KiwiRail

Safety Case

He aha te mea nui o te ao?
He tangata, he tangata, he tangata!

Approved by NZTA on 8 April 2013

Safe High Performance

Revision Table

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He tangata, he tangata, he tangata![1]

1 Who we are

1.1 Safety at KiwiRail

KiwiRail is committed to achieving a safe, high performance business, through its leadership model which emphasises the role of safety in reaching its challenging commercial aims. KiwiRail is committed to the vision of a zero harm workplace, and its Chief Executive has signed the zero harm pledge.

KiwiRail has a strong emphasis on safety, just as its predecessor organisations did. A substantial part of its annual budget is for safety activities, including activities not always recognised as safety activities, such as signalling and train control, and the level and scope of vehicle and infrastructure maintenance. Throughout the company staff take safety into account in what they do, both their and others' individual safety and the wider system or process safety. Policies and rules reinforce these individual actions.

Safety doesn't just happen. It relies on a comprehensive safety system, the extensive measures that KiwiRail takes to make sure its operations are run safely, which are described in this Safety Case. They involve policies, procedures, training, and common and specialised equipment. But at the end of the day, it all boils down to people, as the Maori proverb suggests. People make the railway safe or unsafe, whether they buy equipment and services, operate or maintain equipment, design equipment and processes, or direct or manage the work of others. Their understanding, skills, training, competence, and alertness at all levels are the fundamental defences against the risks of running a railway.

1.2 Rail Industry Background

The rail industry is complex and has a wide scope. It involves movement of large and heavy objects, often at speed, which means it faces a number of risks, both in terms of personal safety and process safety. Process safety is concerned with the safety of the overall system. Organisations typically deal with the risks of process safety through complicated systems with many layers of defence. If a combination of failures to these systems occurs, then the result can be a very serious, even catastrophic accident, affecting a large number of people. These events are rare on rail, which as an industry internationally (and in NZ) puts a lot of effort into avoiding them. As well, rail personnel risk the simpler "personal safety" types of events, such as slips, trips, and falls, usually only affecting one or a limited number of people. With KiwiRail's focus on freight, in both cases the people most at risk are employees, although where KiwiRail runs trains carrying passengers, they are also protected by its safety system. Contractors and the general public are also covered.

At an outcome level, personal safety and process safety can be much the same – if properly managed, then no-one is harmed, although process safety risks, if not managed properly, can have much worse outcomes. But the techniques and procedures required to ensure personal safety and process safety are different, and KiwiRail's safety organisation and

[1] "What is the most important thing in the world? It is people, it is people, it is people!"

approach reflects this. So does the relevant legislation. This Safety Case is written under the requirements of the Railways Act 2005, especially sections 29 and 30. This Act has process safety in mind, but as well covers personal safety, though it is focused on preventing serious injuries or worse. As well, KiwiRail is like any other employer subject to the Health and Safety in Employment Act 1992 which seeks to prevent all harm, however minor. The focus of the Health and Safety in Employment Act is more on personal safety.

It is difficult to separate the obligations under each of these Acts in terms of practical action, and one event may be covered by both Acts. So even though this Safety Case is a Railways Act document, it includes the full range of KiwiRail's safety management measures, including those under the Health and Safety in Employment Act.

KiwiRail is no longer the sole participant in the rail industry in NZ. It is part of a wider industry involving a number of operators and contractors. To reflect this, a number of common safety processes and high level standards are included in the National Rail System Standards, which have been developed by industry consultation. They apply to all in the rail industry, including KiwiRail, and are fundamental to the way we manage safety on KiwiRail. They are administered by KiwiRail and are published on its website.[2] They are referred to in this Safety Case and are part of KiwiRail's safety system. However, because they are industry wide standards, and publicly available, they are not described in detail in the Safety Case.

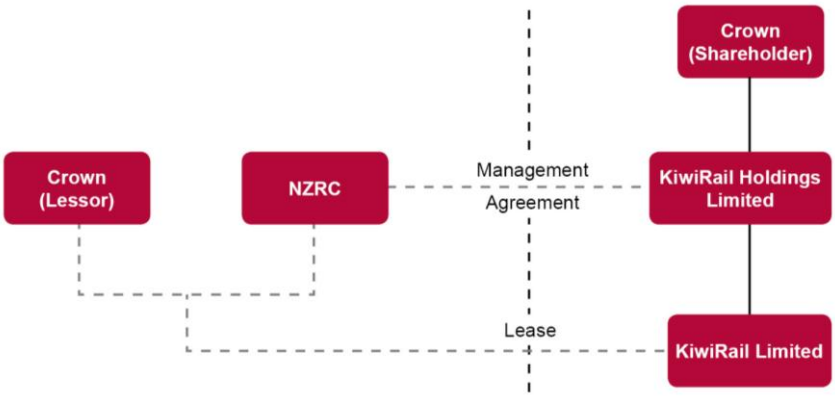
1.3 History

Today's rail industry has had a long history, 150 years in New Zealand. The rail network developed to its maximum extent in the 1950s, and has since reduced in length. Equipment and practices however continue to evolve. Levels of freight traffic are now higher than in the past, although the nature of the freight task has simplified on most lines. Trains have got longer and heavier, meaning that the growth in freight traffic has not necessarily been accompanied by a similar growth in train numbers and risks from more movement. In addition, risky practices like shunting have been much reduced. Passenger services are also much less intensive than in the past except in Auckland and Wellington.

The current rail operator KiwiRail is a descendent of the Railways Department, which ran the system until 1982, and more recently of the New Zealand Railways Corporation and Tranz Rail/Toll Rail. From 2003 to late 2008 the operating railway and the access and infrastructure side of the business were in separate ownership. Both are now owned and run by KiwiRail companies - the operating company by KiwiRail Limited and the access and infrastructure side of the business by KiwiRail Holdings Limited. The distinction between them is not important for this Safety Case – the companies are operated as a single unit. The rail licence is held by KiwiRail Holdings Ltd for the whole group.

NZRC no longer has a role in operating or controlling a railway so this Safety Case does not cover it. NZRC leases the land to KiwiRail Limited and as such has no direct involvement in the rail business being run on that land. All safety implications of running the railway are therefore KiwiRail's responsibility to manage.

Figure 1.0 - KiwiRail Structure



[2] http://www.kiwirail.co.nz/in-the-community/accessing-the-corridor/nrss-policies.html

1.4 Definitions

This Safety Case uses the following terms and abbreviations:

Abbreviation/Term	Definition
ACC	Accident Compensation Corporation
Act	The Railways Act 2005
Controlled Network	That part of the NRS controlled by the National Train Control Centre and signal boxes.
GWRC	Greater Wellington Regional Council
HSE	Health, Safety and Environment (Not the Health and Safety in Employment Act 1992)
I & E	Infrastructure and Engineering, a KiwiRail business unit
IRIS	Incident Reporting and Investigation System
JOP	Joint Operating Plan
KiwiRail	The trading name of the group of companies comprising KiwiRail Holdings Limited and KiwiRail Limited
MBIE	The Ministry of Business, Innovation, and Employment (includes the former Department of Labour)
Network Controller	The person authorising track occupancy and train movement. See the full definition in NRSS/1 (Definitions)
NRS	The National Rail System, the whole of the rail network owned or managed by KiwiRail
NRSS	National Rail System Standard
NZRC	New Zealand Railways Corporation
NZTA	New Zealand Transport Agency, the rail regulator
Operational NRS	Those KiwiRail lines actually used for traffic, see section 4.1. Does not include other companies' lines.
RMTU	Rail and Maritime Transport Union
ROC	Rail Operating Code
RORP	Rail Operating Rules and Procedures
Safety Case	This document
SHREC	KiwiRail Board's Safety, Human Resources, and Environment Committee

2 What is this document about?

2.1 Background

When rail operations were last unified, under TranzRail, there was a single safety system, approved under previous legislation. There were as well no separate metropolitan train operators then. Since then the legislation has changed and no longer requires approval of a detailed safety system (following the findings of the 2000 Ministerial Inquiry into Tranz Rail Occupational Safety and Health). Instead a Safety Case which summarises the key elements of the rail participant's safety system has to be approved before a rail licence can be issued, and must continue to be in existence and put into action if the licence is to remain valid.

This document is the KiwiRail Safety Case, and covers all of KiwiRail's rail activities and the arrangements it has in place to manage them safely. The Act requires that the safety case must contain a "statement or description" of a number of key safety factors. This Safety Case covers them all, and a table showing where the requirements of the Act are covered in the Safety Case is in Appendix E.

It is supported by KiwiRail's Rail Safety System which is described in more detail later in this Safety Case. A high level summary of the more detailed documents in the Safety System is in Appendix A.

It covers all of KiwiRail's rail and other activities that the Act applies to (including the application of the Health and Safety in Employment Act for those activities). This means that it does not cover the onboard and seagoing parts of the ferry business, which are covered by the Maritime Transport Act (so references to "KiwiRail" in the Safety Case do not include its maritime activities). However, rail based activities, including maintaining the track on the linkspan and on the ships, and loading and unloading of rail wagons to and from the ships, are covered by this Safety Case. The actual linkspans are owned by the respective ports.

