of level crossings where justified

- Effective operation and maintenance

- Educating users and the public on the risks from level crossings misuse through ongoing local and national communication campaigns that promote the safe use of level crossings

- Co-operating with the police and local authorities in the enforcement of the law relating to level crossings

Signalling design and installation

4.17.7   The method of integrating level crossings with the remainder of the signalling system depends on the nature of the level crossing. There are a number of NR Standards covering the design and installation of level crossings. NR Standard *NR/L2/SIG/11201 Signalling Design Handbook* sets out NR's approach to the design of signalling assets and contains a number of modules covering both the design requirements common to all types of level crossing and also the requirements for specific types of crossing. These modules have been updated to take account of ERTMS.

4.17.8   NR Standard *NR/L3/SIG/11303 Signalling Installation* mandates that any installation of new or altered systems and equipment on NRMI provides an operationally safe installation with safe interfaces between systems.

4.17.9   NR Standard *NR/L2/SIG/30015 Specification for Station, footpath, bridleway and user worked Level Crossings* provides the preferred layouts for renewal of crossings, and is applicable to new crossings or those assets that are to be renewed during maintenance works. The standard guides the installer/maintainer on how to position equipment when the method of protection has been established.

Risk assessment and reduction

4.17.10   Operations Risk Advisors, and Level Crossing Managers, have arrangements in place for conducting risk assessments of all level crossings and reviewing these at appropriate frequencies. NR Standard *NR/L2/OPS/100 Provision, Risk Assessment and Review of Level Crossings* sets out the consistent process for determining the safety requirements for new level crossings, and the risk assessment and management processes that apply to both new and existing level crossings.

4.17.11   NR has recently written its strategy 'Transforming Level Crossings A long term strategy to improve safety at level crossings. Network Rail 2015-2040' and uses the All Level Crossing Risk Model (ALCRM) within its wider level crossing risk management process to:

- Evaluate safety risks associated with individual level crossings, based on characteristics such as usage, road speed and layout, train speed and frequency, and the level of protection provided by the crossing, as well as factors such as the duration of warnings and closures

- Support cost-benefit analyses of the options for reducing risk at level crossings

4.17.12   NR has developed a model called the Level Crossing Risk Indicator Model (LCRIM) to track risk at level crossings and regularly monitor risk reduction.

4.17.13   The benefits associated with the delivery of level crossing initiatives are calculated using the optioneering capability within ALCRM. For example, when initiatives such as closure or diversion and improvements such as installation of barriers are implemented, the risk reduction is reflected in ALCRM and also the LCRIM.

4.17.14   In the event of an accident or reported frequent misuse being apparent at a public level crossing, additional risk assessment is undertaken over and above the regular, routine risk assessment programme.

4.17.15   Following the risk assessment, the output is reviewed and, where justified, schemes are developed to reduce the risk as far as is reasonably practicable. NR undertakes appropriate approval prior to making any change to the type of protection at a public level crossing.

Operation and maintenance

4.17.16   Level crossings are operated in accordance with the Rule Book, associated instructions and NR Standards such as the Operations Manual. The Head of Operations Principles & Standards undertakes regular review of the adequacy of relevant standards in light of level crossing accidents and incidents.

4.17.17   Route-based teams of Level Crossing Managers, within the Route, follow a set of instructions developed by the Head of Discipline Signals, for the inspection and maintenance of all types of level crossings.

4.17.18   The frequency and specification of inspection of level crossings is mandated by NR Standard **NR/L2/SIG/19608 Level Crossing Infrastructure Inspection and Maintenance Handbook**.

Education

4.17.19   Over a number of years the UK rail industry has developed an increased level of maturity with regard to managing level crossing risk. NR's organisational capability, processes and systems have improved and evolved. At the same time physical improvement and enhancement projects have seen risk reduced through crossing closure, engineering and enforcement schemes. Finally, public education and awareness campaigns have raised the profile of level crossing safety with user groups.

4.17.20   The majority of accidents can be attributed to deliberate misuse and user human errors when using level crossings. Regular communication campaigns, at local and national level, are developed by the Director, External Relations to highlight the risks associated with level crossings and to promote the safe use of crossings by the public. These are supported by the appropriate educational material, such as user Safety Guides. Those with rights to use private user-worked level crossings are written to on a regular basis with instructions for the correct use of the respective crossing.

Platform train interface risk

4.17.21   NR has developed an approach to PTI which is based on a detailed understanding of the risks that exist, using quantitative and qualitative methodologies to really understand the data, and to share the data identifying trends and good practises. Working with industry stakeholders practical mitigations are being identified and deployed across the network. NR has set out plans and recommendations to benefit safety risk, performance impact, and capacity, which will support managing risk, and introduce consistency of approach.

4.17.22   PTI affects many areas of design and operation that are not always compatible:

- Platform clearances for passenger, freight, and plant vehicles

- Platform and passenger vehicle floor heights

- Optimal step and gap configurations for passengers with and without mobility issues, and those using wheelchairs

- Passenger train designs, including door configurations, train capacity, provision for luggage, and how these might affect overall performance

4.17.23   NR has adopted the RSSB Platform Train Interface (PTI) Risk Assessment Tool.

4.17.24   Following completion of station platform assessment, the data output is analysed, and recommendations are identified to keep each route and associated station operator informed of the risk profile at the specific station, so appropriate actions may be implemented.

4.18   Route Crime

Overview

4.18.1   The term Railway Crime covers criminal offences that occur on trains (on-train crime), on stations (station crime) and on its infrastructure (route crime). NR has primary responsibility for the management of route crime, which is defined as criminal offences committed on or affecting NR infrastructure, such as acts of trespass, vandalism and graffiti. NR's aim is to manage route crime such that there is no year-on-year increase in the level of associated risk.

Risk controls

4.18.2   The process for the management and monitoring of route crime is defined in NR Standard **NR/L2/OCS/050 Route Crime Risk Management** and the supporting procedure **NR/L3/OCS/041/5-31 Route Crime Risk Management** in the **NR/L3/OCS/041 The Operations Manual** and is based on delivering prioritised actions under the 4 Es strategy (i.e. Enabling, Education, Enforcement, Enhancement). Route crime risks are reduced by:

- The identification and risk assessment of locations susceptible to route crime

- The designation of route crime hotspots and development of action plans for mitigating route crime risks

- The inspection, maintenance and repair of the lineside boundary in accordance with the relevant organisation standard

- Minimising the opportunity for route crime by removing graffiti and controlling the level of scrap material and other potential obstructions on the lineside

- Establishing cross-industry partnerships with train operators, the police and others that enable a clear focus on the required actions to reduce route crime activity

- Educating the public on the risks from route crime through ongoing local and national communication campaigns

- Co-operating with the police and local authorities in the enforcement of the law relating to route crime

- Enhancement and control of fencing and access points to deter unauthorised access to the railway

4.18.3   NR Standard **NR/L2/TRK/5100 Management of Fencing and other Boundary Measures** specifies the boundary management measures commensurate with assessed risks posed by the adjacent environment and the railway. It defines the arrangements for inspection, assessment, repair and renewal of the boundary fencing. The prioritisation of repairs, the need for renewal and the type of

fencing/barrier to be used for renewal is determined using a likelihood and consequence risk matrix within the standard. Where the existing fencing/barrier is inadequate, consideration is made to renewing to the type of barrier/fence appropriate to the risk.

4.18.4   The Senior Engineers from the CESTE team, with specialist lineside knowledge, provide technical specifications, maintenance regimes and expertise to the Delivery Units for boundary fencing and access points. The Maintenance Engineers [Track] manage the inspection and assessment (keeping records of such), and the maintenance and renewal of boundary fencing and access points. Where there is evidence of route crime activity that has occurred since the last inspection, this is dealt with in accordance with NR Standard **NR/L2/OCS/050 Route Crime Risk Management**.

4.18.5   Sites or boundaries that are secured by Third Parties (commonly neighbours) are monitored and, where required, the Third Party is alerted to the need for repair or renewal.

4.18.6   The Route Asset Protection teams manage security issues relating to Outside Parties whose worksites border NR infrastructure.

4.18.7   Contractors and NR employees are required to adequately secure surplus or redundant material or remove it from the lineside and Infrastructure Maintenance Delivery Managers (Area Delivery Manager Wales) monitor compliance to this requirement. They also monitor the performance of contractors in relation to site safety and security and draw to their attention any breaches of contractual conditions.

4.18.8   Each Route Managing Director/ScotRail Alliance Managing Director (Scotland only), is responsible for monitoring and managing the risks associated with route crime within their designated Routes. Infrastructure Maintenance Delivery Managers are responsible for the security and maintenance of the railway boundary (note – for some specified locations this responsibility is allocated to others, e.g. civil engineer for large structures).

4.18.9   Operations Risk Advisors assess locations with very high levels of repeat trespass and vandalism as evidenced by information in **SMIS+**, or following an inspection undertaken in accordance with NR Standard **NR/L2/TRK/5100 Management of Fencing and Other Boundary Measures** which identifies route crime activity. Following assessment, for those that are designated as Route Crime Hotspots, line managers develop a coordinated programme of control measures.

4.18.10   Operations Risk Advisors co-ordinate the management of route crime, co-operating with other industry partners and the BT and civil police, identifying and coordinating the development of action plans for route crime hotspots.

4.18.11   Community Safety Managers take the lead regarding liaison with the public and other external stakeholders to raise awareness of risks from route crime. Community Safety Managers target appropriate groups of people (e.g. teenagers) based on guidance from the Operations Risk Advisors. They will consider whether further education and local community work can be implemented or refocused to address the issue. Where the Community Safety Manager confirms that further education, sponsorship or policing will not address the problem, enhancements for additional levels of fencing security may be considered.

4.18.12   Each Route Managing Director/ScotRail Alliance Managing Director (Scotland only) arranges for the risk at route crime hotspots to be reviewed following the completion of relevant action plans and at least annually. This may result in the site being declassified as no longer being a route crime hotspot, in which case further monitoring is not required. However, if the site continues to be classified as a route crime hotspot, the action plan is reviewed and updated as appropriate.

4.18.13   Community Safety Partnership Groups or equivalent, covering specific geographical areas and in accordance with agreed national priorities, facilitate the development and delivery of local level action plans aimed at reducing the risks and costs posed by railway crime. They comprise senior representatives of NR, train operators, freight operators, BTP and, where appropriate, other relevant agencies. A cross-industry Trespass Risk Group agrees national priorities and strategies aimed at reducing the risks and costs posed by crime, disorder and other forms of inappropriate public behaviour. The Group endorses the cross-industry delivery framework and monitors its effectiveness.

4.18.14   Media campaigns aimed at youths and children, use a number of different media (e.g. website, roadshows, sponsorship, advertising campaigns) to highlight the dangers associated with trespass.

Suicide prevention

4.18.15   NR is at the vanguard of suicide prevention in Great Britain. Since 2010 it has led an industry programme to reduce the:

- Risk of suicide on the railway

- Traumatic impact of suicide events on staff and customers

- Delay caused by suicide

4.18.16   The programme is underpinned through partnerships with two organisations:

- Samaritans, a relationship that began in 2010 which is now the longest running charitable/corporate enterprise of its type in this country

- A specialist British Transport Police Mental Health and Suicide Prevention Unit that came into being in 2013

4.18.17   NR's relationship with the industry is key to the success of the programme and is managed through the following groups which comprise part of its existing architecture:

- The presence of a suicide prevention representative in each route

- The National Suicide Prevention Working Group – NSPSG (a cross industry governance body of suicide prevention practitioners)

- The Suicide Prevention Duty Holders Group (essentially the industry's steering group for suicide prevention)

- System Safety Review Group (RISSG) led by RSSB

- National Task Force (NTF)

4.18.18   NR recognises the responsibility it has for protecting the rail network from suicide events. It does this through its route teams identifying vulnerable locations introducing appropriate mitigation measures, and its central suicide prevention team progressing longer term prevention initiatives.

4.18.19   It also endorses and subscribes to the SPDHG guidance issued in November 2016 (Guidance for creating a Suicide Prevention Plan) outlining the cross industry collaboration required to further address the suicide challenge on the network.

4.18.20   Suicide however is a societal problem the causes of which are outside NR's ability to control. Subsequently it works closely with Government, Local Authorities, Public Health England and other external agencies to address the issue upstream from the railway promoting help seeking behaviour amongst the most vulnerable and those at risk of suicide in society.

4.18.21   With its range of activities in this arena and the relationships it has forged outside the rail industry NR is seen as a world leader in preventing suicide in public spaces.

4.19   Operational Risk and SPAD Management (Management of SPADs)

Overview

4.19.1   Category A Signals Passed at Danger (SPADs) – where any part of a train passes a signal maintained at danger without the authority of the Signaller – have been identified as a significant risk associated with the NR operation. SPADs have the potential to cause accidents giving rise to multi-fatalities. They are associated with:

- Train Collisions

- Train Derailments

- Collisions with objects

- Collisions with road vehicles at level crossings

- Striking people on the line

- Where an in-cab signalled movement authority has been exceeded without authority

4.19.2   SPADs are categorised as follows:

- **Category A1** - When a SPAD has occurred and, according to available evidence, a stop aspect, indication or end of in-cab signalled movement authority was displayed or given correctly and in sufficient time for the train to be stopped safely at it.

- **Category A2** - When a SPAD has occurred and, according to available evidence, the stop aspect, indication or end of in-cab signalled movement authority concerned was not displayed or given correctly, but was preceded by the correct aspects or indications.

- **Category A3** - When a SPAD has occurred and, according to available evidence, verbal and/or visual permission to pass a signal at danger was given by a hand-signaller or other authorised person without the authority of the signaller.

- **Category A4** - When a SPAD has occurred and, according to available evidence, a stop aspect, indication or end of in-cab signalled movement authority was displayed or given correctly and in sufficient time for the train to be stopped safely at it, but the train driver was unable to stop their train owing

to circumstances beyond their control (for example, poor rail head adhesion, train braking equipment failure or malfunction etc.).

Risk controls

4.19.3   NR has a policy which is intended to reduce SPADs by the adoption of appropriate measures that reduce the occurrence of, and mitigate the consequences of, a Signal Passed at Danger.

Key areas include:

1. Engineering controls

2. Risk assessment

3. Maintenance of signalling equipment

4. Safety Critical Communication

5. Training, competence and development

6. Managing risk and dealing with change

7. Recognising industry good practice

8. Learning from lessons learnt

4.19.4   The Head of Driver Standards takes lead responsibility in implementing the policy. An annual risk reduction plan is provided to identify and implement safety improvements in order to prevent or reduce the likelihood of recurrence, or mitigate the consequences of an accident or incident.

4.19.5   Risks associated with SPADs are further reduced by:

*   The positioning and maintenance of signals to relevant standards

*   The maintenance of line-side vegetation to relevant NR Standards

*   A programme of risk assessment to identify reasonably practicable measures for further risk reduction

*   Undertaking joint monitoring and review with train operators, including the effectiveness of communications

*   The implementation of reasonably practicable measures identified to meet recommendations from investigations and signal sighting committees

*   Providing information on the location of Multi-SPAD signals

*   The implementation of engineering controls that reduce the consequence of SPADs

Communicating SPAD Information

4.19.6   Nationally, it is recognised that a significant proportion of SPAD incidents involve either a signal and/or a driver with a previous SPAD history. Driver safety briefing arrangements and NR Zonal Weekly Operating Notices arrangements are used to promote recognition and awareness of multiple SPAD signals. NR receives information from NR Routes on multi-SPAD signals in CD ROM format. HSMS 4.19.5 and 4.19.6 describe the arrangements that are in place to ensure that multi-SPAD signals relevant to NR are communicated to drivers (by SPAD notice cases at OTM Driver operator depots, SPAD focus groups etc.). NR. Multi-SPAD signals are also briefed as part of a SPAD awareness module within the driver training

programme. Arrangements are detailed in SP-306 Management of Signing on Points.

Monitoring

4.19.7   The monitoring of safety performance is undertaken through regular management review meetings. NR has implemented a performance management regime that enables the setting and monitoring of performance targets across NR's business activities. Safety is a key element of this regime. HSMS 2.13 Objectives, Targets and Programmes describes how NR sets safety targets for the business as a whole and how these are monitored.

Signal sighting

4.19.8   NR Standard **NR/L2/SIG/10157 Signal Sighting** details how signal sighting shall be undertaken for new and altered signals, and those where SPADs have occurred. It is directed towards confirming that signals are placed in the best possible position for train drivers.

Signal maintenance

4.19.9   NR Standard **NR/L2/SIG/10660 Implementation of Signalling Maintenance Specifications** mandates the use of signalling maintenance specifications by technicians and technical support personnel to check signal alignment and visibility.

Lineside vegetation management

4.19.10   NR Standard **NR/L2/TRK/5201 Management of Lineside Vegetation** mandates that lineside vegetation will undergo inspection, maintenance and management regimes derived from risk assessments based upon railway and vegetation characteristics. It also requires minimum distances for vegetation clearance on signal approaches.

Risk assessment of signals

4.19.11   NR Standard **NR/L2/SIG/14201 Prevention and Mitigation of Overruns – Risk Assessment of Signals** defines the process and tools for the risk assessment and review of all junction-protecting signals. This is supported by procedure **NR/L3/OCS/041/5-15 Estimating the Effectiveness of TPWS when Undertaking Signal Overrun Risk Assessment** which provides guidance in the estimation of TPWS effectiveness while undertaking the SORA process.

Joint monitoring of communications

4.19.12   The process for reactive and proactive monitoring of communications is defined in NR Standard **NR/L2/OPS/037 Management of Spoken Safety Communications**. NR undertakes joint review with train and station operators and infrastructure contractors of the quality of Signal Box Voice Recording Tapes.

Investigation recommendations

4.19.13   Each SPAD incident is investigated to ascertain the root cause and identify any lessons learnt. The process for investigating SPADs is detailed in NR Standards **NR/L2/INV/002 Specification – Accident and Incident Reporting and**

Investigation and *NR/L1/OPS/010 Signals Passed at Danger and Signal Reversions*.

4.19.14   The Signal Sighting Engineer arranges for Signal Sighting Committees to be held as required in accordance with NR Standard *NR/L1/OPS/010 Signals Passed at Danger and Signal Reversions* or when reasonably requested by train operators or NR employees. The recommendations from Signal Sighting committees are considered by the Route OPSRAM (or equivalent) Groups who track the progress of accepted recommendations.

Multi-SPAD information

4.19.15   Certain signals on the network have become Multiple SPAD signals, in that each one has been passed at danger (defined as Category A) twice or more in the last five years. Train operators are informed of the existence of Multiple SPAD Signals by:

- The National Operations Centre who issue an immediate Urgent Safety Related Advice to all train operators after a signal becomes a Multiple SPAD Signal (MSS), or when an existing MSS has another SPAD

- An MSS list which is provided in the Weekly Operating Notice (WON)

- The *Multiple SPAD Signals website* which is maintained by NR

Engineering controls

4.19.16   Network Rail uses a variety of different engineering controls designed to prevent or mitigate SPADs. These include: the Automatic Warning System, trainstops on the lines of route used by LUL rolling stock, ETCS (Indusi) for the interface with the Tyne & Wear Metro, two different Automatic Train Protection systems (Western Route and for Chiltern Trains), the European Train Control System and the Train Protection and Warning System.

4.19.17   The fitment of *Train Protection & Warning System (TPWS)* at signals, as required by the *Railway Safety Regulations*, is designed to mitigate the consequence of trains that approach stop signals too fast, by automatic application of the emergency brake. *TPWS* is designed for speeds up to 70 mph. For speeds up to 100 mph *TPWS*+ can be employed. *TPWS*+ has been fitted at selected higher-risk signals, thereby increasing the effectiveness of *TPWS* up to 100 mph. *TPWS/TPWS*+ fitment may be progressed at other signals following signal risk assessments where it is deemed to be a reasonably practicable mitigation action.

4.19.18   SPAD control can only be achieved by NR in collaboration with TOC and FOC partners. All Routes have meetings at which NR and train operators jointly review SPAD incidents and other operational safety interface issues, and develop initiatives to further reduce incidents. The recommendations from Signal Sighting committees are considered by this joint meeting who also track the progress of accepted recommendations.

Weather

4.19.19   The NR Standard *NR/L2/OCS/021 Weather – Managing the Operational Risks* defines extreme weather and the arrangements for managing the associated operational risks, including the use of weather forecast information, to give adequate preparation for such events.

4.19.20   Each Route has a weather strategy co-ordinator, who liaises closely with the Operational Weather Resilience Manager, in order to formulate, agree and practice emergency plans. Data on predicted weather is provided to the National Operations Centre, who on receipt of an adverse weather forecast will circulate a warning to all Route Controls and train operators, following which Route Controls will co-ordinate the implementation of the emergency plan.

4.19.21   *RGSs* are used throughout NR to control the risks arising from weather and seasonal change. *GE/RT8000* series The Rule Book gives instructions to traincrews, signallers and maintainers, for dealing with the effects of snow, flooding, and loss of adhesion.

4.19.22   A fleet of Multi-Purpose Vehicles (MPVs) and a variety of other trains, and trackside and mobile equipment are used to control the risks arising from weather and are able to undertake the following functions:

- Application of traction sanding gel to aid train adhesion

- De-icing equipment

- Firefighting equipment

- High pressure water jetting to clear the railhead of adhesion inhibiting substances

- Snow clearance fleet, including:

- Snow Blower

- Drift Ploughs

- Beilhack Snowploughs

- Snowblower

Extreme temperatures

4.19.23   As temperatures drop, each route invoke winterisation processes to mitigate risk of ice build-up on overhead line equipment (OLE), affecting trains and causing delays.

4.19.24   NR has developed a tool that can accurately forecast the likelihood of ice build-up on OLE, giving teams on the ground the chance to tackle it before it causes delays.

4.19.25   Track is installed to Railway Group and NR Standards, such that the infrastructure has the ability to cope with the changes in temperature that can be reasonably expected. As a representative example of such standards, NR Standard *NR/L2/TRK/3011 Continuous Welded Rail (CWR) Track* defines the requirements for the configuration, installation and maintenance of continuous welded rail track. This standard also specifies the methods to be used when stressing continuous welded rail in plain line and through switches and crossings.

4.19.26   NR Standard *NR/L2/TRK/001 Inspection and Maintenance of Permanent Way* defines the minimum requirements for the inspection and maintenance of NR's permanent way, including the reporting mechanism where a track buckle does occur, irrespective as to whether it occurs on continuous welded rail or jointed track.

4.19.27   Monitoring of track temperature at certain key locations is mandated through local instructions, with appropriate arrangements in place where specific levels are exceeded.

4.19.28   In the way that heat can have an adverse effect on track through unwanted expansion, extremes of cold can also have an unwanted effect causing contraction that can result in rail breaks. NR Standard *NR/L2/TRK/3011 Continuous Welded Rail (CWR) Track* mandates the optimum level of stress in rail to reduce the impact of cold temperatures.

4.19.29   Following extended periods of shut down (associated with Christmas and New Year holidays on some routes) the operation sometimes experiences additional risks associated with cold, whereby there is the potential for the build-up of ice (usually in the form of icicles) in tunnels and from over-bridges. Specific arrangements are in place to address this (please refer to NR Standard *NR/L3/TRK/1010 Management of responses to extreme weather conditions at structures, earthworks and other key locations*) and, in the majority of cases this involves the use of an examining locomotive or train. This examination also monitors for other effects of prolonged shut down, such as contamination of railhead. For Routes that regularly experience the effects of winter weather, specific instructions are published in the Sectional Appendix covering items such as use of Independent Snow Ploughs, Snow Blowers, and other winter working arrangements.

Low Rail Adhesion

4.19.30   The potential for SPADs and station overruns caused by low rail adhesion is addressed by NR Standards *NR/L2/OCS/096 High Risk Sites for Wrong Side Track Circuit Failures in Leaf Fall Areas and for Low Rail Adhesion*.

4.19.31   NR Standard *NR/L2/OCS/096 High Risk Sites for Wrong Side Track Circuit Failures in Leaf Fall Areas and for Low Rail Adhesion* describes the assessment process for identifying high risk sites for low rail adhesion and is directed toward ensuring that all long term or known sites which may be high risk are identified in a consistent way and that a structured process exists to alter the status of such sites.

4.19.32   These standards support RGS *GE/RT8040 Low Adhesion between the Wheel and the Rail – Managing the Risk* which requires arrangements to be in place to identify low rail adhesion sites and the remedial action and advice to drivers and others of such sites.