Some KiwiRail owned rail heritage vehicles are leased to other parties, and the lessee is responsible for them under its own separate safety case, even if they run on the operational NRS, unless the parties have agreed differently. Maintenance and certification of KiwiRail owned rail vehicles operating on heritage sites that are not part of the operational NRS, are not covered by this Safety Case.

In addition, some KiwiRail staff belong to or assist heritage groups in their own time. The activities are carried out by these staff members in their own right, are not under the control of KiwiRail and are not covered by this Safety Case

2.2 Management and Review of this Safety Case

KiwiRail has appointed its General Manager, Safety and People as the Safety Liaison Officer (required by the Act). This GM is responsible for managing this document and keeping it up to date.

The GM Safety and People will also approve all Variations to this Safety Case before final submission to NZTA, although they will normally be prepared by managers holding the relevant responsibilities as set out in Appendix B. Variations are dealt with in section 8.

KiwiRail will prepare an annual Safety Performance Report as required by NZTA, following the guidelines issued by NZTA. As part of KiwiRail's preparation for this report, the National Standards and Risk Manager will review the content of this Safety Case and update it to take account of any variations approved since the last review. If this review identifies any changed circumstances requiring variations, these will be prepared and submitted to NZTA in the normal way.

2.3 Document Control

KiwiRail follows the processes set out in NRSS/8 (Guidelines for Document Control) for the control of its safety documents.

3 What we do

3.1 Two roles under the Act

The Railways Act sets out two main rail industry roles which require a licence, the rail operator and the access provider. KiwiRail does both roles and so this Safety Case covers both.

An access provider is a person who controls the use of a railway line by rail operators. KiwiRail carries out this role in a neutral way both for its own operations and in providing access to its tracks for other operators to run trains on. Examples include Veolia in Auckland, the Taieri Gorge Railway, and heritage operators. For these operators it also provides track, train control and signalling systems, and sometimes staff. However the responsibility for the safety aspects of operating the trains themselves rests with the other operator, not KiwiRail.

These third parties mainly access the Controlled Network, and KiwiRail performs its role towards them as Network Controller under the NRSSs, providing train control and signalling services to control track occupation and train movement.

Its other role is as a rail operator itself, that is, it runs its own passenger and freight trains over its tracks, and maintains its infrastructure. The train control and signalling system is also used by these trains. The passenger trains include those operated by KiwiRail on behalf of someone else, such as Greater Wellington's suburban trains. For all these trains the complete responsibility for running is with KiwiRail.

3.2 KiwiRail's Rail Activities

KiwiRail carries out:

- rail freight services
- rail passenger services
- rail network design, construction and maintenance (through its own staff and via contractors)
- third party rail operator access to the National Rail System and train control services for all rail vehicles on the National Rail System
- locomotive, rolling stock, and service vehicle design, build, procurement, and maintenance (through its own staff and contractors)
- Interisland passenger and freight services by ship (not covered by this Safety Case, except as noted in section 2.1).

3.3 KiwiRail Business Structure

KiwiRail is organised into a number of business units. Those business units are headed by a General Manager who reports to the Chief Executive. The Chief Executive reports to the KiwiRail Board, whose members are appointed by the Ministers of Finance and State Owned Enterprises. Those business units that are involved in rail and the rail activities they carry out are:

KiwiRail Freight

- operates rail freight services
- operates work trains
- provides hook and tow services to other operators
- maintains KiwiRail owned rail vehicles, locomotives, cars, and wagons, for freight and passenger
- buys these KiwiRail vehicles
- maintains some third party owned rail vehicles under contract.

KiwiRail Infrastructure & Engineering

- operates rail maintenance vehicles (e.g. hi-rail trucks)

- designs, develops and maintains KiwiRail's railway infrastructure and railway premises
- authorises and controls access to and movement on railway infrastructure;
- designs, procures and maintains infrastructure service vehicles, including rail and road-rail vehicles, and may overhaul, upgrade, or modify them.
- approves maintenance specifications for rail vehicles
- approves design standards for rail vehicles, major overhaul, modifications and new builds of rolling stock and locomotives
- provides codes and standards for design, construction, operation, and maintenance of rail vehicles and infrastructure.
- approves running rights for all rail vehicles and network access for other parties' rail vehicles
- may design, overhaul, upgrade, modify, and build rolling stock and locomotives.

KiwiRail Passenger

- operates the Wellington commuter rail services for GWRC
- may operate other rail services under contract
- operates long distance passenger services, scheduled and charter.

KiwiRail Corporate Functions

In addition to these operational business units, KiwiRail has a number of corporate functions under the control of two further GMs- the GM Corporate and Finance and the GM Safety and People. The Corporate functions:

- are responsible for the overall business direction and emphasis, and corporate structure, within KiwiRail
- are responsible for safety and people management policy and advice within KiwiRail, led by the GM People and Safety. This is further described in section 7.1
- are responsible for ensuring integration of safety across all business units and resolving interface problems between business units
- are responsible for property management
- set policies on risk management and other matters that have impact on safety
- approve budgets for all activities in KiwiRail
- allocate capital
- manage publicity and public safety education.

3.4 KiwiRail's Rail Assets and Infrastructure

KiwiRail owns or controls most of the assets and infrastructure it uses for its rail services.

KiwiRail owns or controls:

- the works, formation, track, and other physical structures forming the NRS
- the electric traction systems, signalling and train control systems used for the railway
- the buildings and structures forming railway premises used for the railway
- the land the NRS and railway premises is on, leased from NZRC
- the rail vehicles used to carry out its rail activities.

KiwiRail controls the movement of metropolitan passenger rail vehicles on the Operational National Rail System which are owned by Auckland Council/Auckland Transport, Greater Wellington Regional Council. The Taieri Gorge Railway, and heritage operators. KiwiRail also currently maintains Auckland Transport's trains, and operates and maintains Greater Wellington's ones. The Auckland electric multiple units will not be maintained by KiwiRail.

KiwiRail does not own or control:

- Auckland Council or Auckland Transport assets within the Auckland metro rail area, being:
  - Britomart
  - passenger stations generally (including the platform structures)
  - pedestrian footbridges and underpasses (at-grade level crossings are owned and controlled by KiwiRail).

- Wiri electric multiple unit depot, apart from initial construction
- Greater Wellington Regional Council assets in the Wellington metro rail area, being:
  - above platform assets, except those at the Wellington Railway Station which are owned by KiwiRail. Platforms remain KiwiRail's responsibility
  - pedestrian footbridges and underpasses (at-grade level crossings are owned and controlled by KiwiRail)
  - the electric multiple unit maintenance building, wheel lathe building and train wash facilities on the western sides of the main lines. However KiwiRail has retained ownership of the track, traction and signalling system within and leading up to these buildings, and controls the activities in them, including train movement, through its maintenance contract
- Assets on third party landholdings:
  - Railway track and structures on private sidings and ports except as set out in section 11.3
- Third party rolling stock (though as access provider and Network Controller KiwiRail is responsible for granting access and controlling movement of this rolling stock on the NRS).

4 Where do we operate?

4.1 Geographical scope

The NRS is the whole railway network, including yards and sidings. On part of this network, known as the Controlled Network, KiwiRail controls occupancy and movement of rail vehicles, through its National Train Control Centre and signal boxes. This is principally the main operating lines. This Safety Case covers KiwiRail's roles as railway operator and access provider on a network that is wider than the Controlled Network, but less than the whole NRS (because it does not cover lines that are not used, except in the very limited way set out in section 12.6).

KiwiRail runs trains over 3477 km of open and operational railway, all part of the NRS. There are 1990 km in the North Island, and 1487 km in the South Island. Details are in Appendix D, and the network is shown generally on the maps in figure 2.0 .The Safety Case applies to KiwiRail as operator on these lines only, and to adjacent yards and sidings, described together in this Safety Case as the "operational NRS".

KiwiRail's role as access provider also applies to the operational NRS. But it also has a limited additional role in controlling access to disused or mothballed rail routes where the track remains, some 430 km of the NRS. This role is described in section 12. Apart from that section, this Safety Case applies only to the operational NRS.

263 km of the operational NRS is double track (or treble – one short section in Wellington), and the rest single track. The double track sections are in the Auckland commuter area, Swanson to Pukekohe, including branches (90 km); between Pukekohe and Hamilton (74 km); Wellington commuter area (81 km including treble track) and Christchurch (19 km).[3]

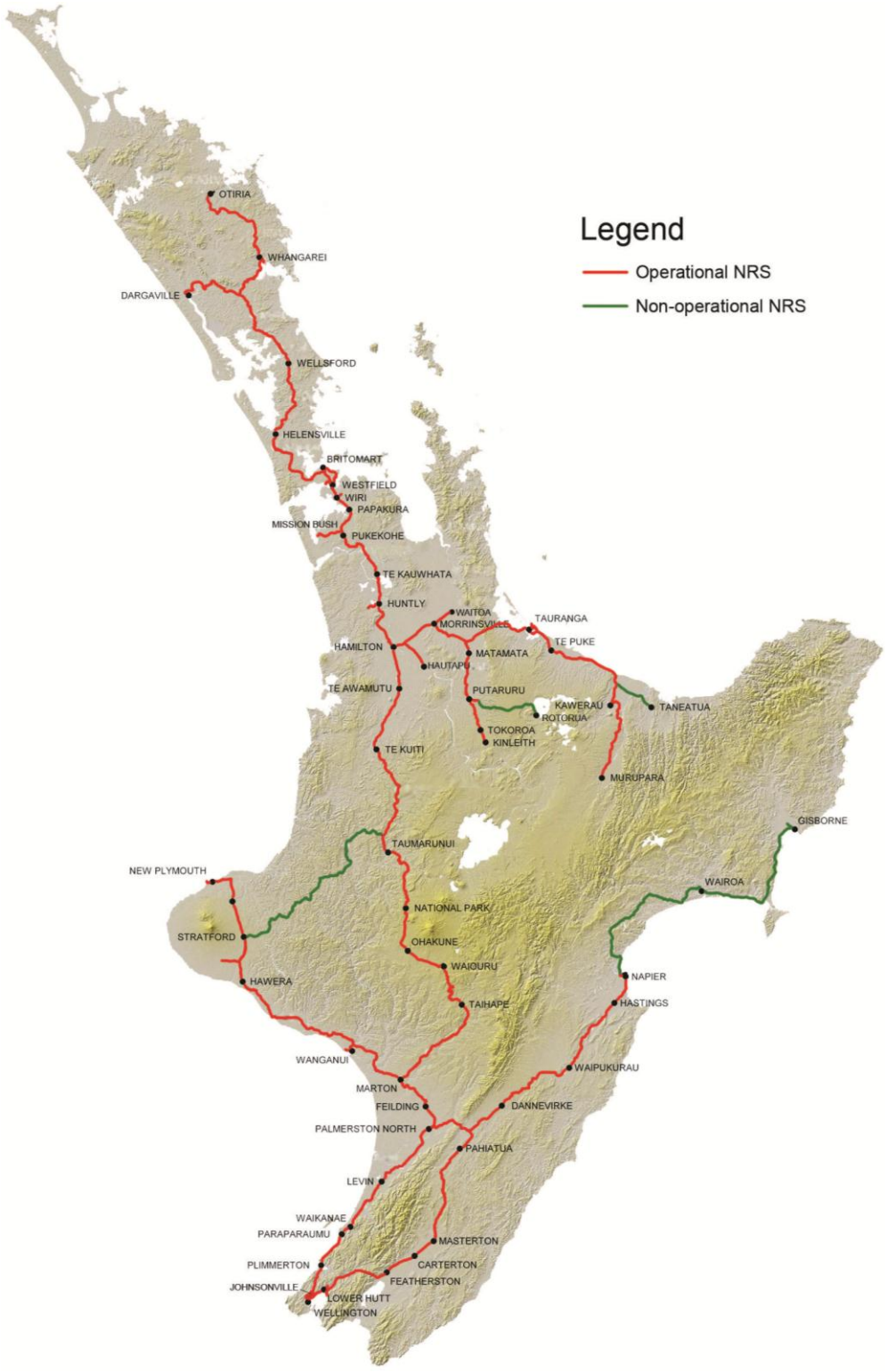
All lines are on an exclusive corridor of land, apart from level crossings. Most of the land in the corridor is owned by the Crown through NZRC and leased to KiwiRail. The Act gives KiwiRail rights to control who comes and goes on the corridor except as required under other Acts. All lines are 1068mm track gauge, lightly built (though in many places significantly upgraded), with variable track quality.

All lines are maintained and operated to appropriate safety standards, as provided in the safety system and this Safety Case, but the maintenance and operating conditions for each line differ, in general according to how heavy the traffic is. Thus lines are maintained to different standards, and the speed of operation is adjusted accordingly. Most lines have 50 kg/m rail, or 91lb/yd, on timber or concrete sleepers. Rolling stock, on the other hand, is maintained to a common standard as most units can be operated on most of the system. An exception is certain high containers which are restricted in where they can run.

Beyond the Controlled Network are facilities operated by KiwiRail, such as marshalling yards, freight handling areas, maintenance depots and workshops, and other sidings. This is known as operator controlled territory, but the distinction is not important for this Safety Case: it covers all operational KiwiRail track. KiwiRail is thus responsible for all its own sidings, and all its railway premises. Its responsibility for private sidings is covered in section 11.3.

[3] These do not add to the 263km total because of a rounding error.

Figure 2.0 - National Rail System




Legend
Operational NRS
Non-operational NRS
PICTON
BLENHEIM
NGAKAWAU
WESTPORT
REEFTON
IKAMATUA
RAPAHOE
GREYMOUTH
KAIKOURA
HOKITIKA
OTIRA
ARTHURS PASS
WAIPARA
SPRINGFIELD
RANGIORA
DARFIELD
CHRISTCHURCH
ROLLESTON
LYTTELTON
ASHBURTON
TEMUKA
TIMARU
OAMARU
PALMERSTON
PORT CHALMERS
DUNEDIN
OHAI
WAIRIO
GORE
MILTON
MATAURA
BALCLUTHA
EDENDALE
INVERCARGILL
BLUFF

4.2 Rolling stock and rail buildings

KiwiRail is responsible for the design, build, maintenance and operation of its own rolling stock and locomotives (even though part or all of the actual design and build may be done by others). In some circumstances it is responsible for the operation and maintenance of other parties' vehicles, such as those belonging to GWRC, and for making sure they are fit for service on the NRS.

It is responsible for approving under its safety case some vehicles that run on its network that are owned and operated by third parties, such as contractors. However, vehicles belonging to other rail operators are approved and certified through the procedures in NRSS/6 (Engineering Interoperability Standards) and NRSS/11(Heritage Vehicle and Train Management) under those rail operators' safety cases. As access provider, KiwiRail limits its involvement to checking that such certifications have been given, by acceptable certifiers, and accepting the vehicle for running. In the case of major new train fleet purchases, KiwiRail discusses network running requirements more extensively with the owners.

KiwiRail has operational buildings to support its freight operation, at yards and terminals. As well, it provides maintenance facilities at the main points in the network, and a major "backshop" construction, repair, and heavy maintenance facility at Woburn in Lower Hutt. It now only has a few passenger stations on its scheduled long-distance passenger train routes, and some passenger rolling stock maintenance depots. Where land is leased to third parties, activities on that land are not controlled by KiwiRail and are not covered by this Safety Case, except for private sidings as set out in sections 9.2 and 11.3.

4.3 Principal Operating Parameters

These are the key basic characteristics that set limits for operation on the railway. Equipment and operations must be kept within them to ensure the railway operations are safe. They are also interactive; for example gauge, load, clearances, and speed all impact on each other. They are dealt with in detail in NRSS/6 (Engineering Interoperability Standards) and subject to the change process for the NRSSs. The main examples are:

- track gauge
- load limit (including axle load) for rail vehicles
- maximum speeds
- clearances
- height of centre of gravity
- train brake characteristics and required stopping distances
- wheel profiles and other characteristics.

5 Who do we cover?

5.1 All individuals covered by the Act

The primary duty under the Railways Act is to take all practicable steps to make sure KiwiRail's rail activities do not cause death or serious injury to individuals. This means that as well as employees, the Act covers (and this Safety Case covers) passengers, agents and contractors, volunteers, and members of the public impacted by rail activities, on the rail corridor, regardless of whether they are authorised to be there. As the Maori proverb quoted at the beginning of this Safety Case suggests, its focus is people.

The Act sets out what is involved with "rail activities". These are essentially operating rail vehicles and providing and maintaining rail infrastructure or premises, which take place largely within the rail corridor. KiwiRail's responsibility is limited to these "rail activities", so it is responsible only for what goes on in the corridor, including any direct impacts of those operations on people near the corridor.

As an employer KiwiRail has the same responsibilities under the Health and Safety in Employment Act for the safety of its employees, agents, contractors and visitors as all other employers. The duties under the Railways Act are in addition to those, and are specific to harm that may be caused by KiwiRail's rail activities.

Where a rail licence holder employs agents and contractors (and volunteers) to do work covered by its safety case, the Act requires it to take all reasonable steps to make sure the person carries out that work in accordance with the licence, safety system, safety case and relevant rules. In practice this means that KiwiRail needs to make sure its contractors have copies of the safety system processes and practices applying to their work, and understand them. In some cases it may also mean that KiwiRail protection staff will need to be used to control the contractor's access to the operational parts of the railway.

In addition KiwiRail's safety duties cover the safety of the passengers it carries on trains it operates, and the safety of the network, train control, and signalling for passengers as they affect other organisation's trains.

KiwiRail also recognises its obligations to the wider public, for example if its assets or operations injure people outside the rail boundary (such as in an accident), or even within its boundaries.

People have to have KiwiRail's authority to be on railway land; without it they are trespassing. Unauthorised persons are however covered by the wide language of the Act, and KiwiRail has to take all practicable steps to avoid them dying or being seriously injured. The steps KiwiRail takes to manage this risk include:

- the Act forbidding unauthorised access
- the procedures to enforce that, including the system of issuing permits to enter.
- putting up warning signs at appropriate locations
- fencing of high risk areas (where community or public funding is available)
- formalising and protecting appropriate places to cross the tracks
- financial and practical support of the Chris Cairns Foundation's work
- publicity.