4.19.33   Leaf fall is associated with low rail adhesion and NR Standard *NR/L2/OCS/095 Determining High Risk Sites for Wrong Side Track Circuit Failures in Leaf Fall Areas* describes the process for identifying sites that may be high risk in respect of being likely to cause wrong side track circuit failures under leaf fall contamination conditions.

4.19.34   This standard supports Railway Industry Standard *RIS-3708-TOM Arrangements Concerning the Non-Operation of Track Circuits During the Leaf Fall Contamination Period* which requires arrangements to be in place that identify the need for, and subsequent removal of, restrictions to normal operations in the event of significant problems being encountered during the Autumn leaf fall period.

4.19.35   The sites of known low rail adhesion are listed in each Sectional Appendix and indicated via lineside signage to train drivers. At many of these sites, much work

has been undertaken to improve adhesion, such as mulch matting to prevent embankment growth, and tree felling. At certain locations, automatic traction gel applicators have been fitted.

Scour and Flooding

4.19.36 NR has arrangements in place for those sites with a history of flooding, and the respective Heads of Discipline for Track, Drainage, Structures and Geotechnical have NR Standards in place to reduce the incidence of, and the effects from, scour and flooding.

4.19.37 The suite of NR Level 2 standards such as *NR/SP/CIV/080 Management of Existing Bridges and Culverts* define specific requirements for structures that are at risk of damage through water action and/or scour.

4.19.38 Similarly, specific requirements for undertaking examination on these at-risk structures are defined in the suite of NR Level 2 standards such as *NR/L2/CIV/006 Handbook for the Examination of Structures*.

Communicating Safety of the Line Information

4.19.39 Safety is incorporated within NR's internal communication processes. The HSMS and other safety communications are available on Connect, specific safety briefs are given to staff, safety is incorporated into organisation publications, and safety issues are discussed at a variety of internal meetings. Further details on these arrangements can be found in HSMS 2.11 Safety Meetings.

4.19.40 NR has a specific process in place for communicating safety of the line information to drivers. The Head of Driving Standards within each TOC/FOC etc. is responsible for ensuring the content, target group and method of communication is timely, relevant and appropriate. Typical methods include publications, face to face briefings, route risk assessments, training and competence assessment. Typical information may include:

- Routine information relating to changes in the infrastructure including NR publications such as the Sectional Appendices, Periodic Operating, Notices and Weekly Operating Notices

- Rule Book and National Operating Instruction changes communicated through a combination of personal issue of rulebook updates and briefing on changes

- Urgent or late notices

- Safety of the Line incidents and investigations

- SPAD information

- Adhesion Related Incidents and Autumn Preparation

- NR (OPSRAM), Rail Delivery Group (RDG) Operations Council, RDG Operations Standards Forum, National conferences and industry workshops

4.20   Workforce Health and Safety

Lifesaving Rules and Fair Culture Principles

4.20.1 NR's *Lifesaving Rules are at the heart of its Safety Vision – everyone home safe every day* – and the result of its ongoing commitment to eliminate all injuries and fatalities in NR and on its infrastructure. They underpin its safety values and

vision, and they are for everyone, whether office based or working on the front line.

4.20.2   It is important that NR staff are treated fairly whilst at work. The *Fair Culture principles* are aimed at creating the environment in which close call reporting is supported and define how NR will investigate potential breaches of the Life Saving Rules (LSR) in a way which identifies the root cause, and moves away from a perceived culture of blame. There has been an increased focus on the consistent application of the Fair Culture principles across its contractors and supply chain.

4.20.3   All employees, having been briefed on the rules and associated fair consequences, have a responsibility to comply with the Lifesaving Rules and to personally intervene if they feel others may be working unsafely.

Home Safe Plan

4.20.4   NR has identified key areas where it needs to speed up its approach to ensuring the safety of its workforce and contractors. There are 21 projects and programmes within the *Home Safe Plan (Integrated Safety Plan)* designed to make a step change in the safety, health and wellbeing of people:

- Fatigue Risk Management
- Risk Management (WARAs)
- Management of Occupational Road Risk (MORR)
- Sentinel
- Electrical Safety Delivery (ESD)
- Safer Trackside Working (STW)
- Planning and Delivering Safer Working (PDSW)
- Procuring for Safety
- Safety Hour
- Community Safety Strategy
- Level Crossing Risk Reduction
- Reducing Platform Train Interface Risk
- Prioritised Technologies for Level Crossing Safety
- Train Accident Risk Reduction
- Health and Wellbeing Respiratory
- Health and Wellbeing Medical Standards
- Health and Wellbeing Resilience
- Health and Wellbeing First Aid
- Manual Handling Improvement Programme
- Business Critical Rules
- Integrated Management System

See ***Connect*** for further details.

Health and Safety Hazards

4.20.5   Risks to the health and safety of persons carrying out work on the infrastructure are assessed through work activity risk assessment and controlled to a level SFAIRP taking into account the requirements of relevant legislation.

4.20.6   The National Hazard Directory contains a list of specific health and safety hazards by line of route across the network, as well as generic hazards that may be encountered. NR Standard ***NR/L2/MTC/006 Maintenance and Contents of the National Hazard Directory*** defines the minimum content of the National Hazard Directory and stipulates the management arrangements, data maintenance, and hazard notification process, so that employees, contractors, and others can be supplied with details of hazards at site-specific locations.

4.20.7   It includes amongst other data:

- Locations where '**With Warning Work Site Working'** is prohibited

- Authorised walking routes

- Access points

- Signals barred to handsignallers

- Buried services

4.20.8   NR employees have access to this data through ***Connect***. Where employees do not have direct access to ***Connect***, line managers have arrangements in place to provide this information to those employees for whom they are responsible. Contractors are provided with access to the data through NR's National Hazard Directory which is provided to them in CD-ROM format. This directory brings all hazard data together in one place and provides contractors with a user-friendly interface to access the data that they require.

4.20.9   Additionally, NR contracts prohibit the import onto the infrastructure of harmful substances that have not been previously agreed. NR employees and contractors are required to inform their line manager if, in the process of their work, they come across any unforeseen harmful substances or hazards brought onto the infrastructure by the actions of others outside the control of NR, e.g. fly-tipping.

Trackside Safety

4.20.10   It is critical to Network Rail that our workforce can access the trackside environment safely. We have been working to improve our arrangements with regard to this matter. In particular we have reviewed and updated NR Standard ***NR/L2/OHS/019 Safety of people at work on or near the line***.

The standard specifies the requirements for establishing and publishing details of working with protection availability and prohibitions on 'working with warning' systems (also referred to in some systems as 'Red Zone Working'.

Working under protection is where the work activity is separated from train operations, whereas 'working with warning' is where work is undertaken where trains continue to run.

The standard supports the requirements of the Rule Book by requiring effective safe systems of work to be established that mitigate the risk of people being struck by trains. It also establishes the requirement to prevent harm from the work activity and location where the work is being undertaken.

NR Standard *NR/L2/OHS/019 Safety of people at work on or near the line* emphasises that:

1. Person will be in charge of work so that a workgroup know who is accountable for their safety and delivery of their work

2. That person will have been involved in planning the work. Planning is critical to track worker safety and that a safe system of work must be established

3. The planning arrangement will ensure that task risk is identified and mitigated as part of the planning process. This is implemented via a safe work pack (SWP) before work can be undertaken. The SWP is required to take account of:

   - The way that the work tasks will be undertaken

   - Any specific requirements for doing the work

   - The operational (train Vs person) risk and what arrangements will be employed to control that risk as identified in the Rule Book

   - The occupational risks presented by the task(s) and location and what arrangements will be employed to control those risks.

   - The characteristics of the location of the planned work, including working under protection availability or prohibitions on 'working with warning' (also known as 'Red Zone Working Prohibitions)

4.20.11 Working under protection provides staff with an overall higher level of risk mitigation from trains compared to working with a warning system. It remains the first choice method of working, even where working with a warning is permitted, due to the increased level of protection this provides. Working under protection may be a safeguarded, fenced or separated area to provide protection to the staff working in that area.

4.20.12 Where it is necessary to 'work with warning', appropriate warning is afforded to those working within it. Safety systems of work include (in hierarchical order, 1st being the most effective):

Track warning systems	LEWIS SCWS	1st
	ATWS (fixed)	2nd
	SATWS (fixed)	3rd
	TOWS	4th
	LOWS 1.5	5th
	ATWS (mobile)	6th
	SATWS (mobile)	7th
	Lookout Fixed refuge	8th
	Lookout Distant	9th
	Lookout Intermediate	10th

| | Lookout (site) | 11th |

4.20.13   An assessment of the operational and task risks associated with any work on NR infrastructure is required to be undertaken through this standard.

This assessment is used as the basis for the development of a Safe Work Pack (SWP). The SWP is an integral part of a SSOW and is informed by the risk assessment process, which determines how work can be carried out safely. It enables effective management of a wide range of activities undertaken in differing operational environments, often in close proximity to each other. The term SWP refers to a pack of information that directs the PIC on how work is to be carried out safely and gives details on how to manage and control task (activity), site, and operational risks. Whether it is manually or electronically generated, it is a detailed document which authorises specific people to carry out specific work at a specific site at a specific time, and sets out the controls necessary to complete the job safely.

Person in Charge (PIC)

4.20.14   NR Standard *NR/L2/OHS/019 Safety of people at work on or near the line* introduces the term 'Person in Charge' (PIC).

The PIC is accountable for their own safety and the safety of all persons in their work group. This includes risks of being struck by trains and the risks associated with the task(s) and location.

As a prerequisite, the PIC shall hold one of the following competencies:

- COSS / SWL

- IWA as a minimum when working alone

It is expected that the PIC will deliver the supervision of the workgroup and manage the protection from train operations. There may be occasions during planning when the PIC may need to delegate the role of COSS. Where the PIC is not acting as the COSS, the person appointed as the COSS shall carry out the requirements of COSS duties in accordance with the *Rule Book (GE/RT8000)*.

4.20.15   Accountability for the protection of a group of staff from both operational and occupational risks rests with the PIC.

Where the planned controls prove to be inappropriate the PIC is required to implement a higher level of protection or to adjust the work or planned protection arrangements. They are not permitted to implement a lower level of protection without specific authority from a responsible manager. If the PIC is unable to implement a higher level of protection or to adjust the work or planned protection arrangements, work is not allowed to commence and they are required to refer the matter to the responsible manager. When this occurs the responsible manager reviews the arrangements and determines whether it is reasonably practicable to authorise a lesser means of risk control, but that which still keeps the staff exposed safe and unharmed.

4.20.16   Where a PIC is appointed they are required to check that all staff employed on that site are briefed as to the safety arrangements in place before work commences.

4.20.17   Where one person is to undertake work alone, this person is required to be certificated competent as an Individual Working Alone (IWA)/SWL/COSS, and the location has to be authorised as one where individuals may work alone.

4.20.18   The potential risks that can be imported by the employment of contractors and control of suppliers are controlled by the implementation of robust process. *Sentinel* manages a secure database of persons qualified in PTS and associated competencies including IWA, SWL, COSS, and PIC of Possession. *Sentinel* issues track safety competency cards to personnel who are competent in the track safety disciplines to which the scheme applies. Before issuing a card they require evidence to be submitted relating to the individuals competence and medical fitness to undertake such works. This can only be supplied by licensed training centres that employ accredited trainers both of whom are subjected to annual and random audit.

4.20.19   Selection and verification of suppliers and contractors are in accordance with NR Standard *NR/L2/CPR/302 Supplier Qualification – Core Requirements*. Contractor and supplier management processes include:

- Prequalification of contractors and suppliers to ensure robust arrangements are in place, this could include audit process

- Assessment and control of risk

- Selection and competence of contractors and suppliers

- Site access procedures

- Monitoring of contractor and supplier performance, including previous safety record

4.20.20   The *Sentinel* accreditation process applies to NR employees, contractors and sub-contractors. Train and station operators are required to comply with relevant *RGSs* relating to track safety.

4.20.21   Sentinel manages a secure database of persons qualified in Personal Track Safety and associated competencies including IWA, SWL, COSS, Person in Charge of Possession (PICOP). Sentinel issues track safety competency cards to personnel who are competent in the track safety disciplines to which the scheme applies. Before issuing a card they require evidence to be submitted relating to the individuals competence and medical fitness to undertake such works. This can only be supplied by licensed training centres that employ accredited trainers both of whom are subjected to annual and random audit.

Sentinel Track Safety Competence Scheme

4.20.22   The Sentinel scheme is designed to ensure only workers who are competent to carry out safety critical work on the NRMI, do so. These arrangements are described in NR Standard *NR/L2/OHS/050 Sentinel Scheme Rules*. Under the Track Worker Identification and Safety Competence Scheme (*Sentinel*), contract personnel (including those engaged in safety critical work) are required to hold valid *Sentinel* safety identification and competence cards to access areas defined as on or near the line. Employers of such cardholders are required to hold appropriate supplier qualification. Control is achieved through links between the *Sentinel* and *RISQS* qualification scheme databases.

Access to the Infrastructure

4.20.23   NR recognises that risks can be imported by the presence of, or actions taken by, persons other than its own employees activities, including contractors under NR control. Typically this may include contractor activity not employed by NR, public behaviour such as level crossing misuse, trespasser activity or route crime. Train and station operators are required to comply with relevant RGSs relating to track safety.

4.20.24   Access to NR infrastructure is restricted to employees, operators, contractors and others who have a legitimate reason to be there in order to undertake their duties. The process for managing such access is described in *RGSs* and NR Standards. At their core, the standards seek to reflect the general principles identified by the *Railway Industry Advisory Committee (RIAC)* for the planning and management of work on or near the line.

4.20.25   NR Standard *NR/SP/OHS/069 Lineside Facilities for Personnel Safety* sets out the design, construction and maintenance criteria for providing secure access points onto and along the track for authorised persons.

4.20.26   The Asset Protection team is the primary contact for arranging safe access to the infrastructure on a pre-planned basis, for example by Third parties, Outside parties, or Utility providers.

4.20.27   For Emergency access, liaison to effect safe access is via the Route Control and Local Operations Managers.

Changes affecting interface Risk

4.20.28   NR recognises that clear roles and responsibilities for managing safety at interfaces and across the system is critical in safety assurance. All network interfaces relating to operations and maintenance have been identified as follows:

- Arrangements to identify and manage interfaces (Appendix 3C Interface Organisations)

- Maintenance depots used by NR managed by other operators

- Risks arising due to the activities of others (HSMS 3.8)

- Risks affecting NR and others following change processes

4.20.29   In the event of any significant changes to interface risk, information will be shared and consulted prior to implementation to enable affected parties to assess, challenge and assure each-other of imported, exported and shared risks. This is done through consultation and then agreed communication methods e.g. joint meetings, joint and shared risk registers. Once the controls have been agreed, a monitoring strategy will be set to decide the information needed to check on controls and how to obtain and exchange it. NR and the affected parties will individually or jointly obtain, review and filter shared and individual data for review and, where necessary, follow up actions. NR has a meeting structure in place and provides for an escalating arrangement for non-compliance, risk or disputed issues.

Personal Track Safety (PTS) Certificate

4.20.30   PTS training, which is provided by NR, should be undertaken by anyone who is required to routinely work on or near the line. The recommendation is that anyone who is required to go on track (on or near the line) on more than 12 occasions in a 12 month period, is to achieve PTS competence. PTS is the foundation competence for all other Track Safety Competencies. The aim of PTS training is to provide the following:

- An understanding of NR **Drugs & Alcohol Policy** and the practical implications

- An ability to identify terms associated with the Railway Environment

- An understanding of the dangers of walking or working On or Near the Line

- Identification of hazards and the precautions and processes to control the risks

- Understanding of Safety Critical Communication, the protocols to be utilised and its effective use

- Understanding of the hazards and risk minimisation processes including when working in AC or DC Electrified Areas

- An ability to implement emergency action

- Best practices in relation to site security

4.20.31   Further guidance for Personal Track Safety is available in the **RT3170 Personal Track Safety (PTS) Handbook**.

RFLI Track Safety Competence

4.20.32   Staff required to work on or near 'Rail for London (Infrastructure) Ltd' Infrastructure, including yet not limited to the Crossrail Elizabeth Line, will require an RFLI Track Safety Competence.

Industry Common Induction (ICI)

4.20.33   The **ICI** provides staff with a health and safety induction for working in construction sites, rail depots and station maintenance. It has been developed by NR, in partnership with ISLG (Infrastructure Safety Liaison Group) and RIAG (Rail Infrastructure Assurance Group). It covers the safety procedures and risks that are common across the rail industry, whatever the role and type of site.

Track Visitor Permits (TVP)

4.20.34   A visitor who requires access on or near the line for a specific purpose and who does not hold PTS certification may apply for a Track Visitor Permit (TVP) using a centralised process. NR Standard **NR/L2/OHS/020 Track Visitor Permits** sets out the arrangements for the issue and control of these permits. The permits:

- Are valid for a maximum of 24 hours

- Allow access to multiple sites (maximum of four per TVP)

- Require medical and drugs and alcohol self-declaration

- Issued within a safety aide memoir

Personal Protective Equipment

4.20.35   Suitable **Personal Protective Equipment (PPE)** is provided for all employees exposed to a risk to their health or safety while at work in accordance with Regulation 4 of the **PPE at Work Regulations**. Minimum standards and requirements for PPE and workwear are specified in NR Standard **NR/L2/OHS/021 Personal Protective Equipment and Workwear**. Task-specific PPE requirements are identified by work activity risk assessments.

4.20.36   Wherever reasonably practicable, risks are eliminated or reduced at source before PPE is considered. Controls include the consideration of possibilities such as:

- Eliminating the hazard

- Reducing the level of the hazard by substitution with a less hazardous process

- Isolating persons from the hazard

4.20.37   If a hazard is identified that cannot be mitigated by any other means, a risk assessment is undertaken. A specific assessment may not be necessary where the requirement to wear PPE is absolute, e.g. the wearing of high-visibility clothing when working on or near the line. In these circumstances, the requirement for PPE is defined in the relevant Railway Group/NR Standard.

Display Screen Equipment

4.20.38   Risk assessment procedures are in place for Display Screen Equipment (NR Standard **NR/L2/OHS/00107, Management Procedure – Display Screen Equipment Risk Assessment)**. Employees are provided with computer and office equipment suitable for their role and information about its safe use. They are also provided with such additional or alternative equipment as is necessary to control risk identified during the risk assessment process.

First Aid at Work/Medical Treatment

4.20.39   NR Standard **NR/L2/OHS/00110 First Aid at Work** sets out the arrangements for the provision of first aid in the workplace, in accordance with the Health and Safety (First Aid) Regulations, and Approved Code of Practice. The level of first aid provision is defined by the number of NR employees in the workplace or worksite and the level of health and safety risk posed by the work activities undertaken.

4.20.40   First aid arrangements are specified for each location or as a result of risk assessment undertaken in accordance with NR Standard **NR/L2/OHS/00110 First Aid at Work** for each worksite. Employees are advised of the local first aid arrangements which exist at their location. The requisite level of first aid arrangements being based on the assessed level of risk. Line Managers are required to make provision for training adequate numbers of employees such that the specified First Aid arrangements are maintained.

Maintenance of Emergency Response Equipment

4.20.41   Where First Aid boxes are provided in facilities, a local manager is always nominated to carry out regular inspections of the First Aid box, checking its contents are correct. A dated label is used to seal the box after checking. A broken seal is used as an indicator that the box has been opened and the contents may have been used or removed.

4.20.42   Fire extinguishers installed in facilities are all embraced in a contracted annual inspection and maintenance regime. Discharged fire extinguishers are replaced as soon as practicable under a call off maintenance contract. Fire inspections and maintenance records are recorded in the Fire Log Book.

4.20.43   Where fire alarms, smoke detectors, emergency ventilations systems and other emergency equipment are installed in a building or other facility, these are always recorded in a plant inventory and are embraced in a maintenance program. Plant and equipment maintenance is carried out against a planned maintenance schedule. Auditable maintenance records are retained by the maintenance contractor.

Testing of Emergency and Escape Procedures

4.20.44   Emergency plans are regularly tested and reviewed. NR holds joint practical exercises with the emergency services and other responding agencies, train and station operators and Local Authorities to confirm that the emergency plans are effective, and that they can be applied in practice. Testing and review may be through live emergency exercises, table-top exercises or workshops as appropriate. NR also participates in planning meetings and exercises with external organisations, and provides access to its premises and infrastructure for familiarisation purposes.

4.20.45   Recommendations arising from testing and review are documented and incorporated into emergency plans and relevant standards, as appropriate.

Occupational health

4.20.46   NR embraces continuous improvement in occupational health management and implementation of relevant outcomes/milestones in its strategies and those of RSSB. These have brought about greater understanding of the benefits of health programme initiatives and enhanced measuring of their impact and progress. NR has continued development and reporting of occupational health metrics against NR's licence condition and published annual returns. NR encourages better use of absence data to drive health management benefits through targeting reduced rates of absence and more cost efficient health surveillance.

4.20.47   NR has an ambitious employee health and wellbeing strategy well into the next Control Period. This has clear measures of success, which are reported in a dashboard in the annual return, with the strategy delivering by 2024.

4.20.48   The CMO will provide greater strategic leadership in the area of occupational health and wellbeing, identifying, communicating and promoting industry best practice for NR to adopt in order to significantly improve the health and wellbeing of its workforce.

Health Controls

4.20.49   NR contracts with suitably qualified occupational healthcare suppliers to provide the medical examinations referred to in Railway Group and NR Standards and to offer **professional occupational health advice**.

4.20.50   Controls are in place to reduce the risks arising from health hazards and include:

- The application of Railway Group and NR Standards (for example, medical examination of employees prior to appointment of certain grades such as signallers, supervisors and those required to hold PTS certification)

- Rostering of employees

- Undertaking of noise surveys

- Identification of appropriate PPE, etc.

- Health surveillance

- Display screen equipment assessment

- Rehabilitation and back to work advice

- Stress management

- Health promotion/education

Health Surveillance

4.20.51   NR has a range of health surveillance programmes, including:

- Hand Arm Vibration Syndrome (HAVS) **NR/L2/OHS/00113 Health surveillance and management of diagnoses for Hand-arm Vibration Syndrome**

- Noise Induced Hearing Loss (NIHL) **NR/L2/OHS/00123, Health Screening and Surveillance for Noise Induced Hearing Loss**

- Respiratory health surveillance *NR/L2/OHS/157 - Health surveillance for silica and asbestos and the management of diagnosed occupational respiratory conditions*

4.20.52 Records are maintained on personnel files of an individual's involvement with health surveillance programmes, and records of the clinical results are maintained on confidential medical records. Where risk assessments identify that exposure to other occupational health risks for which health surveillance is appropriate may occur a local, targeted health surveillance programme is introduced.

Rehabilitation and Back to Work Advice

4.20.53 Impartial and objective advice on attendance management, rehabilitation programmes and back to work advice is available to line managers from its externally provided occupational health service provider (See *Connect*).

Stress Management

4.20.54 Arrangements are in place to assist all line managers to identify and support employees who may be experiencing difficulties with stress at work. This is available *via* Safety Central *Stress at Work Information*, and through NR Standard *NR/L2/OHS/053 Assessing the Risk of Stress in the Workplace*.

4.20.55 The provision of confidential counselling, advice and support to all employees and their immediate families is available through its externally provided Employee Assistance Programme.

Health and wellbeing promotion and education

4.20.56 Health and wellbeing promotions are designed to help employees to identify health and fitness requirements, providing advice at individual or group basis on several lifestyle issues such as diet, exercise, smoking, sensible drinking in order to promote employee wellness.

4.20.57 Health and wellbeing promotion initiatives are arranged corporately and health fairs arranged locally at Area level.

4.20.58 Employees are identified for health surveillance dependant on the hazard they are exposed to. In some instances there is a requirement for employees who hold particular competencies to participate in health surveillance.

4.20.59 Incorporated in employee health and wellbeing campaigns are healthy options within catering facilities and a host of health and wellbeing information through *via Safety Central*, health and wellbeing factsheets, newsletters, Network magazine and health literature provided by the organisation's occupational health service.

4.20.60 *Safety Central* reinforces the importance of the safety message and is supported by a series of videos and publications that are available through the Connect.

4.20.61 Questionnaires as part of HAVS health surveillance which, where necessary, triggers clinical surveillance. In other instances, work activity risk assessments are utilised with the line manager identifying the need for health surveillance following the processes defined in NR standards. NR also offers a medical assessment to all staff working on NRMI in line with the competency requirement is listed in Sentinel.