The same steps, reinforced with further provisions in the Act putting duties on the public not to damage rail assets, also defend KiwiRail against the risks to it from route crime, such as vandalism, graffiti, putting obstacles on the track, and interference with the track, signals, vehicles and loads.

Level crossings are a special case where the law provides that responsibility largely lies with the road user. KiwiRail however does take practicable steps in conjunction with road controlling authorities to give appropriate warning (passive or active) at level crossings. Rail operators can assume (for purposes of setting speed) that the railway will be clear of persons, animals, and vehicles; and that rail operators are not negligent for making that assumption. The work of the Chris Cairns Foundation includes raising level crossing safety awareness.

6 What are our safety policies?

6.1 Introduction

KiwiRail's goal is to be a safe, high performance business in which everyone comes to work safe and goes home safe. It has long been conscious of the overriding need for safety in its operations, for all people, not just workers. Safety is fundamental and woven into all parts of its business. Rule No 1 in the railway rule book has for many decades been, and remains:

> "The first and most important duty of all Rail Personnel is to provide for the safety of Rail Personnel and the public."

KiwiRail recognises that responsibility for providing a safe environment at KiwiRail, under both the Act and the Health and Safety in Employment Act, rests with the KiwiRail senior management and Board. However, all levels in the organisation have a role to play in keeping KiwiRail safe, and complying with its obligations. This includes the personal responsibility of staff to look after their own safety.

Railways internationally and locally over many years have developed and improved their safety performance in the light of experience with accidents, incidents, and other factors. These learnings have been retained and built into a comprehensive safety system, through which the current company shares the expertise and experience of the past. To that it has added its own modern approaches.

This Safety System is a set of policies, systems, standards, codes and processes which support this Safety Case and provide staff with the tools to carry out their work safely. It consists of:

- the policies and systems set out in this section
- the whole-of-rail-industry documentation, the NRSSs
- the documents set out in Appendix A
- the other documents, systems and processes referred to in this Safety Case.

This section sets out at a high level, the Safety and Health policies and systems by which KiwiRail manages safety (apart from those aspects covered by the NRSSs and the details of other codes and standards elsewhere in the Safety Case).

6.2 Policies

KiwiRail Safety Policy Framework

The KiwiRail Board is responsible for setting corporate policies, including the Safety and Health Policy.

Through the policy, the Board recognises the particular importance to KiwiRail of safety given the safety critical nature of many of its activities, in terms of both process and personal safety. The Board is committed to making sure its workplaces and work practices are safe; maintaining oversight of safety through its Safety, Human Resources and Environment Committee; and making sure adequate resources are available to management to carry out the safety programme. The Board's Audit, Finance and Risk Committee oversees risk performance and monitoring, including safety risks.

The Chief Executive and the Executive Team are committed to the protection of KiwiRail staff and others affected by its activities from accidental injury and work-related ill health. The Chief Executive makes sure all safety personnel in the business have adequate training.

Business unit General Managers are responsible for ensuring that safety is adequately considered in design and for managing the safe conduct of operations and change in their respective areas of operation.

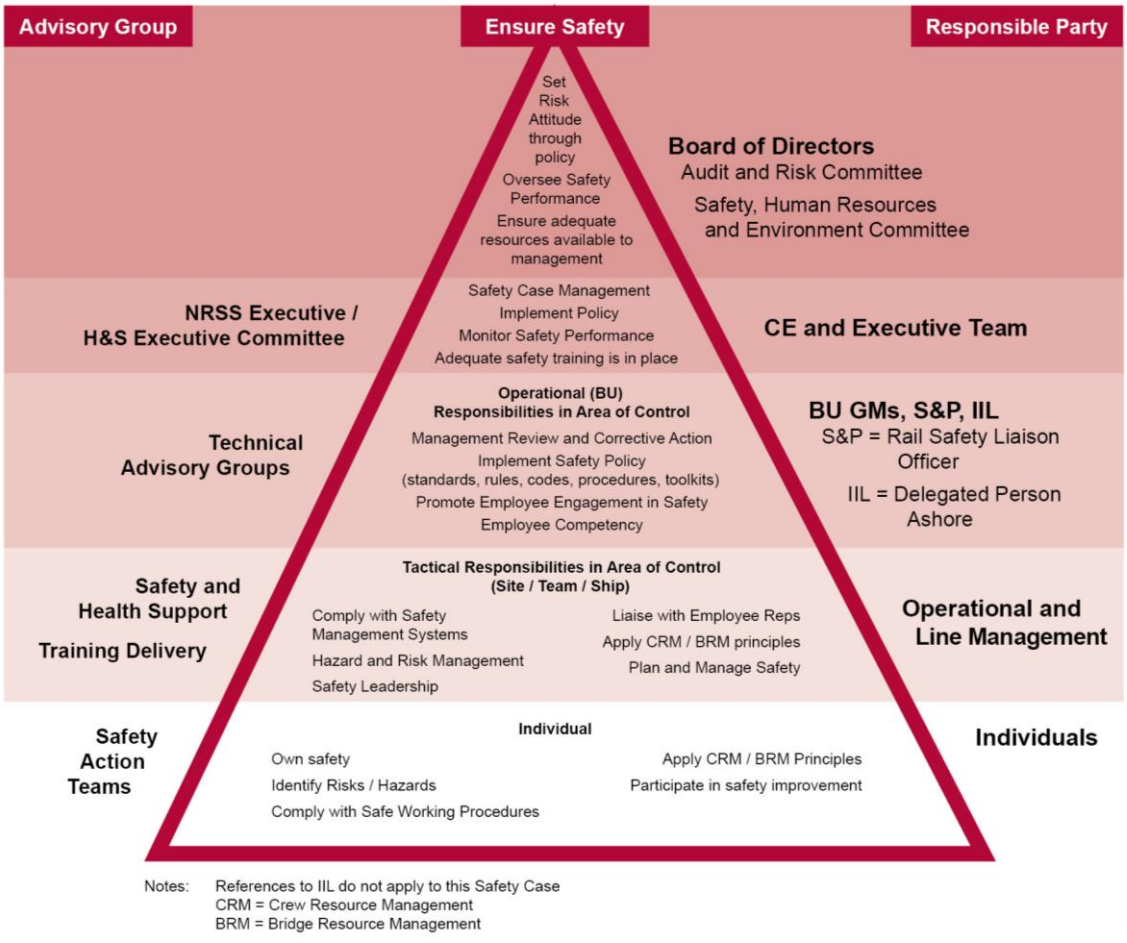
On a particular site, the designated person in charge of each site is responsible for ensuring that activities at that workplace are carried out safely and all people on site are aware of safety critical risks and safety procedures.

Individuals: everyone (employees, contractors, visitors) on KiwiRail worksites has responsibility for his or her own safe behaviour, for actively encouraging the safe behaviour of others, and for stepping in when observing unsafe behaviour in others. In managing its business KiwiRail is committed to:

- develop a culture of learning
- improve its skills and abilities in safety management
- involve its employees in health and safety
- consult with unions and other employee representatives
- keep safety and health activities and actions open and transparent
- strive to achieve or exceed its safety targets and goals
- regularly review and monitor safe work practice and performance
- make sure employees and contractors understand and follow the KiwiRail safety system when doing KiwiRail rail work, and monitor performance against the requirements of that safety system
- make sure workplace occurrences are recorded and reported
- actively manage the rehabilitation of its employees.

The following diagram (taken from the policy) illustrates the responsibility for safety from the individual employee all the way up to the board. Responsible individuals or teams are shown on the right-hand side of the triangle at each level while advisory groups used to develop action plans, rules, procedures, policies etc are shown on the left-hand side.

Figure 3.0 - Safety responsibilities in KiwiRail



KiwiRail is committed to striving for zero harm and the Chief Executive has expressed his and KiwiRail's commitment to safety through signing the Business Leaders' Forum Zero Harm Workplaces Pledge.

Other Safety Policies

In addition to the Safety and Health Policy the KiwiRail Board has adopted specific policies (relevant to safety) on:

- Drugs and Alcohol
- Fitness for Work
- Risk Management
- Corporate Responsibility.

6.3 Simple messages

KiwiRail recognises that complex rules, and many of them, may not be the best approach to safety. It has set out to try to make the safety message simple and straightforward, sorting out the critical rules and actions. Recent actions have included:

- drafting a list of "life saving rules" – how to stay safe when the risk of serious harm is greatest
- focussing on the indicators that help understanding of future events ("leading indicators") rather than on past events ("lagging indicators")
- a new safety behaviour leadership programme, "LeadSAFE" and "TalkSAFE". Managers engage with staff in the field to talk about their work and how hazards can be better identified and managed by all
- the leadership model for the Safe High Performance Culture includes safety actions
- introduction at Hutt Workshops and Interislander of a Safe Spine Programme.

6.4 Database of safety tools

As well as the Safety and Health policy KiwiRail has a set of procedures, guidelines, and forms on its "Intranet" electronic database. These include:

- general health & safety rules (including protocols for site visitors, drugs and alcohol)
- safety committees and action teams
- hazards (including the use of personal protective equipment and high visibility clothing)
- accidents and incidents – including reporting, investigation and corrective action
- health & safety training
- emergency procedures
- procedures for HSE audit, site safety inspections and safety observations
- injury management including ACC notification and rehabilitation
- "Fitness for Work" including training, review, fatigue management, health and wellbeing
- job planning and implementation, including:
    - hazards identification & mitigation
    - rail corridor protection
    - management of contractors and site visitors,

6.5 Employee Engagement

Employee Agreements

Safety commitments are written into our collective agreement with the Rail and Maritime Transport Union. Both parties have committed to work together in good faith to achieve zero workplace accidents. As well, the agreement covers rehabilitation and drugs, medication, and alcohol.

KiwiRail's standard individual employment agreement (for staff not covered by the collective agreement) covers these points, and reinforces the importance of safety in our workplace. As well, management's performance in safety critical roles is measured against safety Key Performance Indicators.

Consultation with Employees and Representatives

KiwiRail consults employees and their representatives through a series of committees at different levels. At the site or local level are the Health and Safety Action Teams, which include RMTU representatives. Technical issues from these teams can be referred to the next levels (below) or to Technical Committees (see section 7.2) for action and resolution.

Each business unit has an Industrial Council, with union and management members from the operational or technical disciplines. These councils consult on safety, work practices (including new practices and technologies) and organisational change issues and can deal with issues referred by the Action Teams.

High level issues are discussed at the H&S Executive Committee. This is made up of business unit executive management, senior KiwiRail safety management, and RMTU National Office personnel. It helps improve safety, health and environmental performance through:

- sharing information and initiatives, and reviewing trends
- reviewing and developing strategies for concerns that have been escalated to the HSE Executive from safety and industrial meetings
- raising and discussing issues of strategic importance, including regulatory issues and where appropriate, agreeing an approach to the management of these issues
- liaising with the National Rail System Standards Executive (NRSS-E) and other safety committees on issues coming from the interaction of different operators.

Change Management and Consultation with Employee Representatives

Changes to the organisation structure, equipment, personnel, rules, standards and procedures are a normal part of managing KiwiRail, like any other business. Some of these changes may affect the risks KiwiRail faces, and the GM Safety and People makes sure the risks of proposed changes are assessed, put on a register, and mitigated.

KiwiRail consults with employee representatives where they are likely to be affected by a proposed change to its Rail Safety System such as changes to work practices, codes and procedures. It does this by:

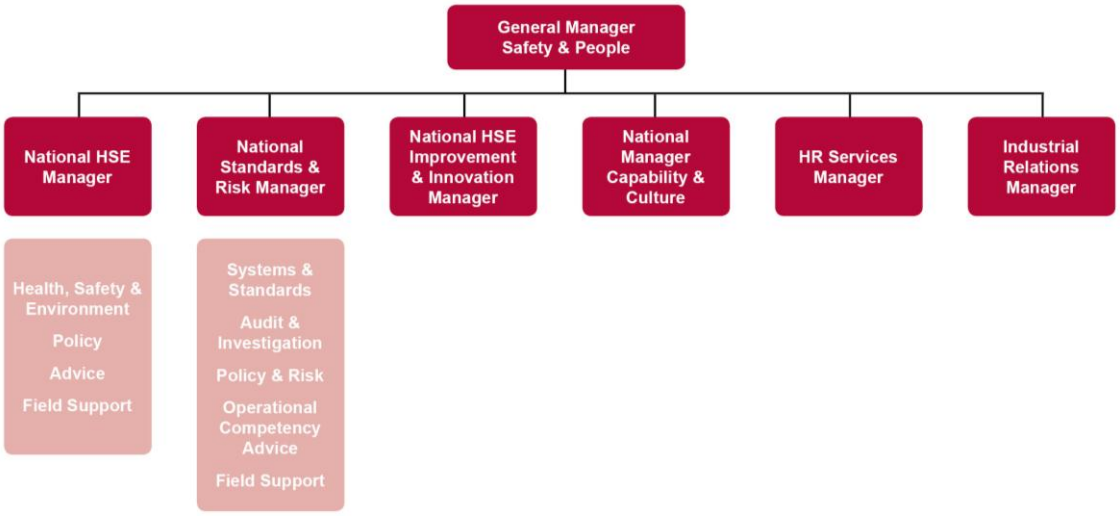
- consulting with the RMTU through the committees noted in the section above, and by direct consultation by management with staff representatives on rail safety, technical and operational matters. There can also be direct consultation with RMTU management on a case by case basis, for example on this Safety Case
- The KiwiRail - RMTU collective agreement, which covers consultation on employment matters, including introducing new and improved work methods, arrangements, processes, equipment and technology
- consulting with other rail participants where proposed changes could affect their rail personnel. Those rail participants are responsible for consulting as appropriate with their staff's representatives, including unions, and passing any comments and recommendations back to KiwiRail
- giving special briefings to employees as required, including those who are not part of a collective agreement.

7 What we do to achieve our policies

7.1 KiwiRail's Safety Structure and Responsibilities

KiwiRail's Safety and People management structure reflects the different techniques and procedures required to ensure personal safety and process safety.

Figure 4.0 - Safety and People Structure



All safety advisory and policy work in KiwiRail is focussed on this group. Business units remain responsible for the safety of their staff and operations, based on input from advisors in the Safety and People team.

The principal position is the GM Safety and People, who is responsible for all safety (including this Safety Case), human resources, organisational development, training and industrial policy and advice for the KiwiRail group.

Included in his direct reports are 3 positions directly related to safety:

- National Standards and Risk Manager, whose focus is process safety, particularly rail operations, and the Railways Act
- National Health, Safety and Environment Manager, whose focus is personal safety and the Health and Safety in Employment Act
- National Improvement and Innovation Manager, whose focus is on KiwiRail learning from international work, described more fully in section 8.

A further direct report, with some safety responsibilities, is the National Manager Capability and Culture.

Roles and committee structures in KiwiRail with particular safety responsibilities are shown in Appendix B. These responsibilities are also set out in the position descriptions and Terms of Reference of the various roles and committees. When away from duty these people have to get a suitable person to deputise for them, or keep management control by remote communications like phone, text and email.

7.2 Technical Committees

As noted in section 1.1, in industries like rail, where a number of activities come together to produce the product or service, considerable effort goes into preventing major failures, which can be catastrophic in their outcome. While minor failures by

themselves may have no safety impact, if they are not corrected, they can link with other failures to produce a serious accident. Each action to avoid a minor failure is a defence against them combining to produce such an accident.

Much of the work of the engineering and operating functions of KiwiRail is to maintain these defences, and protect against failure. The managers of the technical departments are responsible for this work, but these managers are supported by a number of technical committees, one for each overall technical area. These committees have an important role in safety by bringing together a number of experts and subject specialists, who can give different perspectives on safety issues, to discuss issues and find solutions. This means the manager is better able to make safe decisions, and so KiwiRail better manages its risks.

The committees for each area look at how codes, standards and similar instructions are working, whether they need to be changed, whether new equipment and procedures are safe, what can be learnt from things that have gone wrong, and whether rail workers (in that technical area) are properly trained and have the right knowledge and skills to run the railway safely. They also overview the quality of the overall work done. A full list of the committees and their functions is in Appendix C.

Operating and engineering a railway are complex activities. Work in one area can have an influence on another. The result can affect safety, so coordination of the committees is necessary. As well, there are a number of specific safety related issues that go across more than one technical committee, such as how the wheel and rail influence each other, and how track, speed, and signals are related. So that possible safety gaps are covered, for these functions there is an overall committee, the I & E Standards Committee. It also makes decisions on issues about codes, standards, and rules that do not fit in the scope of a single technical committee, and deals with disputes between committees.

7.3 Accident and Incident Management

Recording and Reporting - IRIS

The Act requires KiwiRail to notify NZTA of all occurrences associated with rail vehicle operation, infrastructure or premises. An occurrence is either

- an accident, which causes death, serious injury, or significant property damage; or
- an incident, which puts (or could have put) a person at risk of death or serious injury, or property at risk of significant damage, but was not an accident.

KiwiRail also complies with the Health and Safety in Employment Act and Electricity Act 1992 recording and reporting requirements.

KiwiRail manages these requirements through its incident logging and reporting system “IRIS”. IRIS records and manages all reported HSE occurrences, and notifies affected rail participants and other interested parties (such as NZTA). Occurrences include:

- Lost Time Injuries, Medical Treatment Injuries, and First Aid Treatment Injuries
- close calls (near misses)
- environmental Incidents
- property/equipment damage
- hazards/potential incidents
- motor vehicle incidents.

IRIS is also used to track and monitor actions arising from all investigations and audits (both internal and external) and gives reports for management review. Investigations are given to managers following a severity level classification. Those with a Level 1 classification are investigated by trained lead investigators from within KiwiRail.

KiwiRail also follows the reporting procedures in NRSS/5 (Occurrence Management).

Linkage to Incident and Crisis Management Plans

Major occurrences, including those which cause widespread disruption to train services, may trigger the KiwiRail business unit Incident Management Plans and/or the KiwiRail Group Joint Crisis Management Plan (see NRSS/10, Crisis Management). The business unit plans are maintained by business units, and the GM Safety and People keeps the group plan up to date.