4.20.62   NR has contracted with a supplier to provide a highly specialised version of a physiotherapy service for any employee experiencing muscle, soft tissue or joint pain, commonly known as Musculoskeletal Disorders (MSDs).

4.20.63   A medically validated screening process is carried out to make sure there is no serious underlying medical condition and that the individual's situation is appropriate for physiotherapy.

4.21   Rail Mounted Vehicles Plant (RMVP)

4.21.1   NR utilises RMVP to inspect, maintain and renew the infrastructure. NR Standard *NR/L1/RMVP/0001* **Network Rails Plant and Traction and Rolling Stock Policy** describes the policy for the safe acquisition, operation, maintenance, monitoring and disposal of such RMVP, whether owned by NR or hired (directly or indirectly).

4.21.2   NR is the Entity in Charge of Maintenance (ECM) as defined in *ROGS* for the RMVP owned by NR, and registered as such on the National Vehicle Register (NVR). For RMVP under NR control, but not owned by NR an ECM shall be agreed with the vehicle owner and the Head of Plant and registered as such on the NVR

5   Network Rail standards and controls

5.1   Network Rail standards and controls document framework

5.1.1   NR standards and controls is the generic term for the documents that specify requirements and provide guidance directed towards securing the safe and efficient operation of the rail infrastructure. They support the overall organisation assurance system by specifying how NR controls its principal health and safety risks, and how the organisation complies with *TSIs*, domestic legislation, and *RGSs*.

5.1.2   NR standards and controls fit within a wider framework of regulatory and domestic legislation and standards that are applicable to the railway industry.

5.1.3   The standards and controls framework is designed to enable NR standards and controls owners to:

- Develop requirements that are designed to control and/or help appropriately mitigate identified safety and business risks, and

- describe those requirements within a hierarchy of NR Standards and controls
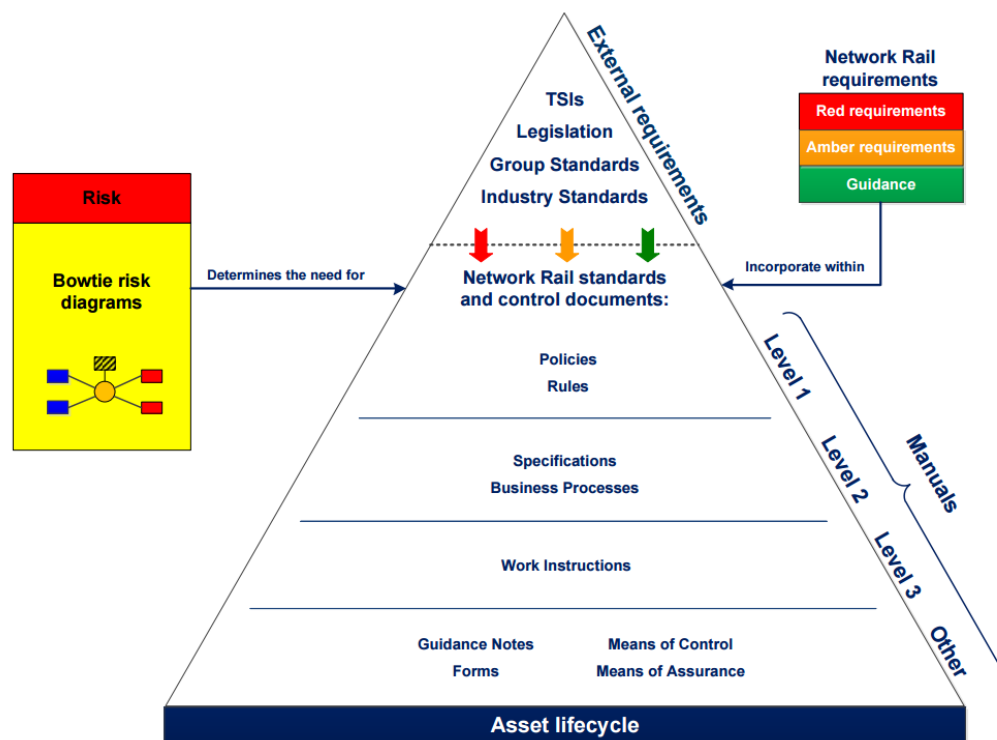
5.1.4   Where appropriate, BowTie analysis is used to visualise the controls in place to manage risk and help determine the standards and control documents required to support each control.

5.1.5   Where relevant in terms of the whole life cycle management of assets, the standards and controls framework aligns the risk controls to the asset management lifecycle stages that are based on BS ISO 55001 – Asset Management: Management System Requirements, published by the British Standards Institution. This standard provides a requirements checklist of good practices in physical asset management.

Legal and other requirements

5.1.6   NR is subject to general legislation, one example being statutes such as *HASAW*, an umbrella act creating a flexible approach to regulatory standards that, is supported by Regulations such as the *MHSW Regulations*. Other requirements include Approved Codes of Practice (ACOPs). ACOPs are semi legal therefore non-compliance does not constitute a legislation breach. However, if not followed it would be accepted in court that reasonably practicable measures had not been applied. This list is not exhaustive and other considerations include guidance notes, industry/trade best practice, agreements with interested parties, contractual conditions, corporate requirements and employee agreements. The requirements of these and other statutes are identified by NR's Heads of Disciplines and incorporated into NR's standards and controls as necessary.

5.1.7   NR is also subject to a number of rail specific requirements. The European Union has issued a number of directives aimed at promoting the efficient provision of rail services by providing open access to rail infrastructure and giving infrastructure managers a status independent of the state. These directives have been implemented through a number of domestic regulations, including *ROGS* and the *RI Regulations*. The requirements of these and other statutes are identified by

NR's Heads of Disciplines and incorporated into NR's standards and controls as necessary.

5.1.8   NR has an established Health and Safety Legal Register which sets out its legal requirements. The Health and Safety Legal Register is available on **Connect** and is usually updated every six months.

Technical Specifications for Interoperability (TSIs)

5.1.9   The Interoperability Directives focus on the removal of technical barriers to the supply of equipment and the through-running of trains across Europe. They mandate a number of essential requirements to be met for:

- Health

- Safety

- Environmental protection

- Reliability and availability

- Technical compatibility along with others specific to certain sub-systems

5.1.10   They also mandate the preparation and application of common technical standards (TSIs) to be applied across Europe's railways which define the technical standards required to satisfy those essential requirements. Furthermore, they require the adoption of common assessment and authorisation processes when new rolling stock is introduced or new lines are built, or when major work is done on the railway. In the UK, the RI Regulations implement these Directives. The DfT decide ultimately if a project is interoperable and the NR Assurance Panel (NRAP) assesses whether a project application is interoperable before an appropriate recommendation to the DfT is made (see NR Standard NR/L2/RSE/100/03 - The application of the interoperability regulations for infrastructure projects).

5.1.11   The **European Railway Agency** (established under the Safety Directive as an agency of the European Commission) is responsible for the development of **TSIs** and they take precedence over all other national standards (subject to reasonable cost constraints), including **RGSs** and NR standards and controls. However, there is a continuing role for national standards to manage that to which **TSIs** do not yet, or will never, apply.

Notified National Technical Rules (NNTRs)

5.1.12   Notified **National Technical Rules (NNTRs)** are those national standards that either fill a gap where a TSI does not exist, or fill an open point within a published TSI. The purpose of the **NNTRs** is to provide additional controls so that the essential requirements as specified in the **Interoperability Directives** are met. They are notified to the European Commission by the DfT.

5.1.13   The DfT publish a list of the latest set of **NNTRs** to be notified to the European Commission. It is updated as the number and scope of published **TSIs** is progressively increased. Prior to submission to the DfT, the list is firstly approved by the relevant Standards Committee and then by the **Rail Industry Standards Co-ordination Committee (RISCC)** of which NR has a minimum of two members representing the disciplines of Engineering and Safety.

Standards and the rail industry

5.1.14   Published by RSSB, the aim of standards is to support a compatible, cost-effective, safe and efficient railway system. To meet this aim standards define and record what has to be done, or how something needs to be done.

5.1.15   RSSB provides a clear framework to help apply standards, rules and best practice, and to take full advantage of the knowledge and guidance they contain.

5.1.16   There are seven modules to the RSSB strategy framework, reflecting the different types of standards or rules which exist today.

5.1.17   Under the guidance of Standards Committees, they are produced and implemented as specified in the *RGS Code*. The *RGS Code* has been developed based on input by RSSB members (including NR), endorsed by ISCC and authorised by the ORR.

5.1.18   In accordance with the Code, NR inputs to the development of standards, rules and best practice by providing suitably competent personnel to sit on Standards Committees and on other working and drafting groups managed by RSSB.

5.1.19   The CESTE and the Director, Telecoms Asset Management have responsibility for specifying engineering input and this is delivered by the Head of Discipline for each technical asset discipline.

5.1.20   The Group STE Director has responsibility for specifying operational input and this is delivered by the Head of Operations Principles & Standards as Head of Discipline for operations.

5.1.21   The Heads of Disciplines also identify potential changes to NR Standards necessitated by changes to *RGSs*.

National Technical Rules

5.1.22   *Notified National Technical Rules (NNTRs)* are those rules (standards) which the Interoperability Directive require each Member State to notify in the absence of a Technical Specification for Interoperability *(TSI)*.

5.1.23   In the absence of includes situations where a *TSI* has not been written yet, where it contains an identified open point or where a deviation from a *TSI* has been notified. *NNTRs* provide additional controls to ensure that the essential requirements specified in the Interoperability Directives are met.

5.1.24   *NNTRs* are not permitted to supplement the *TSIs* on performance related issues or repeat requirements mandated by the *TSIs*.

5.1.25   *NNTR*s also support specific cases in *TSIs* and set out requirements to maintain technical compatibility between existing assets that do not conform to the requirements of *TSIs* and new, upgraded or renewed assets conforming to *TSIs*.

5.1.26   The industry process to be used for identifying and managing *NNTRs* for the GB mainline railway is set out in the *Railway Group Standards Code*.

National Safety Rules

5.1.27   ***National Safety Rules (NSRs)*** are required by the ***Railway Safety Directive (Directive 2004/49/EC)***. They are defined as rules containing railway safety requirements imposed at Member State level and applicable to more than one railway undertaking, irrespective of the body issuing them.

5.1.28   ***NSRs*** supplement the ***Common Safety Methods*** that have been produced in accordance with Directive 2004/49/EC.

National Operations Publications

5.1.29   The National Operations Publications comprise:

- The ***Rule Book (GE/RT8000)*** - It comprises a set of modules and handbooks which contain direct instructions for railway staff. It sets out the operational rules for application on the GB mainline railway, which are necessary to enable the safe and timely delivery of people and goods to their destination and to provide the framework to enable safe engineering operations.

- ***The Working Manual for Rail Staff: Freight Train Operations (GO/RT3056)*** (*known as the white pages*) - Used by all staff concerned with the acceptance, planning, handling, conveyance, marshalling, and movement of freight traffic

- ***The Working Manual for Rail Staff: Handling and Carriage of Dangerous Goods (GO/RT3053)*** (*known as the pink pages*) - Used by all staff concerned with the classification, acceptance, identification, marshalling, movement and loading of dangerous goods

Rail Industry Standards

5.1.30   ***Rail Industry Standards (RISs)*** define functional or technical requirements to be met in circumstances where the management of the railway system does not need the use of ***RGSs***. RISs are railway-specific standards: they contain requirements applicable to subsystems, or they set out rules about how subsystems should be operated or managed.

Governance of Network Rail standards and controls

5.1.31   As well as specifying how NR controls its principal health and safety risks and how it complies with ***TSIs***, domestic legislation and ***RGSs***, NR Standards and controls also help facilitate the practical implementation of corporate policy by specifying mandatory activities and competences and giving guidance on activities to be undertaken on NR assets.

5.1.32   NR Standard ***NR/L2/CSG/STP001 Standards and Controls Management Manual*** and the following modules comprise the governance framework for managing standards and controls:

- ***NR/L2/CSG/STP001/01 Principles of Standard and Control Management***

- ***NR/L2/CSG/STP001/02 Managing Standard and Control Document Change Projects***

- ***NR/L2/CSG/STP001/03 Drafting Criteria for Standards and Control Documents***

- **NR/L2/CSG/STP001/04 Managing Variations to Network Rail Standards and Control Documents and Railway Group Standards**

- **NR/L2/CSG/STP001/05 Producing Bowties and Using Them to Support the Management of Standards and Control Documents**

5.1.33 Each NR standard and control document has an owner, usually the relevant Head of [Asset, Function], who is responsible for the development of the implementation plan for that standard and/or control document throughout NR, including the setting of compliance criteria. The implementation plan also identifies the relevant functions and roles responsible for implementing the requirements of the standard and/or control document within their own areas of responsibility.

Types of NR standards and controls

5.1.34 Types of NR standards and control documents are:

- Level 1

- Level 2

- Level 3

- Other

5.1.35 **Level 1 NR standards and control documents** specify objectives, goals, strategies and policy requirements. These describe how NR will consistently meet its business and regulatory requirements. They provide the framework for assurance systems and controls specified at Level 2.

NOTE: Level 1 standards and control documents include policies e.g. Asset Policies and the NR Drugs and Alcohol Policy.

5.1.36 **Level 2 NR standards and control documents** specify what is to be done or what criteria designs and products have to meet. They specify mandatory business processes, assurance systems and controls. They provide the minimum requirements against which level 3 processes can deliver.

NOTE: Level 2 standards and control documents include specifications and business processes.

5.1.37 **Level 3 NR standards and control documents** specify how tasks are to be carried out. They detail mandatory tasks to be followed in order to deliver requirements specified in level 2.

5.1.38 **The NR standards and control document** framework includes a range of other documents that support level 1, 2 and 3 standards and control documents. These include for example, guidance documents which may be used to provide guidance on the interpretation of NR standards and controls and where appropriate may give recommendations and identify potential implications of accepting them.

NOTE: Other documents in the standards and control document framework include guidance notes and forms.

5.1.39 Manuals are standards and control documents that are organised into a series of modules with an index. Each module contains content on a subject matter that contributes to the overall scope of the manual. Manuals may contain content from

different types of document in the standards and controls framework and are given the classification that best reflects their content.

5.1.40   The benefits of producing manuals include:

- Directing readers to the modules relevant to their roles,

- updating modules independently of other modules in the manual, and

- building manuals over time by publishing new modules

5.1.41   To help readers of standards and controls to quickly identify which sections are mandatory and which are guidance, the text within standards and controls documents is colour coded. With the exception of guidance information (Green), all NR standards and controls requirements are mandatory and are monitored for compliance on NR's non-compliance database.

User information

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

Red requirements – *no variations permitted*

- Red requirements are to be complied with and achieved at all times.

- Red requirements are presented in a red box.

- Red requirements are monitored for compliance.

- Non-compliances will be investigated and corrective actions enforced.

Amber requirements – *variations permitted subject to approved risk analysis and mitigation*

- Amber requirements are to be complied with unless an approved variation is in place.

- Amber requirements are presented with an amber sidebar.

- Amber requirements are monitored for compliance.

- Variations can only be approved through the national non-compliance process.

- Non-approved variations will be investigated and corrective actions enforced.

Green guidance – *to be used unless alternative solutions are followed*

- Guidance should be followed unless an alternative solution produces a better result.

- Guidance is presented with a dotted green sidebar.

- Guidance is not monitored for compliance.

- Alternative solutions should be documented to demonstrate effective control.

NR standards development

5.1.42   The BCR Standards & Controls Manager manages the overall NR organisation standards programme including the process of standards and controls development, publication, change control and the administration of non-compliance with standards and controls. Functional Heads manage and support the standards and controls programme in their area of responsibility to enable those standards and controls that are applicable to their function to be implemented and briefed, and any non-compliances to be recorded and managed appropriately. The issuing of new and amended NR standards and controls is supported by a briefing process designed to alert those affected by any changes.

NR standards and controls are created, amended or withdrawn by a programmed process.

Programmed Change Process

5.1.43   The Company Standards and Controls Group (CSCG) is the Network Rail approved forum that oversees the Network Rail standardisation process as described in *NR/L2/CSG/STP001*. The CSCG has been delegated the authority to perform its work on behalf of the Network Rail Executive Committee.

5.1.44   Standards are normally categorised by the asset-type from which is derived the Standards and Controls Steering Group and standard owner (for the majority of standards and controls, this will be the Head of Discipline). The Standards and Controls Steering Groups comprise the standard owner, representatives from other functions, and the BCR Standards & Controls Manager, or representative.

5.1.45   These groups determine the need for standards creation, amendment or withdrawal in response to changes in legislation, *RGSs*, NR policy, or changes driven by technical innovations. All changes are undertaken to a defined remit that includes the associated risks, costs, resources and broader implications associated with implementing change.

5.1.46   Once the remit has been accepted, the appointed Working Group Leader/Technical Lead facilitates the production of a working draft that is circulated to affected parties for their review and comment. The Working Group Leader/Technical Lead is supported by a specific working group who, in addition to reviewing the comments from affected parties, confirms the compliance requirements for the standard or control, produces the implementation programme and supporting briefing information and finalises the standard or control.

5.1.47   Following authorisation and prior to publication, each standard or control is endorsed as appropriate, authorised by the relevant Standards and Controls Steering Group/standard owner and accepted for issue by the BCR Standards & Controls Manager. It is then published on the Standards and Controls Management intranet site and in the standards and controls catalogue for external subscribers to NR standards and controls.

Emergency changes to standards and control documents

5.1.48   Emergency changes can be made to add to or modify, existing content in standards and control documents outside the quarterly publications cycle. Emergency changes are attached to the standard or control document they affect. The front page of the affected standard or control document is marked to highlight that an emergency change has been attached to the document.

5.1.49   Emergency changes are used where new control measures need to be implemented through a standard or control document to control an urgent:

- Safety risk, and/or

- an NR asset or equipment risk which has the potential to cause disruption to the infrastructure or its operations

5.1.50   LOI are signed off by the relevant Head of Discipline.

5.1.51   This process excludes:

- The communication of urgent operating advice (see NR Standard *NR/L2/OPS/035 Dissemination of Urgent Operating Advice*)

- Urgent advice on defects in equipment on RMVP (see Railway Industry Standard *RIS-8250-RST Reporting High Risk Defects*)

- The management of safety related failure of signalling and operational telecommunications systems (see Railway Industry Standard *RIS-0707-CCS Rail Industry Standard for the Management of Safety Related Control, Command and Signalling System Failures*)

- Shortcutting the standards and controls Programmed Change Process

Approved variations

5.1.52   In the context of NR standards and control documents and *RGSs*, a variation is defined as a departure or alternative approach from the originally specified requirement.

5.1.53   On occasions, parts of NR might need to use an alternative approach to the requirements in NR standards and control documents or *RGSs*. The respective Heads of Disciplines will also determine and identify which *Rail Industry Standards (RISs)* are mandated for their disciplines. Variations to RISs are managed in the same way as variations to NR Standards and control documents and RGSs.

5.1.54   There are three categories of variance that can be applied for:

5.1.55   **Temporary variation** – A temporary variation authorises a defined part of NR not to comply with all or part of a standard or control for a pre-determined period of time. The line manager for that part of NR is required to develop an action plan for the achievement of full compliance and to monitor progress against this. The action plan includes any interim measures to identify and control any risks that may arise pending compliance. If the action plan is expected to deliver compliance within 14 days of the date when variance was first required, a formal application for variation authority is not required. However, a record of this action plan is required to be kept on Tracker.

5.1.56   **Variation pending change to standards and controls** – An agreement made by the NR standard and controls owner that entitles a defined part of NR not to comply with all or part of a standard or control. This may apply if the standard or control is considered inappropriate or out of date and is being challenged. The line manager for that part of NR develops alternative arrangements for the risks normally controlled by the relevant standard or control and these are recorded on the National Variations Database (Tracker).

5.1.57   **Derogation** – Authorises a defined part of NR to be temporarily non-compliant with all or part of a standard or control in a particular respect. The line manager for that part of NR applies for a variation authority using Tracker, giving full details of the alternative approach being adopted.

5.1.58   Each application for approved variation is reviewed by the relevant NR standard and control owner or delegated authority. All applications for variations to *RGSs* are reviewed by the relevant *RGS* owner and are submitted to RSSB for approval. The agreement/rejection of the relevant NR standard and control owner or delegated authority (RSSB for *RGSs*) is recorded on Tracker and the applicant is duly advised.

5.2   Implementation and Briefing

5.2.1   The process for the management of NR standards and controls is set out in NR Standard *NR/L2/CSG/STP001/02 Managing Standard and Control Document Change Projects* which describes how the implementation of standards and controls is managed.

5.2.2   Implementation is undertaken in accordance with the agreed implementation programme and includes all briefing, training and contract requirements necessary for achieving compliance. Briefing consists of awareness briefing and technical briefing.

5.2.3   Awareness briefing provides an appreciation and basic understanding of new or amended standards and letters of instruction. Standards and Controls Management collate and publish all awareness briefing notes in the standards and controls briefing report, prior to the publication of the associated standards and controls. The briefing report is then issued to all functions for cascade briefing by line managers.

5.2.4   Technical briefing provides all relevant individuals with a detailed understanding of particular responsibilities. The NR standard and controls owner manages the briefing process and keeps appropriate technical briefing records and the Working Group arrange for checks to be made that those requiring technical briefing have been briefed by the stated compliance date.

5.3   Lessons Learnt

5.3.1   Following implementation and briefing and as part of the formal close out of each standard project, each Working Group Leader/Technical Lead is required to complete a project close out report (as part of the project remit) and submit it to the Standards and Controls Steering Group for approval.

5.3.2   In terms of lessons learnt, this may include:

- Any information that may be helpful to the Standards Steering Group or Working Group Leader/Technical Lead in the future.

- Aspects of the project that went well, and/or issues encountered during the project.

- Relevant feedback from briefings or from applications for approved non-compliance.

5.4   Document Control and Records Management

5.4.1   NR Standard *NR/CS/INF/02203 Controlled Publications - Issue and Receipt* mandates the minimum requirements for the processes for managing the issue and control of documents that require receipt in a controlled form. NR Standard *NR/L2/INF/02204 Controlled Publications – Process and Accountabilities* defines the requirements for maintaining a receipting mechanism in order to demonstrate that recipients have been issued with required information and that recipients are advised of updates to that information. Where deemed necessary by the standard owner, certain technical standards also define the requirements for control of the issue and receipt of relevant technical documentation. Employees are advised when printing a document which is maintained in electronic format that once printed the document is deemed to be uncontrolled.

5.4.2   NR Standard **NR/L3/INF/02225 Records Management** specifies the minimum
         required process for managing NR corporate records. It applies to all records
         created received and managed by NR and the processes, tools and resources
         employed to manage them. NR Standard **NR/L3/INF/02226 Corporate Records
         Retention Schedule** specifies authorised retention periods for NR's corporate
         records.

5.4.3   It covers all records created, received and managed by NR and the processes,
         tools and resources used to manage those records, and enables NR:

   - To retain records for no longer than necessary

   - Implement a consistent approach across NR

   - Promote the prompt and auditable disposal of records when they are no
     longer required; to be compliant with relevant legislation and regulation
     including the Data Protection Act

   - Protect NR's rights and interests and those of its employees, customers,
     suppliers and the general public affected by its operations

5.4.4   NR Standard NR/L3/INF/02231 Disposal of records specifies how NR shall
         dispose of records that are time expired according to the Corporate Records
         Retention Schedule. It relates to both the disposal of records in hard copy and
         electronic formats and specifies processes relating to disposal timescales,
         disposal methods, ownership of records, and the disposal of designated items.

Transition to the Business Critical Rules Framework

5.4.5   NR is transitioning existing standards to the **Standards and Controls document
         framework** as described on page 124. The transition phase will continue until all
         documents in the NR standards portfolio have been reviewed and their contents
         have been safely disposed of.

5.4.6   Until transition to the **Standards and Controls document framework** is
         completed, compliance with the requirements of both Railway Group/NR
         standards and **Standards and Controls document framework** products is
         required.

6   Managing Interfaces

6.1   Transport Operators

6.1.1   **ROGS** refer to three types of Transport Operators:

   - Infrastructure Manager

   - Infrastructure Manager (Station Operator)

   - Transport Undertaking (Train Operator)

6.1.2   **ROGS** also places duties on Entities in Charge of Maintenance (ECMs).