7.4 Safety Reporting

Scorecard

KiwiRail has developed a high-level HSE Scorecard which shows 6 major indicators that are representative of KiwiRail's overall safety performance. This will be widely available to staff on the KiwiRail intranet from April 2013. The indicators are:

Leading indicators

- TalkSAFE – a measure of senior management safety conversations held. This is an indicator that KiwiRail is leading safety by example from the top
- Current Competency – the percentage of operating staff whose operation certifications and safety observations are up to date, which indicates that staff are trained to work safely
- Audit Score – The percentage of planned HSE audits that have been done, an indicator that KiwiRail is testing its key processes, and that controls are in place and working
- Enviromark progress – percentage of plan implemented, indicating progress with environmental and sustainability improvements. This is planned to be included in 2013.

Lagging indicators

- Fatal Risk Events – number of selected events with potential fatal or serious harm results.
- Total injuries – Number of Lost time and Medical treatment injuries.

KiwiRail Safety Key Performance Indicators

KiwiRail measures and reports on its safety performance against a number of key performance indicators (KPI). These indicators are designed to monitor risk, including whether the controls used to reduce risk remain stable and capable of doing that.

KiwiRail measures and reports key occurrences to its Board in addition to the scorecard measures.

Examples include:

- **Operational,** including running train derailments, terminal collisions, and signals passed at danger caused by driver error ("SPAD A")
- **Infrastructure and Engineering,** including track occupancy occurrences, and collisions and near collisions with maintenance staff
- **Public Safety,** including level crossing collisions, and rail vehicle collisions on the Controlled Network.

KiwiRail's executive get reports each month on the status of significant audit conditions and significant recommendations about incidents, including those from the Transport Accident Investigation Commission.

KiwiRail continues to work to develop and improve the indicators, especially lead indicators. It also reports on safety, including key indicators, in its Annual Report.

7.5 Promotion of Safety

KiwiRail actively promotes staff and public safety in many ways. Its policies, including the Safety and Health Policy are widely distributed and displayed in workplaces. The Scorecard, TalkSAFE, Life Saving Rules, and Zero Harm Pledge, will also be widely distributed.

The weekly internal newsletter *Express* is frequently used to report on safety policies, issues, and achievements, both for KiwiRail and overseas railways. Another internal newsletter, *RailSAFE*, is only about safety and is distributed every two months to all staff in I & E. It lists all lost time and more severe injuries, with a brief description. It is intended to widen the focus and audience for this newsletter to all KiwiRail staff. Safety issues and results are also prominently covered in KiwiRail's Annual Report.

KiwiRail is developing a consistent safety brand, messages and channels for promoting safety across the whole organisation.

Through its support of the Chris Cairns Foundation it promotes public safety, especially level crossing safety, passenger safety, and trespass on the rail corridor. The Foundation runs the www.railsafety.co.nz website.

7.6 Consultation

Consultation with staff is discussed in section 6.5 above.

In addition, KiwiRail consults with public organisations on public safety issues like unauthorised access to the track, and with communities when significant work is planned, and with roading authorities where level crossing protection is being changed.

7.7 Identifying safety critical tasks.

KiwiRail business unit management is responsible for identifying safety critical tasks, as set out in their position descriptions and in Appendix B.

Safety critical tasks are identified through the process set out in NRSS/3 (Health Assessment of Rail Safety Workers, Diagram 3). In NRSS/3 a safety critical worker is one who, through ill health, does something or fails to do something that may lead to a serious incident affecting public safety or the rail network. Whether a worker's role is a safety critical role depends on an analysis of the tasks to be performed. KiwiRail extends the definition of safety critical workers to those who are at risk of serious personal injury, such as shunters.

Factors like skill and training also influence safety performance, and they are also taken into account by KiwiRail in assessing safety critical tasks, although not covered by NRSS/3

NRSS/3 identifies two types of safety critical worker (and thus safety critical task), a high level one where sudden incapacity could have serious results, and others, where there are mechanisms to make sure sudden incapacity does not present a serious risk, but where it is important that the worker remain attentive. A further two categories are for non-safety critical workers who still require the ability to keep themselves and fellow workers safe, and be healthy enough to do this.

Other tasks with important roles for safety are listed in certain codes, e.g. the STE code, or require formal licences.

7.8 Training and Competence

Training

KiwiRail provides an extensive range of training to its employees. Its training and qualifications framework is a "federal" model. The National Manager Capability and Culture is responsible for developing standard models for induction, leadership training (which includes safety) and core safety training. Business units are responsible for adapting these models to suit their operations, for all technical training and for making sure necessary qualifications are up to date. For that they each have a database of staff qualifications.

They also have computer systems to assist with this task. In the Passenger and Freight businesses the SMART application is used to plan and manage the currency of operational competency. The Infrastructure & Engineering business unit has a similar system. A single system is being considered to cover all competency records and inductions.

Training Standards

For all safety critical tasks, new employees are inducted, trained and certified as competent through classroom and On the Job training, before they are considered competent to do a task or work equipment. Training takes place all around the country, with some initial training done at the dedicated training facility at Woburn in Lower Hutt. As well, instructions for carrying out safety critical tasks are set out in Task Instruction documents. Ongoing safety observations are also used to keep staff competence up.

Rail specific training, certification and re-certification requirements are specified in:

- for rail operating qualifications - the RORP & Local Network Instructions, and ROC
- for engineering and maintenance qualifications - in the relevant Codes and supporting documentation.

Induction

KiwiRail is putting in place a single overall KiwiRail induction programme, to ensure consistency and coverage of all appropriate information. This is led by the Capability and Culture team who will, through a corporate process, give high level guidance to business units for developing induction processes specific to business and site.

7.9 Fitness for purpose and fitness for duty

All KiwiRail procedures are periodically reviewed to make sure they are fit for purpose.

KiwiRail has adopted NRSS/3 (Health Assessment of Rail Safety Workers) for safety critical roles (see section 7.7 above). This includes assessment of staff fitness for duty and that their ability to do their job safely is not affected by fatigue, illness, medication, drugs, or alcohol. NRSS/3 sets out minimum medical and fitness requirements for those holding safety critical positions, including requirements for:

- pre-employment medicals
- regular or special medical re-examinations
- drug and alcohol assessment
- initial and ongoing requirements for rail vehicle drivers and other rail operating personnel.

KiwiRail also follows NRSS/3 for managing health and well being of other staff.

The key provisions on drugs and alcohol provisions are in KiwiRail's drug and alcohol policy, which also includes requirements for testing. No alcohol is permitted in the workplace, nor illegal drugs. All staff must be free of illegal drugs and alcohol while on duty. Prescription medication is assessed for its safety implications before the user is allowed in a safety critical position. The Fitness for Work policy also covers drugs and alcohol, as well as fatigue and other factors affecting fitness for work.

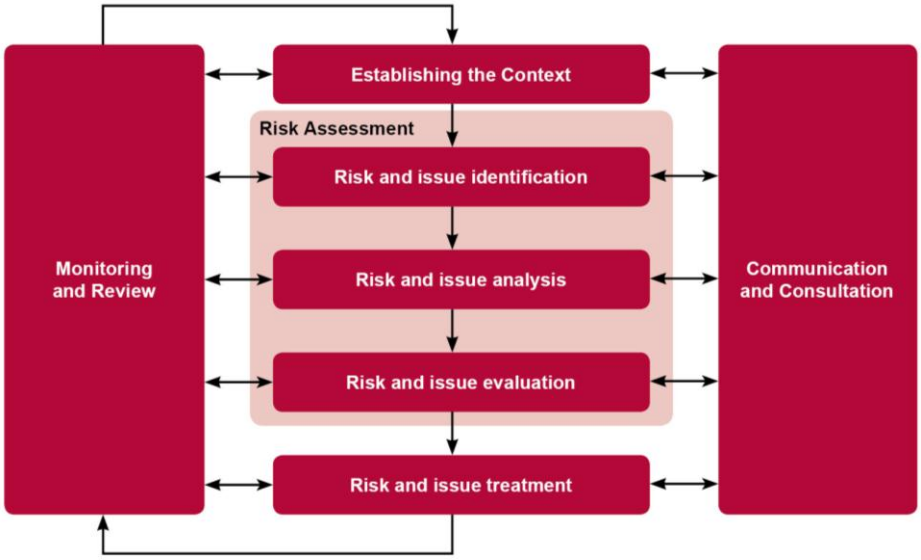
KiwiRail is also part of the ACC Workplace Partnership Programme, and works in that programme to prevent injury and rehabilitate those that are injured. KiwiRail also gives effect to an agreement with the RMTU on rehabilitation management. There are also special programmes to inform staff of health impacts of work and how they can be reduced, such as the Safe Spine and healthy eating programmes.

7.10 Risk Management and Hazard Analysis

Risk Management Policy

KiwiRail's Board has adopted a formal risk management policy which provides a framework for risk management in all parts of KiwiRail. It covers all risks, not just safety risks, and manages them in a consistent framework, as shown in the following diagram.

Figure 5.0 - Risk Management Framework



KiwiRail recognises that risk is a fundamental part of doing business and that its business operates in a complicated risk environment. It is committed to actively and consistently managing its risks to:

- create and protect the value of its business
- make sure the environment for its staff, contractors and customers is a safe one
- make sure of continuous improvement in decision making and performance
- make more certain that its objectives are met.

Managers and supervisors are responsible for providing leadership for risk management by:

- managing and monitoring risks in accordance with KiwiRail's risk management processes
- creating a focus on risk awareness and management
- making sure that key decisions are made taking into account risk factors
- making sure that risk controls are in place and are effective.

It is every employee's responsibility to appropriately manage and report the risks in his or her work.

Principal Rail Risks

KiwiRail has adopted the As Low As Reasonably Practicable approach to manage high consequence risks. It recognises that what is reasonably practicable still has to meet the "all practicable steps" test in the Act and the Health and Safety in Employment Act.

The principal operational risks posed by KiwiRail's rail business are managed in accordance with NRSS/4 (Risk Management). The main systems or processes in place to manage these risks are:

Main areas of risk	Control
Unauthorised access or movement	• RORP • ROC • signalling/track warrants • National Train Control Centre and signal boxes • training (and supervision)
State/condition of infrastructure	• engineering Codes and standards • inspections audit and operating restrictions • asset management system – maintenance fit for purpose
Controlling of rolling stock operations	• ROC • freight Codes and plans • JOPs
State of condition of rail vehicles	• engineering Codes and standards • inspections • asset management system

Further detail on management of the risks is given in sections 9, 10 and 11.

Hazard Management

Each KiwiRail Business Group keeps a register of the hazards that apply to it, including the hazards of coming into contact with rail activities.

Hazards are managed using the standard HSE control processes – Eliminate, Isolate, Minimise and Monitor. As part of job planning, common hazards, and those related just to the task, are reviewed and controls put in place before work starts. New hazards identified on a site are recorded, assessed and managed. Material Safety Data Sheets are kept at site level.

The I & E Job Plan lists common hazards and gives a method for all work group members to be briefed on safety issues. KiwiRail Freight manages hazards in a similar way, with pre shift safety briefings and local hazard registers.

7.11 Quality Management

Each of the KiwiRail business units is responsible for managing quality. Processes followed depend on how safety-critical the work is, and on the relevant legislation.

For example the Infrastructure & Engineering team use the following principles to give adequate design, review and checking for accuracy and compliance of safety critical signalling projects:

- document control for drawings and other design documents
- staged document preparation, with review of documents at each stage
- separate staffing for design and review work
- formal independent document approval before documents are issued
- recording of approvals – responsibilities and dates
- planned commissioning activities with defined review and checking processes, records and sign off requirements.

The Infrastructure and Engineering Structures team use processes that are consistent with the Building Act's requirements.

Fleet Engineering (I & E Mechanical), Hutt Workshops, and mechanical maintenance (for freight and passenger) are certified to ISO 9001. No other parts of KiwiRail have or are working towards ISO 9001.

7.12 Monitoring performance

Safety performance reporting is covered in section 7.3 above.

The TAIC recommends actions for improvement in their reports following investigation of accidents or incidents. Some of these are for KiwiRail's action. KiwiRail examines each recommendation and takes action to put it into practice, sometimes in an amended form.

Audit

Internal and external HSE auditing is done throughout KiwiRail to see how effectively it complies with its safety obligations.

NRSS/9 (Audit) provides a broad outline for auditing standards in the rail industry including internal audit requirements. This standard specifies levels of auditing from level 1 routine inspection/audit to level 3 Special Audits. NRSS/7 (Rail Operations Interoperability), section 17, sets out further requirements.

KiwiRail has an internal audit plan (including any special audits) that complies with this standard, managed by the National Standards and Risk Manager. The plan includes auditing of KiwiRail activities to achieve and maintain compliance with the standards set internally and by the ACC partnership program.

Internal audits may point to issues arising that need fixing ("corrective actions"). These are managed in the following way:

- Level 1 audit corrective actions are managed locally
- Level 2 and 3 audit and special audit corrective actions are given to the managers responsible for the operation or process, overseen by the corporate safety team

External Audit / Safety Assessments

Under the Act NZTA can carry out safety assessments (equivalent to external audits) to assess KiwiRail's safety compliance in its rail activities, and to assure NZTA that they will continue to be run safely, or to decide what action KiwiRail has to take so that NZTA can gain that assurance.

The NZTA conducts a formal safety assessment of KiwiRail annually. This may be followed by a "closure verification assessment" to check KiwiRail's responses and how effective its actions have been in fixing issues from the annual safety assessment. These actions are managed by the accountable KiwiRail business unit.

KiwiRail uses spreadsheets and the IRIS system to record, allocate and track the status of the actions it has to take as a result of the external assessment.

Liaison with NZTA

Regular safety meetings are held with NZTA to discuss performance and current issues. As well there are informal meetings between the GM Safety and People and NZTA's Manager Rail Systems.

8 How we change, innovate, and develop in safety

8.1 Innovation and development

Railways face similar safety issues internationally. Safety here can be improved by adopting or adapting innovations which have been tried overseas, and other railways can learn from our experience. Innovation ranges from major radical new processes or equipment through to what might seem minor changes that have the potential to deliver significant improvements to service performance and safety. Innovations may result in major changes to business processes that also bring efficiency gains, leading to "safer higher performance". These can be as radical as major changes to signalling and control systems, and automated wagon inspection systems. Modern computer and communications technology has also enabled substantial advances in how railways are operated.

KiwiRail has established links with rail safety organisations in Australia (Rail Industry Safety and Standards Board), the US (Association of American Railroads), Canada (Railway Association of Canada), UK (Rail Safety and Standards Board) and Europe (International Union of Railways, "UIC") all of whom are actively seeking ways to make rail safer and more efficient (and with substantial budgets to do so). KiwiRail is also represented at regular international railway safety conferences, where ideas on improving safety are exchanged. It also maintains contact with overseas regulators, especially in Australia.

Modern techniques for signalling and train control are monitored, with a view to seeing if they are suitable for use in NZ. Similarly the growing recognition of "human factors" in causing accidents is also being monitored. This draws on safety developments in other transport modes, such as aviation and shipping. Safe movement in depots has recently been improved with computer based safe working systems developed internationally, and now introduced here. Modern level crossing protection techniques are being reviewed and research in this area looks to reduce the cost of providing active warning systems to enable their use at more crossings for the same level of funding, as well as improving the safety of crossings without active warning systems.

Traditionally, railways have improved safety systems in response to accidents. Modern train control and signalling have their roots in measures taken to avoid future accidents. This continues to be a source of innovation for KiwiRail. In the last ten years the risks from shunting have been substantially reduced as a result of changing the way the task is carried out, and modifying our equipment to improve the way the person doing the work and the equipment interact. Now modern animation tools are being used to help train staff in safe ways of working, with clear improvements in safety performance.

8.2 Review and managing during change

All safety critical processes have been linked to the risks they are intended to reduce, and are regularly reviewed to see if they can be improved. This includes review of processes after fatal occurrences, after audits and assessments, and from external and internal reports on accidents and incidents, and regular review of safety trends. See also NRSS/2 (Safety Management), clause 8.1. A programme of actions has been developed to improve safety, as part of the Safe High Performance strategy.

Managing the safety aspects of change centres around an assessment of the change in risk from new works, procedures, and staffing structures. KiwiRail follows the principles set out in NRSS/2, section 8 when managing change. See also section 6.5 of this Safety Case.

8.3 Variations

The Act forbids varying a safety case unless the variation has been approved by NZTA. This can be interpreted as any change, regardless of its significance. Yet the Act does not use the word "change", and nor does it define "vary" or "variation". In addition, in principle the safety case is a high level document that should not require changes unless there are significant changes to KiwiRail's operations. However, there has to be some detail in the safety case to make it coherent and meaningful as a safety document.

Seeking approval for all changes would be a significant workload for both KiwiRail and NZTA, which has the potential to crowd out work on the real risks of the business. Elsewhere in the Act the wording suggests only significant changes should be treated as variations. NZTA already accept some changes can take place without a formal variation.

KiwiRail proposes to seek approval for all variations to its Safety Case that result in a more than minor increase in KiwiRail's risk; and those that result in a significant reduction in risk. All other changes of interest to NZTA will be notified to them, including significant changes to processes and technologies, and new types of rolling stock. In some cases, NZTA may ask for a variation to be submitted for such changes.

If the traffic outlook changes, some disused or mothballed lines may be reopened. At that time the Safety Case will be varied to include them. This will also happen if new rail routes are created. Further sections may be mothballed or closed if no longer needed, and the coverage of the Safety Case altered. If the geographical coverage of the system is significantly changed, this too will be the subject of a variation request, but minor reductions in the network will only be notified to NZTA.

9 Operating the railway

9.1 Key operational risks

The key risk in operating trains is unauthorised access or movement, as set out in section 7.10 above. Unauthorised access or movement could result in collisions or derailments, with serious consequences. If access and movement is controlled, the risk of collision is significantly reduced. So too if the operating rules are complied with, for example if speed limits are not exceeded, and train handling is competently done.