Infrastructure Manager

6.1.3   NR is the Infrastructure Manager for the national rail network. The Infrastructure
         Manager is responsible for developing, maintaining and using the infrastructure,
         including permitting its use for the operation of trains.

NR Managed Infrastructure

6.1.4   NRMI is the infrastructure that falls within the geographic boundaries of NR's operational railway, including the permanent way and land within the lineside fence, and plant used for signalling or exclusively for supplying electricity for traction purposes to NR's operational railway. It does not include stations (whether or not these are managed by NR), nor does it include depots, yards or sidings owned by, or leased to, other parties. However, it does include permanent way at stations and plant within these locations used for signalling NR's operational railway, or exclusively for supplying electricity for operational purposes to the operational railway.

6.1.5   Structures such as tunnels, bridges, viaducts, underpasses, etc., are deemed to form part of NRMI only in relation to their potential to transfer risk onto, or from, the operational railway.

6.1.6   Where NR's staff or contractors are not on NRMI, but are performing work on behalf of NR or NR projects, they are still required to comply with the NR HSMS, where the system requirements may be generally applied to such activities. This is in addition to any other rules, regulations and arrangements specifically required by NR or its agents for activities undertaken on non-NRMI.

Infrastructure Manager (Station Operator)

6.1.7   Under *ROGS*, stations are classified as railway infrastructure and those who operate stations are classified as Infrastructure Managers. For clarity, these are referred to in the HSMS as Station Operators.

6.1.8   Station Operators are responsible for managing and operating stations. NR is Station Operator (Infrastructure Manager) for its Managed Stations. There are also approximately a further 2,500 stations, most of which are managed by train operating companies.

Transport Undertaking

6.1.9   Transport Undertaking is the legal term under *ROGS* for those organisations that operate trains or RMVP (excluding those who operate RMVP wholly within engineering possessions). For clarity, these are referred to in the HSMS as Train Operators.

Duty of Co-operation

6.1.10   A significant proportion of risk occurs at the interface between the infrastructure manager and the operators of trains and/or stations (i.e. other Transport Operators). The control of this aspect of risk depends upon co-operation between these dutyholders.

6.1.11   *ROGS Regulation 22* imposes a Duty of Co-operation on all transport operators. The Rail Safety & Standards Board (RSSB) has developed *A guide to ROGS requirements for duty of cooperation between transport operators*. The arrangements for the practical implementation of this, including those to meet the requirements of RGS *GE/RT8270 Assessment of Compatibility of Vehicles* and Infrastructure, are set out in NR's HSMS and in the safety management systems of other transport operators.

6.1.12   Co-operation takes the form of the application of agreed:

- Rules governing access (i.e. the Network Code and the Railway Operational Code)

- Access and lease conditions

- Liaison and communications arrangements

- Arrangements for escalating and agreeing resolution of safety issues

6.1.13   NR has arrangements in place for:

- Managing access to the network, whereby access is only granted to those Transport Operators who have a current safety certificate/authorisation as appropriate

- Making appropriate representation to the ORR in respect of applications for safety certification/authorisation

- Co-operating fully with Transport Operators to enable them to discharge their own health and safety duties

- Conducting regular formal liaison meetings with Transport Operators to discuss the safety performance of both the Transport Operator and NR, and to share good practice and ideas for improvement

    Note: Some Routes, such as Wessex, have a Route Safety Group, the primary purpose of which is to help dutyholders understand, maintain and improve health and safety on the Route by assisting them to efficiently and effectively discharge their legal duty to co-operate. The group seeks to understand and review the totality of the system risk profile on the Route, and facilitate effective assurance from dutyholders across the Route such that all aspects of system risk on the Route are addressed.

6.1.14   NR also has reciprocal arrangements with train operators to advise of any:

- Proposed changes which might affect the safe operation or the safety management system of other parties, including consulting with the train operating companies for stations that they manage, and where NR is not the dutyholder, in respect of NR-led design, construction and bringing into use of alterations of alterations to such stations

- Matters which other parties are required to know to discharge their statutory obligations including meeting the requirements of their own safety management system

- Any aspects of its health and safety arrangements or performance which could affect the safety of other parties overall operations

Network Code and Railway Operational Code

6.1.15   The **Network Code** provides a common set of rules that apply to all parties who have access rights to the network. Its purpose is to:

- Regulate change (including among others, change to the working timetable, to rail vehicles and to the network)

- Establish a performance monitoring system

- Establish procedures relating to environmental damage

- Establish procedures in the event of operational disruption

6.1.16   The purpose of the NR Standard **NR/L2/OCS/042 Railway Operational Code Implementation, Variation and Review Process** is to sustain the operation of train services on the network and restore operation of the network following disruption. NR Standard **NR/L2/OCS/042 Railway Operational Code Implementation, Variation and Review Process** describes how the ROC is to be implemented, how reviews will be conducted, and the arrangements and processes for dealing with variations.

6.1.17   NR has established track access agreements with each operator authorised to operate trains on the network. Depot and station lease agreements are also in place with each operator for relevant operational premises.

Managing Access

6.1.18   Train Planning Managers have arrangements for confirming that every train which operates on the network has an identified operator who holds current safety certification.

6.1.19   NR will refuse access to its infrastructure where the operator does not hold current safety certification. NR will also refuse access for any individual train or type of individual vehicle that is identified as unsafe, whether this is due to a defect on the train or vehicle, or because of how it is loaded or operated.

Safety Certification/Authorisation Applications – NR Representations

6.1.20   Transport Operators are required to make available to affected parties their application for safety certification/authorisation as part of the consultation process. The CHSQO manages a process for providing all affected parties with NR's application.

6.1.21   NR also undertakes appropriate scrutiny of applications for safety certification/authorisation from other Transport Operators. Such scrutiny involves appropriate representation from the Heads of Disciplines and from within the Routes, Infrastructure Projects, the STE function and the Digital Railway function. At the conclusion of this, the CHSQO makes representation to the ORR detailing any comments that NR has with each application.

Liaison

6.1.22   Joint NR and TOC Route Supervisory Boards are being put in place. Chaired independently, these do not have decision making authority. However, they may make recommendations which the relevant RMD or TOC MD can then action within their existing accountabilities and delegated authority levels.

6.1.23   Liaison between organisations for operational matters is on a daily basis and is conducted through Route Control Centres. Further liaison occurs between signallers and train crew in accordance with the provisions of the Rule Book.

6.1.24   All routine communications with all operators on the network (e.g. weekly and periodical operating notices, special notices etc.) are communicated through an agreed channel.

6.1.25   NR meets with train operators at various levels in order to communicate the safety needs of both organisations and provide visibility of how each is managing those risks under their control that affect the other.

6.1.26   Liaison meetings are held with each operator at Director level as well as locally to address local issues. At these meetings safety performance reports and significant audit findings relating to interface safety risk are shared and reviewed. Joint meetings are held with all operators on a Route where necessary. The frequency of meetings varies according to the level of interface. Meetings at Director-level are typically held every quarter, but this can be varied if necessary.

6.1.27   All Routes have an OPSRAM or equivalent Group that is held to a defined remit in accordance with NR Standard **NR/L2/OCS/041 The Operations Manual** procedure and procedure **NR/L3/OCS/041/5-03 OPSRAM Group Core Remit** . Chaired by the relevant Route Managing Director/ScotRail Alliance Managing Director (Scotland only), it is the forum where NR and train operators jointly review SPAD incidents and other operational safety interface issues, develop initiatives to further reduce incidents and share good operational practice and advice. It is remitted to:

- Understand and address the common risks on the Route

- Recommend strategy and co-ordinate activities to address safety risk

- Monitor trends and establish the Joint Safety Improvement Plan (JSIP) for the Route and its stakeholders

- Put in place the right instruments/mechanisms to address safety risk i.e. groups, projects and day job activities

6.1.28   The Station Manager/Area Manager Alliance (Wessex only) for each of NR's Managed Stations meets with each relevant train operators representative every month, although operational matters are handled on a daily basis. Meetings are used to discuss issues such as evacuation procedures, train dispatch arrangements and accident trends.

6.1.29   Community Safety Partnership Groups (CSPGs) are held at least every six months in accordance with NR Standard **NR/L2/OCS/050 Route Crime Risk Management**. Based on geographical areas that cover the entire network and chaired by a Route Managing Director/ScotRail Alliance Managing Director (Scotland only), or Head of Operations Delivery (or nominated deputy), they include senior representation from Operators, the BTP and other agencies by invitation. CSPGs facilitate the development and delivery of and co-ordinate local level action plans aimed at reducing the risks and costs posed by crime, disorder and other forms of inappropriate public behaviour – including trespass, vandalism, graffiti, assaults, fatalities and level crossing misuse.

6.1.30   Where infrastructure protection equipment such as that for hot axle box detection, wheel impact load detection or pantograph monitoring are in place, relevant NR Standards define the requirements for providing the associated on-train equipment condition information to relevant train operators.

6.1.31   NR co-operates with train operators in the development of **RGSs** (in accordance with RSSBs standards management arrangements) where such standards are required to manage safety interface risks.

6.1.32   NR has reciprocal arrangements with train operators to allow access to monitor safety performance where both organisations have a legitimate interest. This includes safety critical activities, such as monitoring cab to shore communications (Cab Secure Radio – CSR, or - Global System for Mobile Communications - Railway - GSM-R) or undertaking speed checks.

6.1.33   NR's change control arrangements provide the mechanism by which each transport operator co-operates in establishing the compatibility of infrastructure and rolling stock where changes to either the infrastructure or rolling stock is proposed, and in compliance with RGS *GE/RT8270* **Assessment of Compatibility of Vehicles and Infrastructure** (see HSMS 6.6.23 NRAP and Assessment of Compatibility).

6.1.34   NR Standard *NR/L2/OCS/070 Major Infrastructure Changes - The Provision of Staff Briefing Material to Train Operators* defines the process for the supply of suitable and sufficient briefing materials to train operators to enable a safe transition following significant infrastructure changes.

6.1.35   NR complies with any reasonable request made by train operators that assures health and safety on the rail network. NR allows the employees of train operators to undertake inspections and investigations as required in order to meet their legal obligations under Safety Certification.

6.1.36   In the event of dispute or disagreement between NR and train operator(s), managers at an appropriate level attempt to resolve the matter in a way which maintains safe operation for all parties involved. If necessary, independent advice obtained in order to satisfactorily resolve such issues, or issues can be escalated, in accordance with NR's escalation process.

Escalation Process

6.1.37   NR has a policy whereby it brings to the attention of any transport operator repeated non-compliance with the operators own safety management system, or health and safety-performance which is such that it may adversely affect the performance of NR's own health and safety duties.

6.1.38   Such systematic and repeated non-compliance may be identified by NR's monitoring arrangements and may be supplemented by other information such as incident reports, accident investigations, or assurance information provided by the operator.

6.1.39   The policy provides for steadily escalating the issues as shown below and in accordance with A guide to ROGS requirements for duty of co-operation between transport operators published by RSSB:

- NR routinely shares safety performance information with other transport operators and mutual safety risk performance is reviewed at regular interface meetings that are held locally, at route and national levels. These meetings are used to resolve safety concerns and all agreed actions and timescales are minuted

- Where specific safety concerns are not resolved at such meetings the Managing Director, England & Wales Network Operations/ScotRail Alliance Managing Director (Scotland only), will meet the Managing Director of the transport operator concerned and raise the specific issues concerned

- If satisfactory progress is not made then the matter will be formally raised by representatives of the NR Board with the Board of the operator concerned at a meeting. Failure to reach adequate agreement shall trigger the formal escalation letter

- Safety concerns that are not resolved at such meetings are escalated between NR and the relevant transport operator through the preparation and issue of a formal request letter from the General Counsel, Legal Services,

prepared in consultation with the Managing Director, England & Wales Network Operations and the Group STE Director. The letter is submitted to the organisation secretary of the responsible organisation. The recipient of an escalation request letter is required to respond to NR within the timescale specified in the formal letter

- If progress is still unsatisfactory, then the General Counsel, Legal Services will, in consultation with the Managing Director, England & Wales Network Operations/ScotRail Alliance Managing Director (Scotland only), and the Group STE Director, formally escalate the safety concerns to the ORR for investigation and formal action and inform both ORR and the operator of NR's proposed action

- Where NR is of the belief that urgent action is required because a transport operator is performing or failing to conform to its safety management system, in a manner that is likely to increase the risk of serious personal injury to any person, NR will consider formally suspending some or all of the transport operators access to NR's infrastructure from a given date. The operator would be advised in writing accordingly

- Re-instatement of the terminated activities will only be permitted when NR is satisfied that the operator has put in place robust arrangements for assuring full compliance with that operators safety management system. NR will inform the ORR of the circumstances and advise subsequently of progress by the operator in the delivery of the agreed actions

6.2   Suppliers

6.2.1   NR's expenditure with suppliers is managed through NR Standard *NR/L1/CPR/102 Sourcing And Supplier Governance Policy*. The purpose of this policy is to specify the high level sourcing and supplier governance structure and processes within NR.

6.2.2   The NR Group General Council has overall responsibility for setting policy and implementing governance arrangements for all expenditure with suppliers and these are available on Connect. The MD, Infrastructure Projects has accountability for project renewals and enhancements expenditure and the Route Services Director has accountability for all other expenditure. NR's expenditure with suppliers is managed through a standard sourcing process that provides a consistent methodology for procurement in five consecutive stages:

- **Demands & Requirements** – The detailed understanding of its current and future requirements and the identification of potential sourcing opportunities

- **Strategy** – Defining the best way to commercially and contractually engage with suppliers to meet its business needs

- **Implementation** – The stages and activities to be considered when engaging with the supply market, including selecting suppliers, awarding contracts, and transitioning to the implementation of an agreement

- **Management and Control** - The management of the suppliers performance, the supplier relationship, and ensuring that the benefits of the contract are actually delivered and provide measurable value

- **Exit** – The confirmation that contractual obligations have been met by both NR and the supplier, and the management of the closure of a contractual relationship
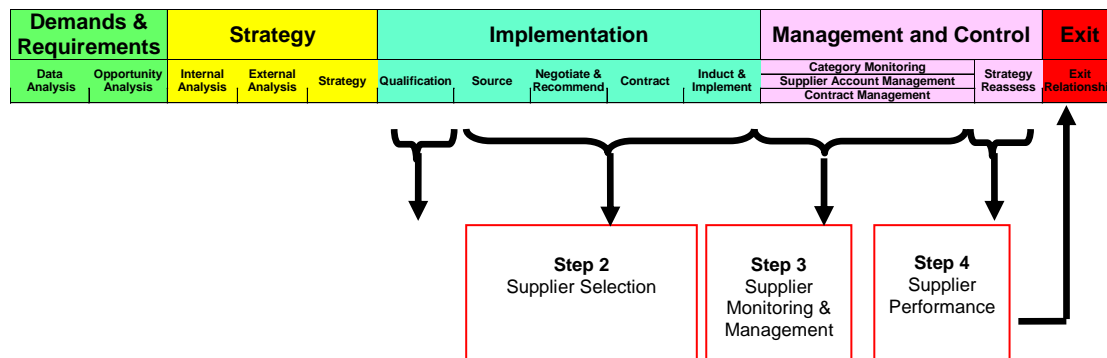
6.2.3   This is underpinned by its arrangements for providing assurance that those suppliers that NR appoints are suitably competent and adequately resourced. NR Standard ***NR/L1/CPR/103 Supplier Assurance Framework*** states NR's supplier assurance policy, and describes the framework by which NR obtains assurance that all reasonably practical steps have been taken to appoint suitably competent and adequately resourced suppliers:

- Supplier Qualification and Licensing

- Supplier Selection

- Supplier Monitoring and Management

- Supplier Performance

Supplier Qualification and Licensing

6.2.4   The arrangements for the qualification and licensing of suppliers are described in the NR Standards ***NR/L2/CPR/201 Supplier Qualification and NR/L2/INI/CP0070 Principal Contractor Licensing Scheme***. The purpose of this document is to specify the arrangements for the qualification activity within the NR Strategic Sourcing and Supplier Assurance Framework. It describes the qualification activities that show assurance suppliers have met the minimum pre-determined qualification criteria to supply a specific product category, and that the requirements of the Utilities Contracts Regulations are met. These standards include the arrangements for the:

- ***RISQS*** Supplier Qualification Scheme

- Licensing of Principal Contractors

- Development of contract specific bespoke qualification assessments (used in circumstances where general arrangements are not sufficient or appropriate)

Supplier Qualification

6.2.5   As part of NR's sourcing strategy and before engaging suppliers to provide NR with required goods and services, it is necessary to confirm that potential suppliers have the requisite qualification. This is determined by the assessment of supplier organisations against predetermined qualification criteria. All potential suppliers require to be qualified, normally via its Supplier Qualification scheme, known as ***RISQS*** or, on occasion, as part of a separate call for competition and qualification exercise.

RISQS

6.2.6   ***Railway Industry Supplier Qualification Scheme (RISQS)*** embraces rails qualification arrangements previously known as Link-up. RISQS is industry-owned, and sponsored by a board of representatives from across the rail industry. This reports into RSSB, which provides a range of services to support operational delivery of the scheme.

6.2.7   The process of qualification initially requires the completion, by all potential suppliers, of an on-line questionnaire. This collects commercial, operational and technical information regarding each supplier including financial, quality, health and safety, capability, environmental and insurance details. Subsequent qualification stages will depend on the products or services that are to be supplied and involve an appropriate assessment of suppliers against pre-determined and risk-prioritised criteria in the following hierarchical stages:

Registration

6.2.8   These product groups are designed for suppliers of non-critical goods and services, typically corporate goods and services, which are deemed not to be business-critical or import risk to a RISQS subscriber.

Scored Evaluation

6.2.9   These are designed for suppliers of business critical goods and services that have the potential to import a risk to a ***RISQS*** subscriber. Additional information on these suppliers will be collated from their questionnaire which will be then be evaluated and scored.

Auditable

6.2.10   These product groups are designed for suppliers of safety-critical products and services. In addition to completion of the questionnaire, the capabilities of each supplier will be assessed annually by ***RISQS*** via an audit against the requirements of NR Standard ***NR/L2/CPR/302 Supplier Qualification – Core Requirements*** and further, bespoke technical audit protocols derived by the specific product groups selected by the supplier. Where a supplier is awarded a full NR Licence under NR Standard ***NR/L2/INI/CP0070 Principal Contractor Licensing Scheme***, the annual assessment is undertaken by the Assurance (Licensing) team.

Call for competition

6.2.11   There may be circumstances where the ***RISQS*** route for supplier selection is inappropriate – such as insufficient numbers of suitably qualified suppliers in ***RISQS*** (e.g. suppliers with new or novel products). In such cases qualification may be realised through a call for competition through the Official Journal of the European Union (OJEU).

6.2.12   NR Standard ***NR/L2/CPR/201 Supplier Qualification*** details the steps involved in confirming qualification, whether it is via ***RISQS*** or the call for competition option.

Supplier Licensing

6.2.13   The Corporate Investigation & Assurance Manager has overall responsibility for the application of the supplier licensing process. NR Standard ***NR/L2/INI/CP0070 Principal Contractor Licensing Scheme*** details the licensing process from

application to award and maintaining the validity of a Licence. The application of sanctions for fundamental or persistent failure to comply with Licence Requirements and Conditions is also included in this standard.

6.2.14   The Principal Contractor assurance framework is gained from rail industry audit schemes, internationally recognised schemes audited by accredited organisations and NR Principal Contract Licensing (PCL) team audits.

6.2.15   Prior to applying for a PC licence the following pre-requisite requirements must be in place:

- *Industry Minimum Requirements (IMR)* which is the validation via audit of suppliers declared organisation and arrangements to meet predetermined qualification requirements including the capability to discharge duties identified in the *CDM Regulations*. It also includes other legislative and rail industry requirements. This is a rail industry audit and not specific to NR

- *Sentinel Scheme Rules and Railway Interface Planning* (for trackside works) as well as the relevant product codes. These management systems are independently audited by a Third Party

6.2.16   The Corporate Investigation & Assurance Manager has overall responsibility for the application of the supplier licensing process. Following confirmation that there are relevant tender opportunities requiring a NR PC Licence the supplier provides documented evidence of compliance to NR Standard *NR/L2/INI/CP0070 Principal Contractor Licensing Scheme*:

- This includes evidence of the organisation's managements system holding ISO9001, ISO14001 and OHSAS18001 audited by an accredited organisation

6.2.17   NR's PCL Assurance team review the submission to confirm that the suppliers arrangements comply with NR Standard *NR/L2/INI/CP0070 Principal Contractor Licensing Scheme*. These are additional requirements in order to discharge PC Duties on NR's Infrastructure.

6.2.18   On successful contract award, the PCL Assurance team verify by way of a site audit the compliance with, and adequacy of, the Health & Safety, Quality, and Environmental Management systems, to enable an assessment of the supplier's ability to meet the requirements for certification to Full Principal Contractor Licence status.

6.2.19   The standard provides an ongoing assurance regime that mandates suppliers maintain all requirements of the Standard including the pre-requisites. This is verified by the NR PCL Assurance Team through review of evidence contained in an annual assurance file.

6.2.20   The NR PCL Team also undertake*s* physical site audits to assess the practical application of the management systems. The frequency of these site audits is a minimum annually, or more frequent should the level of assurance gained on site audit be minimal or there are concerns raised to the PCL team from other channels within NR e.g. Route or Infrastructure Projects teams.

6.2.21   Should a supplier fail to comply with the scheme rules or there are concerns regarding their performance, a consequence matrix has been developed, and contained within the standard, which documents the consequences following

breaches, which is managed by the NR PCL Team in conjunction with the supplier and other areas of NR. This process follows the NR fair culture principals and seeks to address and rectify through engagement and collaboration any shortfalls with the PC, but can ultimately result in revocation of licences.

Supplier Selection

6.2.22   Sourcing teams are responsible for all of the stages and activities associated with selecting suppliers, awarding contracts and the transition to contract implementation. These selection activities also have assurance considerations in place which build on those within the preceding supplier qualification and licensing step of the supplier assurance framework.

Supplier Monitoring and Management

6.2.23   Persons who are required to administer a contract are identified as an Employers Representative. Such persons will have been notified to the supplier as having the authority, on behalf of NR, to issue instructions to the supplier under the terms of a relevant agreement. An Employers Representative is required to implement an appropriate strategy for the monitoring and management of every contract that they administer. This strategy includes the arrangements for obtaining assurance that specific requirements are met and, where deficiencies are found, improvement actions have been implemented.

6.2.24   An annual risk review of Licence-holders is also undertaken by the Assurance (Licensing) team. This identifies from a number of sources, the potential risk a licensed supplier presents to the business.

Supplier Performance

6.2.25   At the end of every contract an assessment of the suppliers performance against the requirements of the contract are required to be recorded by the Employers Representative. Where NR has multiple contractual relationships with a supplier, the Contracts and Procurement Director (Route Services) or Commercial and Development Director (Infrastructure Projects) may apply a Strategic Supplier Account Management process. In these circumstances performance information will be consolidated from across multiple contracts and fed in to the Supplier Account Management process.

On-Track Plant Operations Scheme Rules (POS Rules)

6.2.26   The purpose of the *POS Rules* is to define the compulsory mechanisms and minimum means of compliance for any organisation undertaking the provision and operation of On-Track Plant (OTP) on NRMI. The *POS Rules* describe the means of achieving and maintaining approval for OTP operations providers, including Principal Contractors where they undertake OTP operations.

6.2.27   The scope of the *POS Rules* extends to all organisations carrying out OTP operations on NRMI. The *POS Rules* extend to NR and all parties involved in the process. The *POS Rules* are not designed to detail the following requirements however these will be prerequisites to compliance with the *POS Rules*:

- The safe use of plant for infrastructure work, as set out in *NR/PLANT/0200 Infrastructure Plant Manual*

- Product Introduction and Change as set out in **NR/L2/RSE/100/05 Product acceptance and change to Network Rail operational infrastructure**

- Engineering acceptance as set out in **RIS-1530-PLT Engineering Acceptance of Possession-only Rail Vehicles and Associated Equipment**

- Specific rules controlled through the **Sentinel** Scheme.

- The provision and use of non-rail mounted general construction plant and equipment used on NRMI

6.2.28   Arrangements for the operation of On-Track Machines (OTM) and/or machines certified against the Group Standard: **GM/RT2400 Engineering Design of On-track Machines in Running Mode**, whether operating inside or outside of a possession are out of scope of the **POS Rules**. The NR POS Review Panel will act as the owner and administrator of the **POS Rules** to ensure fair and compliant application both when NR is undertaking OTP operations and for its contractors.

Safety Critical Products and Services

6.2.29   These processes augment strategic sourcing, providing additional assurance that safety critical suppliers products are fit for purpose and their services are delivered by competent people.

Product Introduction

6.2.30   The technology introduction process is designed to establish whether new or modified products are technically sound, fit for purpose and safe for use in the intended application. These arrangements are described in NR Standard **NR/L2/RSE/100/05 Product acceptance and change to Network Rail operational infrastructure** which defines the requirement for anyone specifying or purchasing safety critical engineering products, equipment, systems and services to confirm manufacturers or suppliers of such items are qualified as having the relevant competence to supply the rail industry. NR specialists evaluate product features against predetermined criteria to assess whether or not a product is safe and fit-for-purpose. The organisation and management system of product suppliers are also appropriately vetted as part of Supplier Qualification.

6.3   Transport for London (TfL)

6.3.1   TfL delivers its services through a number of subsidiaries, including London Underground Ltd (LUL), and Rail for London (RfL), Rail for London Infrastructure Ltd (RFLI), and concessions, including London Overground Ltd (LOL), MTR Corporation (Crossrail) Ltd (MTRC).

6.3.2   LUL operates over NRMI on the Bakerloo and District lines for a distance of approximately 17 kilometres. NR is responsible for maintaining 10.81km of the Bakerloo line and 3.69 km of the District line, in accordance with relevant Railways Group Standards (RGS) and NR Standards (NRS). NR also provides the signalling control for the Bakerloo line north of Queens Park and the District Line south of Putney Bridge in accordance with relevant RGS and NRS. On these sections of track, NR and LUL have shared responsibility for safety risk management. For operation over this section, LUL has arrangements to comply with the relevant parts of NR's safety arrangements. LUL is also committed to complying with any reasonable request NR may make regarding any aspect of activities within the scope of NR's Safety Authorisation.

6.3.3   Rail for London Ltd (RfL) manages infrastructure between the boundaries or interfaces with NR at Dalston Junction, Old Kent Road Junction, New Cross and New Cross Gate.

6.3.4   Rail for London (Infrastructure) Ltd operate and maintain the Infrastructure through the Crossrail Elizabeth Line Central Operating Section (COS) with boundaries / interfaces with Network Rail Infrastructure Ltd at Westbourne Park (Western Route), Pudding Mill Lane (Anglia Route) and Abbey Wood (South East Route).

6.3.5   MTRC operates Crossrail Elizabeth Line services over NRMI between Reading and Portobello Junction in the west to Abbey Wood Sidings and Abbey Wood in the southeast, and Pudding Mill Lane Junction and Shenfield in the east.

6.3.6   A connection from the Crossrail Elizabeth Line to the North Kent Lines (NKL) exists as a single line from Abbey Wood platform 3 'Bolthole Berth', this connection is not for normal operations and is not provisioned with OHLE.

6.3.7   NR provides electrical traction supplies:

- Between Waterloo and Bank on the Waterloo and City line and between Putney Bridge and Wimbledon on the District line, where LUL is the Infrastructure Manager

- Between Acton Lane Junction and Richmond on the District line and between Queens Park and Harrow and Wealdstone on the Bakerloo line where NR is the Infrastructure Manager

6.3.8   NR supplies electrical power for traction from two feeder stations at the eastern and western ends of the Crossrail Elizabeth Line route. Either of the two supply routes are independently capable of delivering the traction power requirement of the entirety of the Crossrail Elizabeth Line route offering resilience to local power outages:

- At the western end, power for traction is fed into the system at the Westbourne Park Autotransformer Site which is in turn fed from the National Grid bulk supply point at Kensal Green via NR's Kensal Green Autotransformer Feeder Station. The Kensal Green Auto Transformer Feeder Site is a dual managed facility which feeds both NRMI (Great Western Main Line) and RFLI Crossrail Elizabeth Line

- At the eastern end, power for traction is fed into the system at the Pudding Mill Lane Autotransformer Site which is in turn fed from the National Grid bulk supply point at Pudding Mill Lane via NR's Pudding Mill Lane Autotransformer Feeder Station. The Pudding Mill Lane Auto Transformer Feeder Site is a dual managed facility which feeds both NRMI (Great Eastern Main Line) and RFLI Crossrail Elizabeth Line

6.3.9   These traction supplies are provided in accordance with relevant Railways Group Standards and NR Standards to specific contracts between NR, RfL, RFLI and LUL.

6.3.10 Signalling for the Crossrail Elizabeth Line Central Operating Section (COS) is operated from Romford Rail Control Centre within Romford Rail Operating Centre. Outside of the COS, the signalling is operated by NR at Didcot Thames Valley Signalling Centre (TVSC) for the Western Route, Liverpool Street Integrated Electronic Control Centre (IECC) for Anglia Route and Ashford Integrated Electronic Control Centre (IECC) for South East Route.

6.3.11   RfL, its subsidiaries and concessions have arrangements to comply with relevant *RGSs* where they operate over NR infrastructure. The HSE in consultation with appropriate competent individuals within RfL, its subsidiaries and concessions, decides applicability of the RGS to RfL, its subsidiaries and concessions operations and status in terms of direct compliance, or compliance via RfL, its subsidiaries and concessions equivalent standards.

6.3.12   The SRM (see *HSMS* 3.3) includes risks imported to NR's operations through the activities of suppliers, and train and station operating companies, including LUL, LOL and MTRC. However there are some differences in the responsibilities and controls for risk between NR, LUL, LOL and MTRC.

6.3.13   Quantitative assessments have been undertaken to identify specific issues where an additional hazard or a higher hazard likelihood or consequence may arise due to operation of the Bakerloo line and District line services on NRMI. These assessments were carried out by a knowledgeable group of operational and safety specialists from LUL (with support from NR, and train and station operating companies where appropriate). The findings of these assessments are, where applicable, integrated into the *SRM*. Risk reduction measures arising from these assessments are developed in liaison with LUL, LOL and MTRC interfaces, via the respective Route Managing Director, Station Manager/Area Manager Alliance (Wessex only), as appropriate. NR, LUL, LOL and MTRC also attend various specialist topic groups with railway industry bodies, e.g. RSSB, to discuss various risk reduction measures.

6.3.14   Track and station access agreements are in place providing access for RfL/RFLI/LUL to the NRMI. These include provisions for:

- Safe operation

- Compliance with *RGSs* and NR Standards where applicable

- Changes to legislation

- A performance regime with incentives (where applicable)

These are supported by:

- The BR/LT Works Access Agreement 1964 which provides for access to and maintenance of infrastructure at the interface with NRMI to applicable safety and engineering standards

- Site specific engineering arrangements that describe the boundaries between NR and RfL/RFLI/LUL in terms of ownership of property and fixed assets and state the maintenance and safety obligations arising for each asset

6.3.15   NR's Regional Weekly Operating Notices are transmitted electronically by the Routes, for information to key RfL/RFLI personnel, and to LUL, LOL and MTRC operating staff.

6.3.16   The London Underground Control Centre (LUCC), and RFLI's Route Control Centre (RCC) also receive NR alerts on defective equipment.

6.3.17   Local operating arrangements define the arrangements for train signalling and operations on NRMI referred to in HSMS 4.13. With the Route and Station emergency plans they also define the interfaces and arrangements for liaison with LUL, LOL and MTRC for the management of incidents. When incidents occur on NRMI, NR's emergency plan comes into operations and arrangements are in

place through mutual aid agreements, to obtain appropriate support from TfL/RFLI/ LUL, LOL and MTRC. Where an incident occurs on NRMI, TfL/RFLI/ LUL, LOL and MTRC have arrangements in place to comply with relevant **RGSs** and NRS where applicable.

6.4   Other Infrastructure Managers

6.4.1   The Managing Director, England & Wales Network Operations is the primary safety contact with RfL, RFLI, LUL, LOL and MTRC, as well as Heathrow Airport Limited (HAL) for support services including for example contracted infrastructure works by NR to the Heathrow Spur, and the Anglia Route is the lead NR Route for the Crossrail Elizabeth Line.

6.4.2   The relevant Route Managing Director, Station Manager/Area Manager Alliance (Wessex only), for those Managed Stations with an RfL/LUL, LOL and MTRC interchange, liaises with the LUL, LOL and MTRC line managers for the Bakerloo, District and Jubilee Lines etc., North London and East London Lines, and Crossrail Elizabeth Line.

6.4.3   For all other Infrastructure Managers (e.g. Network Rail (High Speed) Ltd, Nexus Tyne & Wear Metro, Stagecoach Sheffield Supertram, Docklands Light Railway, Heathrow Airport Limited etc.) the relevant Route Managing Director/ScotRail Alliance Managing Director (Scotland only), is responsible for leading the management of the interface.

6.5   Other Interfaces

Office of Rail & Road (ORR)

6.5.1   The Group STE Director is the primary health and safety contact with ORR and holds regular liaison meetings to discuss strategic issues of railway safety, including NR's safety performance, safety strategies and policy, and health and safety arrangements.

6.5.2   The Route Managing Director/ScotRail Alliance Managing Director (Scotland only), is the primary safety contact within the Routes for liaison with ORR. Liaison on specific issues (e.g. level crossings, operations standards, etc.) is through nominated line managers. Liaison on local issues is conducted between local line managers within the relevant function and field inspectors.

6.5.3   Liaison arrangements are defined in NR Standards **NR/L3/INV/3001/RIM115 Network Rail and National Safety Authority (ORR) interface and liaison arrangements** and **NR/L3/INV/3001 Reporting and Investigation Manual**.

Rail Safety and Standards Board (RSSB)

6.5.4   The Group STE Director is the primary safety contact and manages the interface with RSSB during preparation of the Railway Strategic Safety Plan. The drafting groups and Standards Committees managed by RSSB, which develop new **RGSs** or changes to existing **RGSs**, also include NR representatives.

6.5.5   RSSB manages the **System Interface Committees (SICs)** and sub-groups of which NR is a member and that the rail industry agreed to form in recognition of the importance of managing the interfaces between railway systems. The aim of these committees is to assist the railway industry to manage all aspects of identified system interfaces in the most cost effective and efficient way. For a

specific interface issue the *SIC* will determine solutions based on sound technical and economic evaluation and identify which is in the best interest of the industry as a whole.

6.5.6 RSSB manages a programme of research and development (R&D) on behalf of government and the rail industry. NR supports this programme through its membership of the RSSB Board and its R&D Advisory Group, and also through NR's involvement in other industry groupings that act as the client for RSSBs research at the project level.

Rail Accident Investigation Branch (RAIB)

6.5.7 The CHSQO is the primary safety contact with *RAIB*. Regular liaison meetings are held to discuss the management arrangements for accident investigation and significant issues and outcomes arising from accident investigation.

Emergency Services and Local Authorities

6.5.8 The Operational Security & Contingency Planning Manager is the primary safety contact in respect of emergency planning, developing suitable access arrangements in the event of an emergency. These arrangements include the preparation of emergency plans, table top and real life exercises and regular meetings with representatives of the emergency services to review those arrangements.

British Transport Police (BTP)

6.5.9 The Managing Director, England & Wales Network Operations is the primary safety contact with BTP Headquarters. Each Nominated Route Managing Director/ScotRail Alliance Managing Director (Scotland only), or nominated deputy, as chair of the Community Safety Partnership Groups that cover specific geographical areas, is the primary safety contact with the senior BTP officers for those areas. Liaison on local issues is conducted between local line managers and BTP officers. NR is represented on the cross-industry Trespass Risk Group which the BTP are an integral part of.

European and International Affairs

6.5.10 The CHSQO is the primary health and safety contact with Europe (ERA – European Rail Agency, EIM – European Rail Infrastructure Managers and UIC – International Union of Railways) in understanding the development of the new tier of safety regulation and influencing its form so that the UK industry and NR in particular achieve their objectives.

Private Wagon and Locomotive Owners

6.5.11 NR is committed to the contractual arrangements described in Private Wagon Registration Agreements (PWRAs) and Private Locomotive Registration Agreements (PLRAs). The Head of T&RS manages the NR requirements in these agreements. The owners who are signatories to the PWRA or PLRA will be the Entities in Charge of Maintenance (ECM) or will have appointed ECMs for their wagons and locomotives.

6.6   Change Management

Change Management

6.6.1   NR operates formal change management arrangements to control the introduction of change and to confirm that all safety risks are identified, systematically addressed and controlled. These apply to changes relating to organisational structure, management systems, operations, infrastructure engineering, traction and rolling stock route compatibility, product acceptance, and any other factors which may affect the safety of the operational railway.

Organisational

6.6.2   NR has developed the ***Managing Successful Programmes for Network Rail (MSP4NR)*** framework which supports delivery of business change (including people change) programmes across NR. In support of this, NR has developed toolkits, which are available on ***Connect***, for both process improvement and for managing the people aspects of change that are designed to assist managers when they are undertaking organisation, process or system changes.

6.6.3   NR Standard ***NR/L2/HSS/020 Safety Validation of organisational change*** describes the process for validating organisation and associated HSMS changes, including arrangements for consulting employees and Trade Union-appointed health and safety representatives about proposed changes.

6.6.4   Validation affirms that the potential risks associated with a change have been identified, assessed and appropriately controlled. Furthermore, it identifies required changes to the ***HSMS*** and provides compliance with ***CSM RA***.

6.6.5   The sponsor of each proposed change arranges for the completion of a change proposal form, outlining the proposed change and the rationale and benefits to the business. The proposal is submitted for approval in accordance with the ***Authority to Change Organisation (A2CO)*** process.

6.6.6   As part of the ***A2CO*** process, the sponsor is advised of the relevant level of ***CSM RA*** application (with or without an AsBo) that has been agreed by the Health and Safety Management Systems Specialist. The level of validation is proportionate to the scope of change and the potential safety risks associated with the proposal – ***CSM*** application with or without an AsBo.

6.6.7   If approval is given for the change, validation is undertaken in accordance with NR Standard ***NR/L2/HSS/020 Safety Validation of organisational change***. No change is implemented until safety validation has been completed and any required revision is made to the safety management system. Substantial changes are notified to the ORR in accordance with regulation 13 of ***ROGS***. Where a substantial change is to be made in accordance with regulation 11(1), it is not implemented until it has been assessed and the safety authorisation appropriately amended by the ORR.

6.6.8   For major changes, each sponsor arranges for a post implementation review to be undertaken after the changes have taken place to confirm that the intended business benefits have been delivered and the lessons learned for the future. Any new safety requirements arising from the organisational change are also fed back into the process for consideration in relevant, future organisational changes.

Infrastructure, Rail Vehicle and Safety Critical Plant and Equipment

6.6.9   These change control arrangements are applicable to projects that introduce changes to the infrastructure (defined as the track, the signalling, the power supply equipment and stations) or changes to vehicles operating on the network.

6.6.10   This includes changes to:

- Existing vehicles operating on the network

- The way in which existing vehicles are operated

- The infrastructure including new infrastructure

- The way that the infrastructure is operated, maintained and renewed as a potential consequence of a change to the infrastructure or to vehicles operating on the network

- The way in which data is managed

- Specific products that are used on its network

6.6.11   It also includes projects that:

- Introduce new plant, equipment or products onto the network, and which have the potential to have an impact on the safety of the network, or the operations carried out by Transport Operators on the network

- Impact on the infrastructure of any other Infrastructure Manager with which NR infrastructure interfaces

6.6.12   These arrangements examine the nature of the change from a system perspective to provide assurance that the proposed change is fully compatible with:

- The existing and planned future network

- The operation of all its commercial customers on the network and its neighbours

- Its ability to maintain the network in the future

6.6.13   The change is assessed for both its immediate impact and long term consequences, which can be safety related, environmental or commercial. These change control arrangements for applicable projects are managed by the NRAP, the processes for which are defined within the relevant NR Standards within the NRAP Processes Manual *NR/L2/RSE/100 Network Rail Assurance Panel processes*. The requirement for Sponsors to refer qualifying infrastructure change projects to NRAP is also defined in these standards and letter of instruction (LOI). The manual contains the following standards:

- *NR/L2/RSE/100/01 Network Rail Assurance Panel*

- *NR/L2/RSE/100/02 Application of the Common Safety Method for Risk Evaluation and Assessment*

- *NR/L2/RSE/100/03 The application of the interoperability regulations for infrastructure projects*

- *NR/L2/RSE/100/04 Introduction of new or modified vehicles*

- *NR/L2/RSE/100/05 Product acceptance and change to Network Rail operational infrastructure*

- ***NR/L2/RSE/100/06 How to decide what needs product acceptance via NR/L2/RSE/100/05***

- ***NR/L2/RSE/100/07 System Review Panels***

NR Assurance Panel (NRAP)

6.6.14   **NR Standard NR/L2/RSE/100/01 Network Rail Assurance Panel** specifies the role and remit of NRAP. It is chaired by the Chief Systems Assurance Engineer (CSAE) and has representatives from all relevant NR functions and other experts as required. This balance reflects the nature of the changes and the risks that may potentially arise and the effective mitigation of these risks by the various functions within NR.

Common Safety Method on Risk Evaluation and Assessment and Authorisation under Interoperability

6.6.15   NR has change control processes for qualifying Infrastructure Projects that are defined in NR Standards, in order to comply with the relevant requirements of the **CSM RA** and/or **RI Regulations**, and subsequent amendments.

6.6.16   NRAP specifies the necessary consents to allow change to be enacted on the infrastructure. Such consents take the form of Safety Assessment Reports where **CSM RA** applies, and/or support of the verification declarations under RI Regulations in support of the issuance of the requisite authorisation, by the ORR. Prior to 1st April 1994 the network, its operation and associated rail vehicles have grandfather rights which allow them to continue to operate.

6.6.17   Under **NR/L2/RSE/100/02 Application of the Common Safety Method for Risk Evaluation and Assessment**, all projects related to railway infrastructure, as defined in **ROGS** and irrespective of scale, are notified to NRAP. The notification includes an assessment of the projects risk profile. NRAP considers the applicability of the **RI Regulations** and **CSM RA** to each project, advises the project of the applicable requirements, and records all decisions in a database.

6.6.18   Proposed alterations to level crossings which have the potential to affect the Level Crossing Order and/or the interface with road users are additionally progressed under the provisions of the Level Crossings Act and are subject to ORR approval. NR Standard **NR/L2/OPS/100 Provision, Risk Assessment and Review of Level Crossings** sets out the process for determining the safety requirements for new level crossings, and the risk assessment and management processes that apply to both new and existing level crossings.

Authorisation under Interoperability

6.6.19   Certain projects may require to be notified to the DfT for authorisation into use under the RI Regulations. NRAP monitors the process of the notification of projects under NR Standard **NR/L2/RSE/100/02 Application of the Common Safety Method for Risk Evaluation and Assessment** so that projects are correctly allocated to the appropriate procedure. NR Standard **NR/L2/RSE/100/03 The application of the interoperability regulations for infrastructure projects** defines the procedure by which NR projects progress under **RI Regulations**.

6.6.20   Where **RI Regulations** have been deemed to apply, it is necessary to have new or altered assets designed and constructed to common European standards termed **TSIs** and assessed by an independent body, known as a Notified Body

(NoBo). Where there are no applicable TSI requirements, or where permitted by a *TSI*, projects are designed to notified national rules and assessed by a designated and independent body, known as a Designated Body (DeBo). Following these assessments projects require authorisation by the ORR (as the Safety Authority).

6.6.21   Certain Infrastructure Projects that are either deemed to be major renewals or upgrades or involve the construction of new sub-systems fall within the scope of the *RI Regulations*.

6.6.22   Where there is the potential for a project to require *RI Regulations* authorisation, NRAP will:

- Make the initial determination in conjunction with the project sponsor

- Endorse the required submissions (including requests for regulation 13 decisions and derogations) compiled by the project team prior to their submittal to the DfT via the CSAE

- Endorse the NoBo and DeBo remits prior to appointment by the project

- Support the verification declaration that the project meets all the requirements of the *RI Regulations* prior to its submission to the ORR, via the CSAE, as required for the project to be authorised into use

- Support any declarations of conformity or suitability for use, drawn up by the project, for interoperability constituents

NRAP and Assessment of Compatibility

6.6.23   Before any new or changed infrastructure or rolling stock is brought into use, it is necessary to assess the change so that compatibility between assets is maintained. NR and each transport operator are responsible for the safety of their own part of the railway system. Neither party gives permission to or has authority over the other. If authorisation for placing into service is required, this is given by the ORR.

6.6.24   *ROGS* mandates a duty of co-operation between the parties responsible for the management of the railway system. RGS *GE/RT8270 Assessment of Compatibility of Vehicles and Infrastructure* provides a basis for NR and each transport operator to co-operate in establishing the compatibility of infrastructure and rolling stock to facilitate compliance with regulatory responsibilities. The assessment of compatibility forms part of NR's change control arrangements for changes to the infrastructure or to rail vehicles. NR Standard *NR/L2/RSE/100/04 Introduction of new or modified vehicles* defines the process for assessing new or changed vehicles, or changes to routes where existing vehicles operate, for:

a. Compatibility between the infrastructure and the vehicle

b. Technical requirements (NR projects only)

6.6.25   For any NR instigated changes that affect or may potentially affect the safe operation of other transport operators on the network, those relevant transport operators must be engaged and their agreement sought regarding the safe introduction of the change.

6.6.26   For changes instigated by transport operators other than NR and which affect or may potentially affect the safe operation of the network or NR assets, NRAP will act as the primary NR body which receives notification of these changes and, in terms of an assessment of compatibility, assesses their potential impact on NR

and other users of the network. NRAP will then either endorse the change on behalf of NR, through the issue of a summary of compatibility, or endorse any appropriate mitigating actions as agreed by the parties.

System Review Panel and Technical Review Groups

6.6.27   NRAP is supported by System Review Panels (SRPs) which will review presented evidence and seek endorsement that safe integration and technical compatibility have been confirmed before commissioning vehicle, major infrastructure, and information management systems change respectively. The output from SRPs is subject to regular review by NRAP.

6.6.28   NR Standard **NR/L2/RSE/100/07 System Review Panels** specifies the roles and remits of SRPs and the associated interfaces.

Safety critical plant and equipment

6.6.29   NR Standard **NR/L2/RSE/100/05 Product acceptance and change** to Network Rail operational infrastructure defines the NR process for providing assurance to the NR Acceptance Panel that products accepted for use on or about NR infrastructure are:

    a.   Safe

    b.   Fit for purpose

    c.   Do not export unacceptable risks to NRMI

6.6.30   This standard is supported by NR Standard **NR/L2/RSE/100/06 How to decide what needs product acceptance** via **NR/L2/RSE/100/05**.

6.6.31   NR specialists evaluate product features against predetermined criteria to assess whether or not a product is safe and fit-for-purpose. The organisation and management system of product suppliers are also appropriately vetted as part of Supplier Qualification and Licensing.

Common Safety Method on Risk Evaluation and Assessment

6.6.32   The following sets out NR's arrangements for complying with the requirements of **CSM RA** and maps onto NR's existing management arrangements.

Requirements of Common Safety Method Risk Evaluation and Assessment CSM RA

6.6.33   NR is required to have a process for identifying significant changes of a technical, operational or organisational nature. For technical change this is contained within NR Standards: **NR/L2/RSE/100/02 Application of the Common Safety Method for Risk Evaluation and Assessment** and **NR/L2/RSE/100/05 Product acceptance and change to Network Rail operational infrastructure**.

6.6.34   Organisational change is described in NR Standard **NR/L2/HSS/020 Safety Validation of Organisational Change**.

6.6.35   Operational change is described in NR Standards **NR/L2/OCS/031 Risk Assessment and Briefing of Timetable Change** and **NR/L2/RSE/100/01 Network Rail Assurance Panel**.

6.6.36   These arrangements are subject to periodic review by NRAP to confirm their ongoing suitability.

6.6.37   **CSM RA** dictates that the decision regarding whether a change is significant should be set out in a notified national rule. If there is no such rule, as there is not for UK, then expert judgement is to be used based upon the following criteria:

- Failure consequence

- Novelty

- Complexity of Change

- Monitoring

- Reversibility

- Additionality

6.6.38   These criteria are covered for engineering change by the significant difference and significant risk tests as applied under NR Standards **NR/L2/RSE/100/01 Network Rail Assurance Panel**, and **NR/L2/RSE/100/02 Application of the Common Safety Method for Risk Evaluation and Assessment**, whereby programmes of work are examined in totality and not just on an individual project basis. Reversibility is covered as engineering change projects are most usually irreversible and is applied as a default.

6.6.39   The decision on significance is recorded by the:

- Head of System Compatibility (for engineering and operational change) – **NR/L2/RSE/100/01 Network Rail Assurance Panel**

- Chief Health, Safety & Quality Officer (for organisational change) – **NR/L2/HSS/020 Safety Validation of Organisational Change**

- TCAG (for timetable change) – **NR/L2/OCS/031 Risk Assessment and Briefing of Timetable Change**

6.6.40   For vehicle change the Head of T&RS records the decision on significance for T&RS assets, and Head of Plant records the decision on significance for Plant assets.

6.6.41   For changes to standards and Business Critical Rules the BCR Standards & Controls Manager records the significant test.

Contractors and Sub-contractors

6.6.42   Where a manufacture or supplier introduces new or changed products or infrastructure to the market, they are the proposer under **CSM RA**. The proposer provides details of the outcome and their application of **CSM RA** to NR for the generic application of their product.

6.6.43   Where the new or changed product or infrastructure is to be incorporate into the railway system, then the application specific use is subject to NR application **CSM RA** as the proposer. As such contractors, sub-contractors and suppliers shall be required to participate in the hazard identification and management processes as appropriate prior to any consent to introduce the product or infrastructure into service - the cost of this participation is included in any tender or quote.

System Definition

6.6.44   The **CSM RA** process starts with the system definition which includes not just the physical system but also the human and operational system. All hazards associated with the system should be identified including those at the interface of the system with other systems and/or affected parties.

Assessment Body

6.6.45   For changes, Assessment Bodies will be selected and appointed to projects in accordance with the criteria set out in the **CSM RA** Regulations. For timetable change TCAG will fulfil this role, and for organisational change the CHSQO will fulfil this role. The independent assessment confirms whether **CSM RA** has been applied properly and that the system definition (including human and operational interfaces) has been correctly drawn. The Safety Assessment Report produced by the Assessment Body will clearly indicate whether or not implementation of the project is supported by the independent assessor.

Reviews and Audits

6.6.46   NRAP is responsible for the overview of the suitability of the arrangements on an ongoing basis and for liaison in respect of external auditing of the process, as a single point of contact for NR.

Annual Safety Report

6.6.47   The Head of System Compatibility collates the synthesis of the decisions related to the level of significance of the changes for engineering, vehicle and operational change. The CHSQO collates the synthesis of decisions for organisational change and for timetable change (via TCAG).

Application of CSM RA

6.6.48   For engineering and operational changes, the application of **CSM RA** shall be via compliance with NR's relevant health and safety management arrangements and relevant **TSIs**, ENs, **RGSs** and NR Standards. Hazard identification and classification will be in accordance with NR Standards and shall be recorded in the project safety file. In instances in which several bodies are participating in the management of a hazard at an interface, an appropriate record of the arrangements in place is required, which in relation to rail vehicles would typically be an NRAP Summary of Compatibility, or amendment to the Sectional Appendix.

6.6.49   For timetable changes the application of **CSM RA** shall be via compliance with NR Standard **NR/L2/OCS/031 Risk Assessment and Briefing of Timetable Change**. The role of independent assessor will be fulfilled by TCAG in this instance.

6.6.50   For organisational changes, the application of **CSM RA** shall be via compliance with NR Standard **NR/L2/HSS/020 Safety Validation of Organisational Change**. The CHSQO shall act as independent assessor in this instance.

Risk Acceptance Criteria

6.6.51   NR would most usually apply standards, including TSIs, Group Standards, Organisation Standards and Euronorms (ENs) as risk acceptance criteria, as set

out in the HSMS. The management of changes to these and the granting of deviations from them is set out in:

- The *Railway Group Code* and *Standards Manual for Group Standards* including the *Rule Book (GE/RT8000)*

- NR Standard *NR/L2/EBM/STP001 Managing standards – Index of Modules* and the standards within the manual for managing NR Standards

7 Measuring and Monitoring

7.1 Health and Safety Performance Indicators

Health and Safety Performance Indicators

7.1.1 NR measures its health and safety performance against a suite of health and safety performance indicators. These consist of a balanced mix of leading and lagging indicators covering key personal and system safety risk areas, and provide for consistent measurement of health and safety performance.

7.1.2 Health and safety performance indicators are identified by analysis of the risk profile, using information from a range of risk models including the industry *SRM* and, within specific asset groups, the applications of Failure Modes and Effects Analysis (FMEA). Safety indicators are mapped onto the safety risk profile and cover a range of leading and lagging indicators including:

- **Output indicators** – fatalities and/or injuries to each population group, or train accidents

- **Precursor indicators** – set at different levels of the risk hierarchy, covering the key precursors to train accidents and other accidents, and specific risks within each risk sub-group, including different asset groups (e.g. broken rails, buckled rails, bridge strikes)

- **Activity indicators** – measure the adherence to certain critical control activities mapped to specific risk precursors

7.1.3 Each year, as part of the business planning process, the range and definition of health and safety performance indicators are agreed and communicated throughout the organisation. Where appropriate, indicators are normalised (e.g. by train miles/hours worked) to facilitate a meaningful trend comparison. Targets for particular indicators are set, where appropriate, through the business planning process. A master list of corporate health and safety performance indicators is maintained by the STE QHSE team.

7.1.4 Arrangements are made for each group of health and safety performance indicators to be reviewed by specific safety performance groups at appropriate levels of the organisation on a regular basis. This includes analysis of performance against targets and trends and is used to identify areas for further improvement.

7.1.5 Specific safety performance groups are identified for each of the asset groups and each of the delivery functions.

7.1.6 Every four weeks, information on performance against corporate level health and safety performance indicators is collated into a periodic SHEP report. This includes information on specific issues highlighted from analysis by the safety

performance groups throughout the organisation. An extract of key information, the corporate safety, health and environment performance report is provided to the Executive Committee (ExCom) and NSHERG for review. An extract is also provided to the NR Board, Safety Health & Environment Committee (SHEC) for review.

7.1.7   Information at functional levels, and below, is also incorporated into functional reports.

7.1.8   Specific arrangements for data quality assurance are in place throughout the organisation. A description of these data quality assurance arrangements is maintained by Asset Information Services function.

7.1.9   The Group STE Director will compile an annual safety performance report for submission to the ORR which comply with the requirements of the *Railways and Other Guided Transport Systems (Miscellaneous Amendments) Regulations* and *ORR Guidance*, such that NR's safety performance can be aggregated by ORR for reporting on a national basis in compliance with European requirements, which contains:

- Information on how NR's safety targets are met

- The results achieved through putting NR's safety plans into effect

- Statistics for the common safety indicators as relevant to NR

- The findings of safety auditing

- Comments on any deficiencies or malfunctions relating to the safe management of NR's infrastructure

7.1.10   NR will submit the annual safety performance report by the deadline of 30th June, to cover the preceding calendar year.

7.2   Safety Management Information

Safety Management Information System (SMIS+)

7.2.1   **SMIS+** is the industry-wide system used to collate accident and incident information, and which is used for the production of statistics and analysis. SMIS+ is owned and operated by RSSB, who manage the system on behalf of the railway industry. Additionally, it has integrated the former SMIS and Close Call system into one system.

7.2.2   **SMIS+** is to be used by all members of the Railway Group, and NR inputs information to the system to comply with the provisions of RGS *GE/RT8047 Reporting of Safety Related Information* which mandates the requirements for the reporting to **SMIS+**.

7.2.3   Where deemed necessary, a number of NR Standards specify the requirement to report certain types of safety incident information to **SMIS+** (e.g. bridge strikes, fire, level crossing incidents, route crime, SPADs).

7.3   Safety Assurance

Safety Assurance

7.3.1   NR has assurance arrangements that take the form of a three lines of defence model which provides the Board, executive leaders, managers, and external stakeholders, with confidence in the levels of compliance with, and the effectiveness of, NR's health and safety management arrangements.

7.3.2   The three lines of defence assurance regime is illustrated below:

7.3   Safety Assurance

Three lines of defence assurance regime

Level 3 – Independent Challenge & Assurance
Independent & Regulator Audit
- Internal Audit
- ORR Inspection Plan
- Management system certifications

Level 2 – Corporate Oversight
Strategic Management, Policy & Procedure Setting, Functional Oversight, Assurance panels
- Functional Audits (Topic & Management System)
- Engineering Verification
- Principal Contractor Licensing
- Plant Operations Scheme Audits
- GRIP Stage Gate Reviews
- Asset, Infrastructure and Vehicle Change Panels
- GALP

Level 1 – Operational Management
Established Risk & Control Environment
- Line Management Monitoring
- Competence management
- Inspections & Safety Conversations
- Plant Operations Scheme Site Monitoring
- Management Self-Assurance

7.3.3   These monitoring arrangements are prioritised to take account of the areas of greatest risk in respect of the design, construction, operation and maintenance of NR's managed infrastructure. They focus on the early identification of key findings and/or non-conformances that are likely to result in undesired events and take account of the outputs from previous monitoring activity. The monitoring of compliance with NR Standards is achieved through the first and second line arrangements.

Level 1 Assurance Activities

Functional/Business Unit Assurance Planning

7.3.4   First Line of Defence, or Level 1 assurance activities, are those which Business Units/Functions undertake to determine the effectiveness of the risk controls that they have planned to implement.

7.3.5   Functional (or Business Unit) Directors determine:

   a. Those elements of the monitoring regime that are to be applied that will provide ongoing confirmation that the identified controls are being applied and proving effective, and identify any areas of non-compliance, concern or good practice

   b. To whom/what they are to be applied and by whom

   c. The degree/depth/proportion to which they are applied

   d. The frequency of application

   e. The required output(s) from the process of application

7.3.6   In the case of supply chain assurance activities, this includes those activities that already form part of the corporate/Industry supplier accreditation, qualification, selection, and assurance processes, and may also include supplementary requirements specific to their functional activities.

7.3.7   This is predicated on Functional and Business Unit Directors (and their management teams):

   a. Identifying and understanding the existing and emergent key safety risks related to their areas of responsibility and the activities that they undertake.

This includes any shared areas of responsibility or interfaces with others (both internal and external to the organisation)

b. Being able to clearly identify the controls that mitigate those risks

Line Management Monitoring

7.3.8   Every manager has a responsibility to monitor the health and safety performance of their team, including compliance with mandatory standards and procedures. Specifically, managers are required to:

- Review the output of their teams work to confirm compliance. This may include the routine sign-off of work; sample checking; regular one-to-one reviews; team meetings and formal performance reviews. The extent of this monitoring will depend on the complexity of the work, the experience of employees and the degree of risk

- Comply with any specific line management monitoring arrangements specified in relevant procedures (this includes Self Assurance arrangements)

- Conduct formal performance reviews as specified in the formal performance review process, including performance against objectives and how these were achieved, and identify any training and development needs

Planned Health and Safety Inspections

7.3.9   NR carries out pre-planned systematic examinations of workplaces to identify unsafe acts and conditions and arrange for corrective action on a risk prioritised basis. These inspections are carried out by nominated line managers and, where appropriate, are undertaken alongside quarterly inspections by employee health and safety representatives. They form an important element of line management monitoring.

7.3.10   Where considered necessary, the requirements for inspection are defined in relevant NR Standards.

7.3.11   NR Standard *NR/L3/MTC/SE0117 Planned general safety inspections and site surveillance* defines the process for planning, conducting and reporting planned health, safety and environmental general inspections in the central and Route maintenance teams to check that formal controls are being implemented and unsafe acts or conditions are identified.

7.3.12   NR Standard *NR/L2/OCS/041 The Operations Manual* and procedure *NR/L3/OCS/041/3-03 Inspections of Staffed Operational Locations* specify the inspection requirements for central and Route operations line managers for signal boxes, manned level crossings, electrical control rooms and moveable bridges.

7.3.13   NR Standard *NR/L3/OPS/044 Managed Station Manual - Contents, Procedures & Responsibilities Matrix* and procedure *NR/L3/OCS/044/MS-01 Planned General Inspections* specifies the inspection requirements for Station Manager/Area Manager Alliance (Wessex only), for Managed Stations.

7.3.14   NR Standard *NR/L2/OHS/0044 Planning and managing construction work* requires the Principal Contractors inspection arrangements to be defined in the Construction Phase Plan, the adequacy of which is reviewed by the relevant NR Project Manager.

Safety Conversations

7.3.15   Senior leaders understand the impact of good **safety conversations** on safety and risk awareness. This also provides system oversight, and by holding open, learning conversations, a senior leader can understand the interaction of risks within the system under their control, as well as identify unintended consequences resulting in elevated risk.

7.3.16   This is covered in more detail in HSMS 2.12 including the minimum expectations for key roles, both in terms of frequency and recording requirements and the requirement that the routes and businesses will develop local plans and set local expectations that other influential members of the team should also conduct **safety conversations**.

Plant Operations Scheme Site Monitoring

7.3.17   NR Route based staff undertake **POS** inspections on site to monitor the safe delivery of works. A mixture of announced and unannounced inspections are used, with the emphasis being on unannounced. Approximately 2% of shifts are monitored in this way.

7.3.18   NR provides a three day OTP training course to Route based staff which will provide the necessary competence for effective inspection. The Principal Contractor and the **POS** Provider will also be undertaking a programme of on-site audit activity.

7.3.19   Reactive monitoring is carried out to examine any unsafe OTP related events after they have occurred. This will be managed through with the resultant lessons learned.

Management Self-Assurance

7.3.20   NR managers are required to participate in the self-assurance process relevant to their Function/Business Unit. Self-assurance requires identified managers to assess their compliance, typically every 4 weeks, with responsibilities and requirements described within the HSMS, formal industry and company standards and procedures and safety legislation. Managers are required to develop action plans to address all deficiencies identified as a result of this self-assurance activity.

7.3.21   Maintenance and Works Delivery staff within the Routes are required to complete the self-assurance process in accordance with NR Standard **NR/L3/MTC/MG0221 Network Operations non-operations staff management self-assurance procedure**.

7.3.22   Operations staff within the Routes are required to complete the self-assurance process in accordance with Operations Manual **NR/L3/OCS/041/7-02 Operations Self Assurance Process**.

7.3.23   Managed Stations staff are required to complete the self-assurance process in accordance with the Managed Stations Manual **NR/L3/OCS/044/MS-04 Self Assurance Process**.

Annual Line Managers Self-Assurance

7.3.24   NR's Functional Audit programme is underpinned by the self-assurance process which is also defined in NR Standard *NR/L2/ASR/036 Network Rail Assurance Framework*. The process requires identified managers to assess their compliance with responsibilities and requirements described within the HSMS, formal industry/organisation standards/procedures and safety legislation. Managers are required to develop action plans to address all deficiencies identified as a result of this self-assurance activity.

7.3.25   Each year line managers within specified parts of the organisation are requested to complete an annual Self-Assurance Questionnaire to confirm compliance (or otherwise) with certain requirements of NR's HSMS. Line managers have safety responsibilities in respect of the management of their team. The questions are designed around the day-to-day line management responsibilities and the evidence should be easily accessible.

7.3.26   Functional co-ordinators are appointed to co-ordinate the self-assurance process on behalf of the Functional (or Business Unit) Director. However, the responsibility for completing the Self-Assurance Questionnaire(s) lies with individual line managers.

7.3.27   Where non-compliances are identified the relevant line manager is required to put corrective and preventative actions in place to remedy the non-compliance and prevent future recurrence.

7.3.28   The functional co-ordinators use a functional summary matrix to consolidate the results from all of the questionnaires completed by individual line managers into a single summary for the whole Function. This includes the results of the questionnaire completed by the functional director. The functional director reviews the results presented within the functional summary matrix with the functional co-ordinator and signs a certificate of assurance.

7.3.29   The Corporate Incident and Assurance Manager produces and submits a paper for consideration by the NSHERG meeting reporting on the levels of compliance across the organisation (normally April each year). This is informed by the results contained within the Functional Summary Matrices and the accompanying Certificates of Assurance.

7.3.30   Functional directors are required to request their line managers to provide feedback to their teams on the results of the line managers' self-assurance process. This includes the results for their team, within their function and across the organisation as a whole.

7.3.31   Functions (and Business Units) may issue a supplementary questionnaire when issuing the line managers self-assurance questionnaire or may choose to issue their own self-assurance questionnaires on a more frequent basis.

Level 2 Assurance Activities

7.3.32   Second line of defence, or Level 2 assurance activities, are those which provide corporate oversight of the Business Units/Functions. These assurance activities are primarily focussed on testing whether the safety risk controls are designed so that they can be effective and the Business Units/Functions have implemented the controls.

Functional Audit

7.3.33   Each financial year a **Functional Audit programme** is prepared, in conjunction with the functions, by the Corporate Investigation and Assurance Manager. It takes into account the results of previous audits, the risk of failure of control measures and includes compliance to technical standards and specifications. NR also sponsors specific topic audits, where organisation and rail industry wide concerns have been identified. The audit programme shall also effectively meet the NR Policy and Objectives requirements prior to submitting for agreement each year, by the NSHERG meeting.

7.3.34   The programme identifies:

   a. The subject/nature of the audit

   b. Those entities to be audited

   c. The resources that will conduct the audit

   The programme of audits primarily comprises of Functional Audits but also includes a small number of Cross-Functional Audits.

7.3.35   Audits are undertaken by trained auditors in accordance with the requirements of NR Standard **NR/L2/ASR/036 Network Rail Assurance Framework**.

7.3.36   Following each Functional Audit, a review meeting is held between the lead auditor and auditee, to review the audit findings and agree formal non-conformance reports (NCRs), observations and areas of good practice. Following this meeting the auditee prepares an action plan to address issues raised. The action plan shall include both corrective actions to correct the non-conformance and preventative actions to prevent future reoccurrence.

7.3.37   All Functional Audit findings are recorded in a national audit database, so that the programme and results of audits are visible to all business units. Details of corrective and preventative actions taken to address non-conformance reports (NCRs) are also entered into the national audit database. Closure of the actions is verified by a competent auditor.

Engineering Verification

7.3.38   Engineering Verification is a part of NR's assurance process for confirming that infrastructure assets are fit for purpose. NR Standard **NR/L2/RSE/070 Engineering Verification** describes the process for undertaking Engineering Verification.

7.3.39   It aims to check how well its control processes work by physically inspecting infrastructure assets, at all stages of their life, to check that they:

   •   Comply with standards

   •   Are free from defects or problems which may affect the safety of the line, even if the assets comply with standards

   •   Are in a condition consistent with asset records

   •   Are in the condition that would be expected from the inspections carried out and the work recorded as being necessary in work databases

7.3.40   Engineering Verification is additional to other assurance processes such as audit or regular process checks, complementing them by:

- Being focussed on the physical state of the asset, such as the reliability and integrity of the asset, as well as whether it complies with standards

- Being carried out independently of the team responsible for constructing or maintaining the asset

- Looking at the wider safety picture

- Assessing whether standards are appropriate

7.3.41   Engineering Verification also provides opportunities for:

- Transferring lessons across NR, including good practice

- Examining the local root cause of any issues found with the asset

- Identifying developing trends

- Coaching and mentoring people on the management of assets, checking for their training needs and any skills gaps

- Identifying public interface issues, e.g. trespass and vandalism, vehicle incursion, level crossing misuse

7.3.42   The Engineering Verification programme is determined by the relevant Head of Discipline, delivered by engineering capability teams and managed by the Engineering Verification Manager.

7.3.43   The programme describes:

- The number of verifications to be carried out

- When they are to be carried out

- An appropriate level of detail of the type of asset

- Geographical areas and activities to be checked

- The lead verifier for each verification

7.3.44   The programme is tabled at the NSHERG Meeting for endorsement before the start of the year. Once approved, the programme is managed and tracked by the Engineering Verification Manager.

7.3.45   The lead verifier for each verification consults with the local manager or engineer to plan and undertake their assigned verifications. During each verification, the lead verifier categorises issues raised (major/minor/observation), identifies any actions needed, and agrees these with the appropriate person(s) responsible (usually the local manager/engineer). The lead verifier will also take immediate action to control a risk that they judge to be significant.

7.3.46   The lead verifier produces a report for each verification, and agrees and signs off the final report, including actions, with the appropriate manager or engineer. The findings and actions from each verification is recorded in an action tracking database (arrangements are being made to migrate this to NR's organisation-wide assurance database).

7.3.47   Each person assigned an action is required to manage the agreed action to completion within the agreed timescales. Once they have completed the action,

they are required to notify the lead verifier who agreed the action with them. The lead verifier is required to monitor progress to close out the actions. The lead verifier is also required to update the action tracker records to show the action as closed.

7.3.48   On a quarterly basis, a report is produced that:

- Summarises the progress in delivering the agreed Engineering Verification programme

- Summarises the results of the Engineering Verification visits carried out and identifying common themes or key trends, whether by management unit, process or type of asset

- Describes any actions needed to address common themes or key trends, who is responsible for these actions and when they will be completed

- Reports the number of issues closed in the quarter and the number of new issues raised

- Includes examples of particularly important issues identified, whether because of the level of risk or their recurring nature

- Reports progress in completing the actions listed in the verification reports

7.3.49   In respect of NR's role as an Entity in Charge of Maintenance (ECM), the Engineering Change Process aims to confirm that Traction and Rolling Stock, On-Track Machine and On Track Plant assets are fit for purpose. NR Standard **NR/L1/RMVP/0001 Network Rails Plant and Traction and Rolling Stock (T&RS) Policy** describes the process for undertaking Engineering Verification. It aims to check how well it controls design, construction and maintenance, and to check that they:

- Comply with standards

- Are free from defects or problems which may affect the safety of the line, even if the assets comply with standards

- Are in a condition consistent with asset records

- Are in the condition that would be expected from the inspections carried out and the work recorded as being necessary in work databases

Deep Dive Reviews

7.3.50   Deep dive reviews are conducted in response to an emerging risk where there is a need to review the strategies, policies, initiatives, risk exposure, targets and performance of NR, and where appropriate of its partners, suppliers and contractors.

7.3.51   The outcome of each review is to reach:

- A common understanding of the risk and its causes

- A view on the level of risk reduction expected

- Agreement on the on-going monitoring of performance in this area

- Agreement on the future strategy for managing the risk

7.3.52   Recommendations and associated actions are processed via the National Recommendations Review Panel (NRRP), recorded in NR's national assurance database and are tracked through to completion.

Principal Contractor Licensing

7.3.53   The Route Services Contracts & Procurement Director has overall responsibility for the delivery of NR supplier qualification as described in NR Standard ***NR/L2/CPR/201 Supplier Qualification under the RISQS scheme***. The Assurance (Licensing) team undertake assessments of NR Licensed suppliers as described in NR Standard ***NR/L2/INI/CP0070 Principal Contractor Licensing***. Supplier assessments carried out as mandated by these standards cover compliance to relevant Railway Group/Industry standards and NR organisation standards, and are underpinned by a programme of reviews of suppliers, carried out by business units, during the execution of contracts.

Plant Operations Scheme Audits

7.3.54   The ***POS*** scheme requires an annual management system audit that is conducted by RISQS at the ***POS*** provider's headquarters location.

7.3.55   NR undertakes a Technical audit of each ***POS*** provider. This audit examines a sample of OTP and its associated maintenance records in detail at the provider's depot. Periodicity of audit is 12 months for NR Route ***POS*** holders and 18 months for the external ***POS*** providers. This periodicity is regularly reviewed against risk and maturity of the organisations.

7.3.56   NR undertakes a sample of announced on-site audits. The audit Route/Supplier is selected using a risk based approach and consists of a full review of pre-work planning documentation and an on-site visit during the work to view the application of the plan.

7.3.57   Unscheduled ***POS*** audits (technical and site) can be undertaken should reactive monitoring and intelligence deem it necessary.

Level 3 Assurance Activities

7.3.58   Third line of defence, or Level 3 assurance activities, are those which are independent of the Business Units/Functions and include Regulatory and third party assessment of the business. These assurance activities are primarily focussed on testing the effectiveness of Business Unit/Function policies in achieving NR's corporate objectives.

SHE Internal Audit

7.3.59   An annual programme of functionally independent internal audits is undertaken by the Group Finance, Risk and Internal Audit function to provide assurance to the Board, via the Safety, Health & Environment (SHE) Committee and Audit & Risk Committee, that controls are in place for the key health and safety risks facing the organisation and that those controls are being implemented and are effective in controlling the risk.

7.3.60   The objective of the Internal Audit programme is:

- To examine from a functionally independent perspective the degree to which at all levels within the organisation

- Key health and safety risks have been identified
- Controls to mitigate those risks have been put in place
- Controls are being applied and proving effective at mitigating the risk

- To identify any weakness in the application of the required controls or in the effectiveness of the control being applied

- To establish that corrective and preventative action will be taken to address any such weaknesses

- To report the key findings to the SHE Committee, Audit & Risk Committee and senior management

7.3.61   The programme is prepared by the Director, Risk & Internal Audit. The risk areas to be audited are selected on a risk based approach that is informed by a number of sources including:

- NR's corporate level safety risk map
  - The Industry Safety Risk Model (*SRM*)
  - The Pre-cursor Indicator Model (*PIM*)

- Emerging trends identified through analysis of accident/incident data within the SHEP report

- Intelligence from safety performance reviews and Safety Assurance activities such as Functional Audits, Engineering Verification, Self-Assurance, Standards deviation management, Safety Conversations and Planned General Inspections

- Senior management concerns raised at The NSHERG Meeting or SHE Committee

- Concerns from stakeholders such as the ORR, train operators, station operators, trade unions, government or members of the public

- Internal and external influences (changes & trends) that may affect risk e.g. major construction projects, passenger numbers, road traffic density, climate change, social change, automation

- Concerns raised through confidential reporting channels such as CIRAS, or from whistleblower reports

- Causal, contributory or underlying factors from recent accident and incident investigation reports

7.3.62   The audit programme aims to examine the key passenger, workforce and public health and safety risks at least every four years. The programme is submitted to the SHE Committee annually, initially in draft form for review and then for endorsement following revision. It contains details of the subject/nature of the audit (i.e. risk area) and the entities to be audited. For each audit a lead auditor and a lead contact (representing the risk area to be audited) is identified.

7.3.63   These audits are led by senior auditors (Lead Internal Auditors) within the Group Finance, Risk and Internal Audit function and utilise a number of techniques which include:

- Interviews with senior managers to determine the extent to which the key risks have been identified and to highlight the controls that are required to be in place to mitigate those risks

- Interviews with key staff responsible for application of the controls

- Examining relevant documentation at both management and working level

- Discussions with frontline staff to examine their awareness of the required controls and their purpose, and to seek their opinion as to whether the controls are proving effective

- Surveillance and observations conducted at both management and working level to examine the degree to which the controls are being applied

- Confirming whether the documentation is compatible with what is being observed

7.3.64   At the end of each audit, a review meeting is held between the lead auditor and lead contact to review the audit findings. All audit findings are rated by the lead auditor according to their severity and an overall audit assessment rating is applied based on the number and severity of the findings. Each audit is rated unacceptable, unsatisfactory, fair or good. For all audit reports with an 'unacceptable' audit rating, a follow up audit will be scheduled in the subsequent year. Any areas of good practice that have been identified are highlighted within the report for wider dissemination.

7.3.65   Following the audit review meeting, the lead auditor prepares a report detailing the audit findings and the lead contact (in consultation with others) will prepare an action plan, comprising both corrective and preventative measures, to address issues raised. Timescales for implementation of the actions are agreed between the lead auditor and lead contact based on the severity of the audit finding and practicability of undertaking the action.

7.3.66   All Internal audit findings are recorded in NR's organisation-wide assurance database. Details of corrective and preventative actions taken to address the findings are also entered into the database. Closure of the actions is verified by the lead auditor.

7.3.67   Audit findings are used to inform the risk scoring within the corporate level safety risk map and the control ratings for their associated controls.

7.3.68   To support business to embed actions, the following is undertaken:

1. A detailed audit action requirements document. This is produced once actions have been initially agreed by the Action Owner and before the report is finalised. The objective is to provide the Action Owner with a clear understanding of the type of evidence required before verifying implementation of an action. For example, evidence of a report being issued for three consecutive periods. It provides a sense check of the Auditee's understanding of the action, and supports the setting of realistic and achievable timeframes for completion

2. Six to eight weeks after the final report has been issued to the business, a meeting is held with the Action Owners. The purpose of this meeting is to gain an update on progress to date and to address any concerns or uncertainties over the action

7.3.69   In order to confirm whether the actions taken in response to Internal audit findings (from audits where the overall audit assessment rating is unsatisfactory/unacceptable) have been effective at reducing risk, further reviews/audits are planned following a period of elapsed time. These are either

conducted as a standalone follow-up activity or integrated into the remit for the next planned audit.

7.3.70   A review of closed audit actions is undertaken to confirm if the actions have been sustained. The selection criteria is normally:

- 'Serious' and 'high' rated actions

- The actions have had at least one year to be sustained

7.3.71   With regard to audits rated unacceptable, progress being made on actions associated with 'Serious' findings from 'Unacceptable' audits is ascertained, and whether closed actions have been appropriately sustained. The follow up activity will additionally seek to ascertain any emerging risks in the subject matter area to inform future audits / reviews:

1. Progress made to sustain closed actions, and evidence available to substantiate this

2. Plans in place to close open actions, seeking evidence to demonstrate progress to closure

3. Emerging risks in the subject matter area

7.3.72   The Independent Audit team within the Group Finance Function is subjected to an external quality assessment at least once every five years by a qualified, independent external reviewer and the results are reported to the ***Audit and Risk Committee (ARC)***.

ORR Inspection Plan

7.3.73   In accordance with the ORR's strategy for the regulation of health and safety on the railway, their annual Inspection Plan aims to assure the ORR, and through it the general public, that NR is maintaining and, as appropriate, improving its health and safety performance. The plan is designed to determine whether NR's management systems deliver effective health and safety risk control in respect of passengers, the workforce (including contractors) and the public.

7.3.74   The ORR Inspection Plan details the top level national inspection projects with each broken down further by topic/issue/activity/location. An ORR lead inspector is identified for each inspection project.

7.3.75   A draft of the annual NR Internal Audit Programme is shared with the ORR at an early stage of their planning activity, to identify any audits/inspections that could be conducted jointly/collaboratively. For those audit/inspection topics where there may be some overlap, the NR lead auditor discusses this further with the ORRs lead inspector, when preparing the terms of reference for the audit, with a view to minimising duplication and maximising coverage.

7.3.76   A NR lead contact is assigned to each inspection project, to facilitate discussions with the ORR and to co-ordinate activities across the relevant functions/routes/projects involved.

7.3.77   The ORR will normally make contact with and/or meet the relevant Route Managing Director/ScotRail Alliance Managing Director (Scotland only), or representative, before embarking on route level inspection plan activities, in order

to explain what work is to be done locally, by whom and when, and to seek co-operation and contact details for NR personnel likely to be involved.

7.3.78   NR holds Quarterly Safety Performance Review Meetings with the ORR to discuss progress with implementation of the ORR Inspection Plan and any key findings. Similarly NR reports findings from its own internal assurance activities. These meetings are attended by the CQHSEO. Key findings and trends from both the ORR Inspection Plan and from the NR internal safety assurance activities are also reported to the NSHERG meeting.

7.3.79   At the end of the year the ORR lead Inspector will normally produce a report for their inspection project summarising their findings, and send it to the NR lead contact. If there are any recommendations in the report they are reviewed to determine any action that should be taken by NR, and any such actions are tracked through to completion by the lead contact. NR's Reporting & Investigation Manual contains procedure *NR/L3/INV/3001/RIM117 Management of Recommendations from ORR Inspection Plan Reports* that provides a structured process for the management of the ORRs Inspection Plan reports and any recommendations contained therein.

7.3.80   Accepted recommendations from the ORRs Inspection Plan reports are entered into the national assurance database for tracking through to completion.

7.3.81   The Engineering Verification & Recommendations Manager tracks progress with the implementation of these actions and advises the ORR lead inspector of progress. The status of actions to address each recommendation are reported in the periodic SHEP report.

7.3.82   When the actions to address a recommendation have been completed, the lead manager notifies the Engineering Verification & Recommendations Manager who considers whether further assurance is required to verify closure. The Engineering Verification & Recommendations Manager then advises the ORR lead inspector that the recommendation is closed.

7.3.83   Progress with closure of actions in respect of recommendations arising from ORR inspection reports are reviewed by The NSHERG Meeting each quarter.

7.4   Accident and Incident Reporting and Investigation

Overview

7.4.1   NR's arrangements for accident and incident investigation and reporting are defined in NR Standard*s NR/L2/INV/002 Accident and Incident Reporting and Investigation*, and *NR/L3/INV/3001 Reporting and Investigation Manual* that incorporate modules for reporting and investigating accidents and incidents, tracking the progress of investigations, and managing associated recommendations.

Close Call Reporting

7.4.2   The *Close Call reporting framework* is a rail industry wide system (adopted by NR) for reporting anything that has the potential to cause harm or damage. A Close Call is defined as anything with the potential to cause harm or damage. This includes the potential to:

- Harm a person including minor, major injuries, and fatalities

- Harm the environment and/or protected species

- Damage railway infrastructure, plant, vehicles, tools and equipment

7.4.3   Close Calls are where corrective or preventive action will remove risk from the unsafe behaviour and/or condition before it becomes an incident. Reporting these occurrences will help to achieve learning and continual improvement. This will lead to a reduction in more serious events. Close Calls are also reported in the National SHEP report.

Accident Reporting

7.4.4   NR's arrangements for maintenance and operational accidents are defined in NR Standard *NR/L2/INV/002 Accident and Incident Reporting and Investigation* and are additional to the statutory reporting requirements of the Railways (Accident Investigation and Reporting) Regulations (RIDDOR). The standard is supported by the *NR/L3/INV/3001 Reporting and Investigation Manual* incorporates modules for reporting and investigating accidents and incidents and tracking the progress of investigations and managing associated recommendations.

7.4.5   Line managers advise employees for whom they are responsible of the requirements of the procedures for reporting. Employees are required to advise the relevant Control and their line manager as soon as possible whenever they have had an accident, assault or a case of occupational ill health.

7.4.6   All information in respect of accidents, incidents and cases of occupational ill health in managed through the *SMIS+*. Reports are provided to *RAIB*, ORR and the rail industry as required.

7.4.7   Urgent information is reported and disseminated throughout members of the Railway Group in relation to accidents and failures affecting rail vehicles and equipment. This enables appropriate corrective action to be taken quickly. NR Standard *NR/L2/OPS/035 Dissemination of Urgent Operating Advice* defines how this arrangement is applied by NR.

7.4.8   NR has arrangements in place for complying with the requirements of RGSs *GE/RT8250 Reporting High Risk Defects* and *RIS-0707-CCS Management of Safety Related Control, Command and Signalling System Failures*.

7.4.9   Employees are required to complete, where possible, the relevant section of the reporting form and provide this to their line manager who will undertake an initial investigation. The severity of the accident/incident/occupational ill health will determine who will complete and/or provide the initial report to the ORR and *RAIB* (i.e. the SHE Reporting Team) and will also determine the type of further investigation that will be undertaken and who will lead the investigation (i.e. RAIB/ORR/Police/rail industry led).

7.4.10   The SHE Reporting Team cover each of NR's Routes and input all information in respect of accidents, incidents and cases of occupational ill health to the *SMIS+*. They also provide reports to *RAIB*, ORR and the rail industry as required.

7.4.11   An additional arrangement enables the immediate reporting and dissemination of urgent information throughout members of the Railway Group in relation to accidents and failures affecting rail vehicles and equipment. This enables lessons relating to an accident involving one member of the Railway Group to be

disseminated to all other members of the Railway to enable appropriate corrective action to be taken quickly. NR Standard *NR/L2/OPS/035* **Dissemination of Urgent Operating Advice** defines how this arrangement is applied by NR.

7.4.12   NR has arrangements in place for complying with the requirements of RGSs *GE/RT8250 Reporting High Risk Defects and RIS-0707-CCS Management of Safety Related Control, Command and Signalling System Failures*.

Accident and Incident Investigation

7.4.13   All accidents/incidents occurring on the network are investigated to determine both the basic and underlying causes and identify appropriate corrective action in order to prevent, or reduce, the risk of their recurrence. Some types of accident/incident will not be the subject of a NR led investigation, as the type of accident may only require the completion of a standard accident report form that will capture the causes of the accident/incident, e.g. trespasser fatalities and suicides.

7.4.14   The actual and potential consequences of the accident/incident and potential for learning will determine the level and type of investigation that will be undertaken and who will lead an investigation. Investigations will be undertaken by:

- An industry member (Local and Formal Investigations in accordance with RGS *GO/RT3119 Accident and Incident Investigation*)

- *RAIB*

- The ORR or Health & Safety Executive (including Public Inquiries)

- The British Transport Police

- A coroner

7.4.15   *RAIB* is the body responsible for the independent investigation of rail accidents and is required to investigate certain types of accidents and incidents. Formal interface arrangements are established between NR and the *RAIB* through the Corporate Investigation and Assurance Manager. All parties in the Railway Group, or those undertaking work on their behalf, have a duty to co-operate in accident investigations.

Reporting of Accidents and Incidents

7.4.16   NR Standard *NR/L2/INV/002 Accident and Incident Reporting and Investigation* is additional to the statutory reporting requirements of Railways (Accident Investigation and Reporting) Regulations (RIDDOR), and mandates the use of the *Reporting and Investigation Manual*:

a. To provide a consistent, comprehensive and structured process:

- For the reporting of accidents and incidents

- For the investigation of accidents and incidents in order to prevent, or reduce the risk of, their recurrence, without apportioning blame or liability

- That enables information obtained from investigations to be shared with, and used by, organisations with a direct responsibility for maintaining, or improving railway safety

b. So that:

- The requirements of RGSs *GO/RT3119 Accident and Incident Investigation* and *GE/RT8047 Reporting of Safety Related Information* are met

- Accurate information is provided to the *SMIS+*

- Action plans from investigation reports are accepted by the responsible Designated Competent Person (DCP) for managing their implementation, tracking and closure once complete

- Recommendations from investigation reports, including those carried out by other parties, are systematically considered, implemented where appropriate, and tracked to completion

    c. To assist in:

- Assessing safety risks

- Monitoring safety performance, and compliance with NR's health and safety management arrangements

7.4.17   Typical Maintenance and Operational accidents and incidents could include:

- Collisions

- Derailments

- Collisions with objects

- Collisions with road vehicles at level crossings

- Striking people on the line

7.4.18   Line managers advise employees for whom they are responsible of the requirements of the procedures for reporting. Employees are required to advise the relevant Control and their line manager as soon as possible whenever they have had an accident, assault or a case of occupational ill health.

7.4.19   NR's *Reporting and Investigation Manual* incorporates a set of NR Level 3 standards to provide consistent, comprehensive and structured processes for the investigation of accidents and incidents without apportioning blame or liability. The manual covers:

- Reporting of accidents, incidents and occupational ill health

- Reporting of accidents, incidents and occupational ill health to *SMIS+*

- Communicating with Outside Parties on accidents and incidents

- Irregular Working – Reporting and Risk Ranking

- Statutory reporting of accidents, incidents and occupational ill health

- Advising Safety Representatives of accidents and incidents

- NR and National Safety Authority (ORR) interface and liaison arrangements

- Reporting of and responding to enforcement action

- Management of ORR inspection plan findings reports

- Deciding the lead organisation and level of investigation

- External agency investigations

- NR led investigations

- Investigations led by other Railway Group members

- Tracking of investigations, recommendations and local actions

- Management of recommendations and local actions

7.4.20   NR Standard *NR/L3/INV/3001/RIM114 Advising Safety Representatives of Accidents and Incidents* describes the process for the reporting of accidents, incidents and occupational ill health to health and safety representatives.

7.4.21   NR Standards *NR/SP/CTM/032 Training, Competence and Assessment in Accident and Incident Investigation*, and *NR/L3/NSC/313/SP-2.06 Incident Investigation and Safety of the Line*, for specific operations investigations, detail the competence arrangements for employees undertaking accident and incident investigation activities, i.e. Designated Competent Person (DCP) and lead investigators.

7.4.22   The competence requirements for DCPs and Lead Investigators is part of the Skills Assessment Scheme. The DCP is considered competent by virtue of the skills, knowledge and experience required for the post they hold. This is supplemented by a briefing available from the Senior Investigators to help DCPs understand the requirements of the role. This briefing will be supplemented further by an e-learning module for new DCPs.

7.4.23   In order to attain competence, an investigator must:

   a. Attend an approved training course

   b. Undergo an initial period of mentoring/workplace support

7.4.24   LIN competence will be required to lead an investigation and this can be achieved by either:

   a. Completing the Accident Investigation Learning Programme

   b. Completing the Accident Investigation Refresher training, for staff who hold the INV1 or INV2 competence

7.4.25   A DCP is appointed for accidents/incidents with responsibility to determine how the accident/incident should be investigated. The level of investigation is based on an assessment of the actual and potential severity of the accident/incident. The *Reporting and Investigation Manual* includes the process that defines the levels of investigation and covers the most common accidents and incidents which occur during the operations on, or maintenance and renewal of the network. It is also used to help determine the lead function for each type of accident/incident.

7.4.26   Where appropriate, the DCP appoints a lead investigator to conduct the investigation. The DCP determines the remit for the investigation. The remit identifies the lead investigator for the investigation, its scope and the timescale for its completion.

7.4.27   Effective investigation requires the preservation of evidence both on and off site. NR liaises, as appropriate, with other members of the Railway Group, *RAIB,* and other regulatory bodies so that the relevant evidence is preserved, made available and subject to specialist testing as necessary. Appropriate specialists are involved, as necessary, for the examination and interpretation of evidence as an input to the investigation process.

7.4.28   The lead investigator advises the DCP immediately if any urgent safety matters are discovered during the investigation, following which the DCP instigates the process of communicating such matters to Railway Group members in accordance with NR Standard **NR/L2/OPS/035 Dissemination of Urgent Operating Advice**.

7.4.29   The lead investigator produces a report that is reviewed, with the involvement of the DCP, to confirm that the immediate and underlying causes have been established. Local actions arising from investigation reports are accepted by the DCP who is responsible for managing their implementation, tracking and sign-off once complete. Information obtained from investigations is shared with organisations that have a responsibility for maintaining or improving railway safety.

7.4.30   The NR Standard **NR/L3/INV/3001 Reporting and Investigation Manual** incorporates processes for tracking the progress of investigations and the review and management of associated recommendations based on the type and level of investigation.

7.4.31   The **Investigations Handbook** provides guidance on each stage of the investigation process to NR's DCPs and lead investigators.

Investigations Led by Other Organisations

7.4.32   In the majority of instances NR take the responsibility and will lead the investigation.

7.4.33   Significant railway accidents will be investigated by RAIB, and NR will ensure close co-operation with **RAIB** Inspectors. NR front line operational on-call managers are trained to act as a Train Operator Liaison Officer (TOLO).

7.4.34   Where a Rail Industry Duty Holder is the lead body for investigating an incident, the Corporate Investigation and Assurance Manager will be responsible for agreeing the investigation remit on behalf of NR, and for ensuring NR employees are made available as necessary for conduct of the investigation. **SP-2.06 Safety of the Line investigations** prescribes the arrangements to meet the requirements of safety of the line investigations and interface with other railway industry parties for OTM Driving outside possessions. Operations Supervisors carry out investigation into all SPADs and other Safety of the Line Incidents in accordance with **SP-2.06 Safety of the Line investigations**.

7.4.35   NR will ensure that staff co-operate with any other party leading an investigation, including **RAIB**, ORR, and British Transport Police.

Systems for Analysis and Review

7.4.36   The purpose of investigation into accidents/incidents is to determine the sequence of events, to identify the causal and any underlying factors and to recommend measures to prevent future re-occurrence. NR's processes for the reporting and investigation of accidents and incidents, including the management of recommendations and local actions (see HSMS 7.1 Health and Safety Performance Indicators), are included within NR Standard **NR/L3/INV/3001 Reporting and Investigation Manual**. The overarching NR Standard is **NR/L2/INV/002 Accident and Incident Reporting and Investigation**.

7.4.37   Recommendations may be directed towards NR from the following sources:

- Judicial and HSE Inquiries

- *RAIB* Investigation Reports

- Industry Formal or Local Investigation Reports

- Coroners Inquests

7.4.38   The process for managing and tracking recommendations from these sources within NR is well established and is detailed in NR Standards *NR/L3/INV/3001/RIM301 Tracking of investigations, recommendations and local actions* and *NR/L3/INV/3001/RIM302 Management of recommendations and local actions*.

7.4.39   Reports and recommendations arising from RAIB Investigations and NR led Formal Investigations are reviewed by the National Recommendations Review Panel (NRRP), which meets every four weeks. The NRRP also review recommendations from Coroners Inquests or Public Inquiries.

Process for Dealing with National Incident Reports

7.4.40   NR arrangements for dealing with National Incident reports is defined in NR Standard *NR/L1/RMVP/0001 Plant and Traction and Rolling Stock (T&RS) Policy*.

7.4.41   All information in respect of accidents, incidents and cases of occupational ill health is managed through the *SMIS+*. Reports are provided to RAIB, ORR and the rail industry as required.

7.4.42   Urgent information is reported and disseminated throughout members of the Railway Group in relation to accidents and failures affecting RMVP. This enables appropriate corrective action to be taken quickly. NR Standard *NR/L2/OPS/035 Dissemination of Urgent Operating Advice* defines how this arrangement is applied by NR.

7.4.43   NR has arrangements in place for complying with the requirements of RGSs *GE/RT8250 Reporting High Risk Defects* and *RIS-0707-CCS Management of Safety Related Control, Command and Signalling System Failures*.

Learning from Experience

7.4.44   NR's processes for the reporting and investigation of accidents and incidents, including the management of recommendations and local actions are included within the Reporting and Investigation Manual The overarching NR Standard is *NR/L2/INV/002 Accident and Incident Reporting and Investigation*.

7.4.45   The findings are subject to scrutiny, interpretation and analysis such that key findings and trends can be reported and acted upon.

7.4.46   Safety intelligence gained through Safety Assurance activities is also supplemented by the receipt of findings from external or independent assurance activities and other forms of safety intelligence such as:

- **Regulatory Review/Monitoring** - These are assurance activities undertaken by external regulatory bodies such as the ORR or HSE. The outputs can range from Inspection Plan findings to Enforcement Action

- **Independent External/Internal, or Audit/Challenge** - This includes assurance activity undertaken by external non-regulatory sources (either internally or externally commissioned). It includes action taken in response to findings from RAIB and non-NR led Industry Investigation reports. It can also include investigation into concerns raised through correspondence (e.g. Trade Unions, Train/Station Operators, Public Enquiries, government departments or the general public) or through industry confidential reporting channels (e.g. CIRAS)

- **NR led Accident and Incident Investigations** (see HSMS 7.4 Accident and Incident Reporting and Investigation)

- **Functionally independent Internal audits** - Conducted by NR's STE or Internal Audit functions (see HSMS 7.3.60 Internal audit Programme)

Using these intelligence sources in combination provides a wider perspective upon which to review the risks and controls and to adjust monitoring activities as appropriate.

7.4.47   Key findings and trends are regularly reported to the Board, Executive Committee and senior management through channels such as the NSHERG meeting or the Safety, Health & Environment (SHE) Committee. This takes the form of papers sponsored by the relevant Functional Director or as part of a cross-functional paper prepared by the STE QHSE team.

7.4.48   Functional Directors are required to regularly review and confirm that the blend and depth of safety assurance activities is correct, taking into account the results of safety assurance activities and changing risk. This takes into account any revision to responsibilities/accountabilities as a result of organisational change.

7.4.49   NR's arrangements for auditing are further defined in NR Standards *NR/SP/ASR/036 Network Rail Assurance Framework* and *NR/L3/RVE/1006 Technical Audit Procedure for Rail Vehicles & On-Track Plant*.

7.4.50   The NR assurance framework aims to provide the Board and management groups with confidence in the levels of compliance with NR's HSMS, formal organisation standards, procedures, legislation, and contractual requirements. This Specification sets out to clearly and concisely explain the different levels of audit and the self-assurance processes within NR, and how to plan, carry out and review these effectively.

7.4.51   All corrective actions are tracked via the NR Safety Assurance Tool CMO which includes actions and recommendations from audits, accident investigations, ORR inspection reports, inspections and safety conversations.

7.4.52   Managing and tracking recommendations from within NR is well established and is detailed in NR Standards:

- *NR/L3/INV/3001/RIM301 Tracking of investigations, recommendations and local actions*

- *NR/L3/INV/3001/RIM302 Management of recommendations and local actions*

- *NR/L3/INV/3001/RIM117 Management of recommendations from ORR inspection plan reports*

7.5   Contractor Safety Performance

7.5.1   NR's contractors are required, through contract terms, to meet all relevant standards and to deliver specific levels of performance in identified areas. The delivery functions, with the support of the Heads of Disciplines, are responsible for implementing a programme of monitoring to confirm these standards are being met.

7.5.2   The results of contractor monitoring are formally reviewed on a regular basis during the life of each contract/project. At contract or project completion a review of the contractors performance is formally undertaken, led by the relevant Manager. Records of lessons learnt are retained to inform future decisions. For very strategic corporate suppliers these records are consolidated and fed back to the Director, RSSCO (Commercial Services). This information is reviewed on a regular basis through the supplier monitoring and management processes.

7.5.3   Where contractor performance falls below that which is acceptable the Contracts & Procurement Director, Route Services in conjunction with the appropriate functional director will agree specific and targeted interventions.

7.6   Employee Engagement

7.6.1   High engagement equates to high motivation and employees who are highly motivated consistently outperform those that are less motivated. Line managers play a crucial role in motivating their teams to work together to improve performance and to meet the organisations objectives and targets for designing, constructing, operating and maintaining a safe rail network.

7.6.2   Line managers are trained in techniques, and are provided with guidance, for improving motivation. The degree to which employees are motivated and therefore engaged is to be measured using a confidential survey, *Your Voice* that is run nationally every two years, supplemented with functionally-specific surveys every other year. The results of the survey will be discussed at Board level and cascaded to each line manager and their team. Line managers will use the results to undertake constructive team discussions that form the basis for action plans designed to improve team engagement and performance.

7.7   Reporting of safety concerns

7.7.1   Staff are encouraged to discuss any safety concerns they have with their line manager and to report these concerns using the company processes including Close Call and the Accident and Incident Reporting process. Where staff feel these channels are inappropriate, have been ineffective or feel unable to use them then there are confidential and anonymous ways to report.

Speak Out

7.7.2   *Speak Out* is a confidential reporting service run on NR's behalf by an independent company called InTouch. Reporters can leave a voicemail, speak to a professional call handler or report their concern via the *Speak Out* website. Reporters may also remain anonymous if they wish and are provided with a PIN number that they can call back and check on the status of the report.

7.7.3   *Speak Out* provides our employees and our delivery partners with a secure way to raise concerns happening in or affecting NR and to have these concerns investigated.

Confidential Incident Reporting & Analysis System - CIRAS

7.7.4   The *Confidential Incident Reporting and Analysis System (CIRAS)* is the confidential incident reporting system for the railway industry. *CIRAS* provides employees with a confidential and independent way for them to report safety-related concerns without fear of recrimination where they feel unable to report through normal organisation channels (e.g. through line management or other internal reporting procedures).

7.7.5   Safety concerns may be reported to *CIRAS* either by:

- Phone

- Text message

- Downloading and completing a form from the *CIRAS* website

- By writing to Freepost *CIRAS*

7.7.6   *CIRAS* directs those reports relevant to NR to the Corporate Investigation & Assurance Manager who arranges for their assignment to a lead manager to action. The detailed arrangements are defined in NR Standard *NR/SP/RSC/01702 Actions in response to Confidential Incident Reporting and Analysis System (CIRAS) reports*.

7.7.7   The lead managers' responses to the reports are reviewed each period by an internal review panel that performs a series of quality checks and confirms that, where reasonably practicable, action has been taken to address the reporters concerns. Following review and endorsement by the panel, the organisations response is provided to *CIRAS* who then inform the person who reported the original concern. The identity of the reporter is kept confidential by *CIRAS* at all times and not disclosed to NR or any other party.

7.7.8   The *CIRAS* organisation publishes a two-monthly newsletter known as The Reporter summarising some of the key reports that have been received by *CIRAS* and the responses provided by the relevant rail industry member(s). These newsletters are made available to NR employees via the organisation intranet.

7.7.9   The NSHERG meeting is provided with a report from the STE QHSE Team summarising the *CIRAS* reports received during the period and the number that have been responded to.

7.7.10 The Corporate Investigation & Assurance Manager is also a member of the *CIRAS* Committee – an industry committee which meets quarterly and provides overall governance for the system.

8   Learning

8.1   Overview

8.1.1   NR uses the knowledge derived from its measurement activities, combined with planned and targeted research, to review the effectiveness of its health and safety management arrangements and drive continual improvement. This deepens its understanding of risk and informs the development of systems and controls based on a philosophy of predict and prevent.

8.1.2   NR recognises the importance of learning with other Organisations which is made possible through industry groups such as OPSRAM. Learning is also achieved through making appropriate representation at formal liaison meetings including interface meetings on matters of proposed changes, statutory obligations etc. with others to discuss respective safety performance.

8.2   Review of Health and Safety Performance Indicators

8.2.1   Each group of health and safety performance indicators is reviewed by specific safety performance groups at appropriate levels of the organisation on a regular basis. This includes analysis of performance against targets and trends and is used to identify areas for further improvement (see HSMS 7.1 Health and Safety Performance Indicators).

8.3   Business Unit/Functional Review and Analysis of Findings from Assurance Activities

8.3.1   Functional (or Business Unit) Directors have established means for reviewing the findings of monitoring activities on an ongoing basis at all management levels to identify where corrective and/or preventative action is required to be taken. This includes sharing of good practice where appropriate.

8.3.2   Each quarter the HoRSHE/Head of S&SD collates and undertakes an analysis of the assurance findings for their Business Unit. The analysis seeks to draw insights from the findings and specifically in identifying weaknesses in risk controls.

8.3.3   Intelligence is drawn from the following level 1 assurance activities:

- *Safety conversations*
- Planned health and safety inspections
- *POS* site monitoring
- Route led accident and incident investigations
- Management self-assurance
- Line managers self-assurance
- The Route/IP safety, health and environment performance report

8.3.4   Additionally findings from level 2 and 3 assurance activity that are applicable to the Route/Region are reviewed, including those from:

- Internal audits
- Findings from ORRs inspection plan activities
- Enforcement action
- *RAIB* and other independent accident and incident investigations
- Functional audits
- RM3 evaluations
- Engineering verification
- Supplier assurance activity

8.3.5   The findings are subject to scrutiny, interpretation and analysis such that key findings and trends can be reported and acted upon.

8.4   Business Unit/Functional Review

8.4.1   Business Unit/Functional Directors are required to review and confirm that the blend and depth of safety assurance activities is correct; taking into account the results of safety assurance activities and changing risk. This takes into account any revision to responsibilities/accountabilities as a result of organisational change.

8.4.2   This review normally takes places at the Business Unit/Functional Business Assurance Committee.

8.4.3   Key findings and trends are regularly reported to the Board, Executive Committee and senior management through channels such as the NSHERG meeting or the Safety, Health & Environment (SHE) Committee. This takes the form of papers sponsored by the relevant Functional Director or as part of a cross-functional paper prepared by the STE QHSE Team.

8.4.4   The quarterly analysis of the assurance findings for their Business Unit provides a key input for this review.

8.4.5   Using these intelligence sources in combination provides a wider perspective upon which to review the risks and controls and to adjust monitoring activities as appropriate.

8.4.6   The findings from Functional Audit and Engineering Verification activities are discussed at the Cross-Functional Quarterly Safety Assurance Review Meeting chaired by the Head of Corporate Quality and attended by representatives from functional assurance teams. This quarterly meeting reviews the progress being made in delivering the Functional Audit plan. It additionally provides a forum to discuss the key findings from the following safety compliance activities and sources of safety intelligence:

- Internal Audits

- Functional Audits

- Engineering Verification

- Self-Assurance

- findings from ORRs Inspection Plan activities

- Enforcement Action

- *RAIB* & Industry Investigation Reports

- Inspections and *Safety Conversations*

- Supplier Assurance activity

- SHEP report

8.4.7   The aim is to identify common themes worthy of further analysis and/or intervention. NSHERG meeting are advised of any such themes within the report.

8.4.8   In order to confirm whether the actions taken in response to NCRs have been effective at reducing risk further reviews/audits are agreed. These are either conducted as a standalone follow-up activity or integrated into the remit for the next planned audit.

8.4.9   A review of closed audit actions is undertaken not less than annually to confirm if the actions have been sustained.

8.5   Risk Management Maturity Model (RM3)

8.5.1   NR uses the RM3 model as one method of analysing the results from level 2 audits. RM3 describes what excellent management capability looks like by means of a five-point maturity scale for key elements of NR's HSMS.

8.5.2   The results from level 2 audits of each Route are mapped onto their RM3 evaluation to give an annual view of the Routes maturity against the 26 elements of the RM3 model.

8.5.3   The annual evaluations form an input into the Route and Corporate Assurance Reviews.

8.6   Senior Management Review

8.6.1   Performance against the health and safety performance indicators is published four-weekly in the SHEP report and regularly reviewed at NR Board, Safety Health & Environment Committee (SHEC), Executive Management Group (ExecCom), NSHERG meeting and functional Executive Review Meetings (ERMs). Where performance falls short of target or other issues are identified, the reasons are discussed and, where appropriate, actions for improvement are agreed.

8.6.2   NR's selected Safety Performance Indicators include:

- Signals Passed at Danger (SPaDs)
- Work Force Reportable Accidents
- Competence Assessments delivered to plan
- OTM Speeding
- Defect Reports
- Safety Critical Product Failures
- Planned Audits versus Actual undertaken
- Safety Critical Communication observations
- Near Misses/close calls
- *TPWS* activations

8.6.3   The key findings from Internal Audits are reported to the SHE Committee by the Director, Risk & Internal Audit including the overall audit assessment rating. Each quarter a Safety Assurance Report is also provided to the NSHERG Meeting, Executive Committee and SHE Committee detailing:

   a. Progress being made in delivering the audits against the original audit programme

   b. Progress being made by management in implementing the actions to address audit findings

   c. Any actions that are overdue

8.6.4   Summaries of Functional Audit and Engineering Verification findings are reported to the NSHERG meeting.

8.6.5   The number of open NCRs is reported to the NSHERG meeting. Details of overdue NCRs are also highlighted to the NSHERG meeting. Any areas of concern are escalated to the Executive Committee or SHE Committee as appropriate.

8.7   Responding to Enforcement Action

8.7.1   NR is subject to enforcement action by a number of authorities, including the ORR, who can issue Improvement Notices or Prohibition Notices under the Health & Safety at Work Act and associated legislation. The HSE, the Environment Agency (EA), and other enforcing authorities such as Fire Authorities and Local Authorities can also undertake enforcement action, e.g. for a perceived breach of fire safety, local authority or environmental legislation.

8.7.2   NR's process for responding to enforcement action is detailed in NR Standard *NR/L3/INV/3001 Reporting and Investigation Manual*.

8.7.3   On receipt of an enforcement notice, the relevant Director or Head is required to nominate a Lead Manager. In the case of a notice that affects more than one function the Directors or Heads are required to agree on the appointment of a single Lead Manager.

8.7.4   The Lead Manager is required to consult with other functions in order to nominate mangers to be responsible for developing and implementing the actions to address the requirements of the notice. Where the issues relating to the notice have wider implications (e.g. on other areas not specified in the notice), the Lead Manager also arranges for actions appropriate to address these wider implications.

8.7.5   The STE function maintains a record of the issue of new notices and the progress of actions made to meet the requirements of the outstanding notices, including actions to address any wider implications of the notice.

8.7.6   The enforcement notices and progress with closure of actions are reviewed by the NSHERG meeting. As part of this review, the NSHERG meeting considers systemic issues and emerging trends, the actions required to address these and progress with the delivery of such actions.

8.7.7   On closure of an Improvement or Prohibition Notice, a paper is presented for endorsement by the NSHERG meeting, setting out what actions were taken to close the notice, confirmation that ORR have confirmed closure of the notice, how any wider national implications/lessons have been identified and actions implemented and, if the wider actions are not yet completed, arrangements for tracking these to conclusion.

8.8   Senior Management Review

8.8.1   NR has review mechanisms in place that afford the NR Board and management with an overview of safety performance.

8.8.2   The Board's Safety Health and Environment (SHE) Committee, and its Executive Committee, receive presentations and review papers that address accidents and incidents, progress with recommendations arising from investigations, and the learning themes from these. This management review is a critical part of the evaluation of the safe performance of the organisation and focuses on results and opportunities for improvement. This deepens the understanding of risk and

informs the development of systems and controls based on a philosophy of predict and prevent.

8.8.3   The NSHERG meeting similarly receive and review papers for the purpose of sharing concerns, lessons learned, and best practices. As an executive body, operating at a tactical level, the NSHERG meeting monitor, challenge and test the assumptions of the outcomes from accident and incident investigations (including the work of RAIB), and the National Recommendations Review Panel (NRRP).The NSHERG meeting also regularly review NR's major risks areas and discuss specific topics with a view to understanding both the current risk profile and its trajectory, so as to take the necessary decisions about actions and resources, and give appropriate direction to the business.

8.8.4   Cascade reporting across the organisation – using the Management Cascade process – allows for the dissemination of information such as health and safety performance, follow-up actions from audits and investigations, developments and good practice.

8.8.5   NR also encourages – through team meetings and briefings – the reporting of the results of investigations, organisation responses to confidential reports, local actions from self-assurance activity, and employee engagement scores.

8.9   Investigation Recommendations

8.9.1   The purpose of investigation into accidents/incidents is to determine the sequence of events, to identify the causal and any underlying factors and to recommend measures to prevent future re-occurrence. NR's processes for the reporting and investigation of accidents and incidents, including the management of recommendations and local actions (see HSMS 7.1 Health and Safety Performance Indicators), are included within *NR Standard **NR/L3/INV/3001 Reporting and Investigation Manual**.* The overarching NR Standard is ***NR/L2/INV/002 Accident and Incident Reporting and Investigation***.

8.9.2   Recommendations may be directed towards NR from the following sources:

- Judicial and HSE Inquiries

- ***RAIB*** Investigation Reports

- Industry Formal or Local Investigation Reports

- Coroners Inquests

8.9.3   The process for managing and tracking recommendations from these sources within NR is well established and is detailed in NR Standards ***NR/L3/INV/3001/RIM301 Tracking of investigations, recommendations and local actions*** and ***NR/L3/INV/3001/RIM302 Management of recommendations and local actions***.

8.9.4   Reports and recommendations arising from RAIB Investigations and NR led Formal Investigations are reviewed by the National Recommendations Review Panel (NRRP) which meets every four weeks. The NRRP may also be specially convened to review recommendations from Coroners Inquests or Public Inquiries.

8.9.5   NR led Local Investigation reports and industry member Local and Formal Investigation reports containing recommendations are reviewed by Route based Recommendations Review Panels (RRPs). Reports containing recommendations of national significance are referred to the NRRP following endorsement by the

RRP. Similarly NRRP may direct recommendations of a local nature to the relevant Route RRP.

8.9.6   At the NRRP or RRP each recommendation directed towards NR is considered in turn to determine whether it should be accepted or rejected.

8.9.7   Where a recommendation is accepted a lead manager is allocated, and a target timescale for completion of the recommendation is determined. Following the NRRP/Route RRP meeting the lead manager is advised of the recommendation and is required to confirm their acceptance. The lead manager is also required to identify the action(s) proposed in response to the recommendation including timescales - known as the Action Plan. In the case of RAIB Investigations the Action Plans are then ratified by the NSHERG meeting before the ORR are advised. Action Plans in response to recommendations from NR led Industry Formal Investigations classified as Serious Accidents are also ratified through submissions to the NSHERG meeting.

8.9.8   Where a recommendation is rejected the reasoning behind the rejection is captured.

8.9.9   Recommendations are sometimes accepted and closed if the action required to address the recommendation has already been undertaken and evidence of this can be provided within a detailed Closure Statement.

8.9.10   In the case of accepted recommendations, progress towards closure is tracked by Action Tracking Coordinators (for recommendations originating from NRRP), and by SHE Analysis & Reporting Specialists (for recommendations originating from Route RRPs). Lead Managers are requested to provide regular updates to the relevant Action Tracking Coordinator/SHE Analysis & Reporting Specialist.

8.9.11   An Annexe to the safety performance report - published each period - details the status of all recommendations from the RAIB Investigations and the status of overdue recommendations from NR led Formal Investigations and any national recommendations originating from RRPs.

8.9.12   When the actions taken to address a recommendation are considered to be complete the lead manager provides a Closure Statement to the RPC or SRS as appropriate. In the case of recommendations arising from RAIB, Formal and Local investigations and being managed at HQ level the Closure Statement must be endorsed by the lead managers Functional (or Business Unit) Director. Once the recommendation is closed the SMIS+ is updated and, in the case of RAIB recommendations, the ORR is informed.

8.9.13   If for any reason the original timescales cannot be met then the Lead Manager must inform the RPC or SRS as appropriate. In the case of recommendations tracked by NRRP the Lead Manager must prepare a Timescale Extension request and this must be signed by the Lead Managers Functional (or Business Unit) Director and further ratified by the NSHERG meeting. For recommendations tracked by Route RRPs then the request for a timescale extension is tabled at the RRP for discussion and agreement.

8.9.14   Further *Guidance for Recommendation Owners* is available on *Connect*.

8.9.15   In order to establish if the action(s) taken to address investigation recommendations have been effective in reducing risk, sample reviews/audits are undertaken as part of the Internal Audit programme. These review/audits are

undertaken in consultation with Subject Matter Experts and the Corporate Investigations and Assurance Manager, not less than annually since the recommendation was closed, to establish whether the action(s) taken has made a detectable difference to safety at both system and working level.

8.10   Evaluation of safety leadership

8.10.1   As part of the H&S management process, there will be regular evaluation of the maturity of safety leadership within NR, and its supply chain. This will be reported to the NR Board, and also form part of the RM3 return to ORR.

8.11   Review of the Health and Safety Management System

8.11.1   The Group STE Director is overall custodian of the HSMS. The CHSQO maintains regular liaison with ORR to exchange views regarding the contents of the system, NR's compliance with it, and to discuss any proposed major/substantial changes. The CHSQO gathers information gained from this and other sources such as audit reports and accident recommendations, and is responsible for reviewing the contents of the system in light of that information. Where necessary, the Group STE Director recommends appropriate HSMS revisions to the NSHERG meeting.

8.11.2   The CHSQO undertakes an on-going review of the contents of the HSMS over the five year period of validity of the Safety Authorisation. Where this review reveals the need for revisions, the CHSQO will prepare the necessary changes and, where necessary, submit them to the ORR for acceptance. The Risk Maturity Model (RM3) is one of the tools used to assist with the ongoing review of the HSMS.

8.11.3   Every five years the overall HSMS is subject to independent audit by an external auditor.

8.11.4   The SHE Committee meet formally at least four times a year to discuss: the follow up actions from previous meetings, and to review the HSMS inputs and outputs:

a.   HSMS inputs:

- Results of internal audits and evaluations of compliance with applicable legal requirements and with other requirements to which the organisation subscribes (this includes a review of the effectiveness of corrective and preventative actions in response to Internal audit findings and investigation recommendations)

- The results of participation and consultation

- Relevant communication(s) from external interested parties, including complaints

- The safety, health and wellbeing performance of the organisation

- The extent to which objectives have been met

- Status of incident investigations, corrective actions and preventive actions

- Follow-up actions from previous management reviews

- Changing circumstances, including developments in legal and other requirements related to safety, health and wellbeing

- Recommendations for improvement

b.   HSMS outputs:

- Safety, health and wellbeing performance

- ***Safety Vision*** and safety, health and wellbeing strategies, policies and objectives

- Resourcing requirements

- Any other elements activities related to the HSMS

- Relevant outputs from Management Review Meetings shall be made available for communication and consultation

8.12   ORR Inspection Plan Reports

8.12.1   Each year, ORR advises NR of its inspection plan, including details of the inspections to be undertaken. On completion of each inspection, the ORR provides NR's lead contact with a report, including any recommendations, at either national or local level.

8.12.2   NR's process for learning from ORR Inspection Reports, and tracking subsequent improvements, is defined in NR Standard ***NR/L3/INV/3002/RIM117 Management of recommendations from ORR inspection plan reports***.

8.12.3   On receipt of an inspection report, a nominated assurance co-ordinator (national or local) reviews the report to identify any recommendations. Where a recommendation is accepted, the assurance co-ordinator appoints a lead manager to progress the relevant actions.

8.12.4   The assurance co-ordinator tracks progress with the implementation of these actions and advises the ORR lead inspector of progress. Progress with the actions to address each recommendation is included in the periodic SHEP report.

8.12.5   When the actions to address a recommendation have been completed, the lead manager notifies the assurance co-ordinator who considers whether further assurance is required to verify closure. The assurance co-ordinator then advises the ORR lead inspector that the recommendation is closed.

8.12.6   Progress with closure of actions in respect of recommendations arising from ORR inspection reports are reviewed by The NSHERG Meeting each quarter.

8.13   Review of findings from the Internal Audit Programme

8.13.1   The key findings from Internal Audits are reported to the SHE Committee by the Director, Risk & Assurance including the overall audit assessment rating. Each quarter a Safety Assurance Report is also provided to the NSHERG Meeting, Executive Committee and SHE Committee detailing:

a.   Progress being made in delivering the audits against the original audit programme

b.   Progress being made by management in implementing the actions to address audit findings

c.   Any actions that are overdue

8.14   Review of Findings from Safety Assurance Activities

8.14.1   Summaries of Functional Audit and Engineering Verification findings are reported to the NSHERG meeting.

8.14.2   The number of open NCRs is reported to the NSHERG meeting. Details of overdue NCRs are also highlighted to the NSHERG meeting. Any areas of concern are escalated to the Executive Committee or SHE Committee as appropriate.

8.15   Deep Dive Reviews

8.15.1   Each review covers the strategies, policies, initiatives, risk exposure, targets and performance of NR in respect of each catastrophic risk theme.

8.15.2   These reviews are undertaken by the SHE Committee and are also considered at Executive Committees and the NSHERG meeting.

8.15.3   Each review provides a number of recommendations/actions to address the review findings and these are progressed in accordance with the organisations recommendations management process via the National Recommendations Review Panel (NRRP), recorded in NR's organisation-wide assurance database and are tracked through to completion.

8.15.4   Embedded within the industry SRM are a number of factors which benefit from being disaggregated to enable a more thorough discussion at NR's Board Safety Health & Environment (SHE) Committee.

8.15.5   The SHE Committee therefore considers in detail the six catastrophic risk themes aligned to train accidents within the industry *SRM*, at regular meetings during the course of the year:

- **Risk of a train collision**: The integrity of the signalling system in maintaining separation of trains

- **Risk of a train derailment**: The integrity of the track system in maintaining safe train movements

- **Risk of a train derailment or collision**: The integrity of the earthworks in maintaining safe train movements

- **Risk of a train derailment or collision**: The integrity of structures in maintaining safe train movements

- **Risk of a train derailment or collision with road vehicle**: The integrity of level crossings and the lineside in maintaining safe train movements

- **Risk of a train derailment or collision**: The integrity of operational practices in maintaining safe movement of trains

8.15.6   The purpose of each review is: to review the strategies, policies, initiatives, risk exposure, targets and performance of NR, and where appropriate of its partners, suppliers and contractors.

8.15.7   The outcome of each review is to reach:

- A common understanding of the risk and its causes

- A view on the level of risk reduction expected

- Agreement on the on-going monitoring of performance in this area

- Agreement on the future strategy for managing the risk

8.15.8   An in-depth review of each of the catastrophic risk themes is undertaken on an annual basis. The Committees consideration of each catastrophic risk theme is supported by a presentation (with supporting detail available if required).

8.15.9   The considerable and underpinning detail within each review (including an appropriate summary of the analysis) is presented to the Executive Committee and the SHE Committee for discussion. Any residual issues resulting from the discussion are normally be dealt with by a post-meeting note as opposed to a follow-up paper.

8.15.10   Recommendations and associated actions are processed via the National Recommendations Review Panel (NRRP), recorded in NR's organisation-wide assurance database, and are tracked through to completion.

8.16   Standards Review

8.16.1   Standards Steering Groups assess the requirement to create new standards in response to changes in legislation, or *RGS* or NR policy. They also review each relevant standard as part of a defined programme. The assessment/reviews determine the need for either standards creation, or amendment or withdrawal (including the associated costs, resources and broader implications), that are to be undertaken to a defined remit and following endorsement by the Standards & Controls Group (SCG).

8.16.2   NR will propose amendments to *RGSs* where, following review, it is identified as appropriate to deliver a safer or more cost effective railway.