> As noted in 7.10, substantial measures are taken to mitigate the risk, including the whole system of signalling, train control, rules and procedures, and training; and the staff accountabilities set out in Appendix B. These are detailed elsewhere in this Safety Case.

The risk of failure of these systems is controlled by design codes and standards, use of qualified people in design, training of controllers, and use of computer systems for track warrants.

> The risk of signals and warrants not being obeyed is controlled by training and competence procedures, and by corrective action arising from analysis of trends seeking any underlying causes.

When these systems are temporarily not fully working and alternatives have to be used there is a greater risk, especially as these alternatives are often manual systems with reduced capacity. An example is using only one track in both directions in a double tracked section, while work is done on the other track.

> These risks are mitigated by careful design and operation of the alternatives, and by slower running and piloting of trains where necessary. A pilot is a person who guides the safe movement of a rail vehicle by instructing the driver.

A related risk is the control of rolling stock and its movement in yards.

> In this case, there is a system of operating codes and plans (including JOPs where third parties are involved) to mitigate the risk that rolling stock might collide, derail, or create other dangers.

A further risk is of an out of control vehicle, such as a runaway wagon.

> This is mitigated by automatic braking systems, rules about vehicles temporarily without brakes, procedures requiring air to be supplied to the brakes even when disconnected from a locomotive during shunting, requiring vehicles to be secured with handbrakes when not attached to a locomotive, and trap points at significant locations. Trap points are designed to derail a vehicle rather than allow it to move into conflict with another train.

The risk of staff in control of rail vehicles not being fit for duty or alert while on duty is also an important risk.

> It is dealt with through health assessment and monitoring (NRSS/3, Health Assessment of Rail Safety Workers), drug and alcohol and other wellness policies, pre- employment testing, and through procedures in the ROC.

All these defences depend on properly trained and competent staff. If they are not properly trained or qualified, these risks increase. Training is also the primary defence against risks like going past signals at danger, and the risks of driving vehicles on the road. Procedures for training and competence are dealt with in section 7.8.

9.2 Specific operational risks

A number of operational areas raise particular risks.

Shunting and marshalling

The risks of shunting (largely personal safety) were highlighted in the 2000 Ministerial Inquiry into Tranz Rail Occupational Safety and Health. Since then a number of major mitigation actions have been taken, to reduce the amount of shunting actually carried out. Many more trains have fixed rakes, which do not normally need to be shunted. Trains are also more point to point, so wagons reach their destination without needing to be shunted. KiwiRail has continued with these measures. Nevertheless a reasonable amount of shunting has still to be done. Action has also been taken to reduce its risks, such as not allowing loose shunting, and carrying out all shunting with air braking available. Training has improved, as noted in section 8 above. Procedures for shunting (including general safe procedures and locomotive remote control operation) are detailed in the ROC.

The safe working of trains in terminals and sidings, and the exchange of rail vehicles between operators, maintenance depots or private sidings, are set out in the relevant Local Operating Plan, Local Instructions and JOPs.

Procedures for safely using road vehicles to move rail vehicles are set out in the ROC and site specific safety plans. Except during major infrastructure works, such movements are strictly confined to terminals, depots and particular sidings.

Passenger Safety

KiwiRail's Passenger Operations and Train Attendant Manuals set out procedures for safe passenger management.

The RORP & Local Network Instructions set out safety procedures for train failures on the NRS, including in tunnels and remote locations. There are special plans for the Otira, Rimutaka and Kaimai tunnels.

Further requirements for managing passenger safety on heritage excursions are set out in NRSS/7 (Rail Operations Interoperability) and NRSS/11 (Heritage Train Management) and in the Heritage Operating Manual.

Site Visitor Safety

Contractors and other people (other than rail staff) coming on to rail land for any reason, including carrying out work, need a "Permit to Enter" from I & E, and a safety induction. Where necessary the "Permit to Enter" will set out site-specific requirements including the need to get permission from the controller of the site, e.g. a work site.

Permits for terminals and depots are issued by the terminal/depot manager. Procedures for safely managing entry to a terminal/depot are covered in the ROC, and the HSE database.

Dangerous Goods

KiwiRail's freight trains carry a variety of goods that are regarded as "dangerous" under the Hazardous Substances and New Organisms Act 1996, Land Transport Act 1998, and rules and regulations.

Procedures for the safe transport of these goods are set out in the ROC Supplement 3.3. It includes:

- segregation requirements (for classes of dangerous goods moving together)
- management procedures for site control and movement
- approved handler requirements
- documentation and placarding requirements
- special instructions for Class 1 explosives, tank wagons, and LPG
- emergency procedures.

Standards NZ's *Dangerous Goods - Initial Emergency Response Guide* is also used for additional safe working guidance on product identification, and containment and management of a spill or leak.

Freight Handling

The Freight Handling Code and other operating instructions set out the limits and methods for the loading of rail vehicles, for both staff and customers.

NRSS/6 (Engineering Interoperability Standards) specifies:

- the standard static gauge for the NRS, which gives the standard height and width allowed for rail vehicles
- where loads exceed this gauge, an over gauge load permit is needed for the particular journey unless it is specifically exempted by the RORP or Local Network Instructions for any particular line.

Loading capacity for individual rolling stock classes is detailed in one or both of the following systems;

- the computerised freight and train management system
- Heritage Rolling Stock register managed by Infrastructure & Engineering.

Occupation of track for maintenance

KiwiRail manages occupancy of track for infrastructure maintenance and renewals in four ways:

- major track occupancy - planned at least 7 days in advance where possible
- minor track occupancy – arranged at short notice (advised by 1500 hours the day prior)
- routine track occupancy –arranged at the time with the National Train Control Centre
- emergency track occupancy – as required.

KiwiRail has procedures for planning and implementing track occupancies including consultation with all affected stakeholders.

Hook and Tow

Where hook and tow operations conducted by KiwiRail involve more than one rail licence holder:

- KiwiRail Freight or Passenger is responsible for the mainline driving activity (physical operation) of the train, which may include vehicles from other Operators
- The other licence holder remains responsible (as owner or controller of the vehicle) for the physical condition of its vehicles including compliance with all relevant mechanical standards (refer NRSS/6 ,Engineering Interoperability Standards & NRSS/7, Rail Operations Interoperability).

KiwiRail may contract to supply rail personnel or hire or lease rail vehicles including locomotives to a licensed third party in accordance with section 13 of this Safety Case. For avoidance of doubt such arrangements are not considered to be “Hook and Tow”.

10 Providing and maintaining rail vehicles

10.1 Providing and Maintaining Vehicles: Key risks

The key risk related to rolling stock is its fitness for purpose and the condition it is maintained in. Component failure or defect in rolling stock may cause derailments or collisions, and as well presents personal safety risks. Failures and defects may be from wear and tear from normal use, such as cracking or bearing issues, or may come from damage or poor use, such as hand brakes being left on.

> These risks are controlled by applying good sound railway engineering practice to design and maintenance practices, and by engineering codes, standards and operating instructions, inspections, audits, operational and maintenance training, and the overall asset management system; and the staff accountabilities set out in Appendix B. As well specific equipment is used to monitor condition and detect failures, such as dragging equipment detectors, in-motion weighbridges, and acoustic monitors for bearings. Significant failure trends are analysed in depth.

A related risk is the design process. Wagons that are poorly designed and are given running rights by mistake present the same risks as above, and the defences are the same.

> The controls against poor design are similar, and include design codes (especially M3000) and the processes under NRSS/6 (Engineering Interoperability Standards). Measures against the risk that the design codes are not correct include using qualified people to write them, checking and approval by different people, and technical committee oversight. Construction risks are reduced by applying technical specifications for the purchase of assets that are consistent with good sound railway engineering practice and have been approved by knowledgeable, experienced staff.

There is also a risk that a vehicle does not comply with code for other reasons than normal use, for example if it is not built to an approved design, or its integrity has been affected by an accident or unauthorised modification.

> The codes (and NRSS/6) have procedures for both type approval and individual vehicle acceptance, without which it cannot run. Repair and modification are controlled by codes and engineering change processes.

All the processes that defend against risk depend on appropriately trained, qualified, and experienced people, and if they are not, then the likelihood of risk increases. Training and competence procedures are covered in section 7 above.

10.2 Rolling Stock Fleet

The service status of KiwiRail rail vehicles on the NRS is managed through its asset management system and codified inspection regimes detailed in the *KiwiRail Mechanical Code M2000*. These cover locomotives, wagons and other rail based equipment, including most of the I & E vehicles. The asset management system is available across the KiwiRail business and lists weights, lengths, volume/capacity, height, maximum allowable speed, speed restrictions, over-gauge permits and other characteristics for rail vehicles.

I & E also uses an Operations Management System (OMS) that provides train consist information, train performance updates, and as a timekeeping, monitoring and delay-classification system.

Types of rail vehicles in use by KiwiRail

Under the control of KiwiRail Freight business unit:

- diesel electric locomotives
- 25kV AC electric locomotives
- diesel electric and diesel shunting locomotives
- freight wagons

- vehicle maintenance service wagons.

Under the control of the Passenger business unit, and maintained by the Freight business unit:

- diesel electric and diesel shunting locomotives at passenger depots
- 1500v DC electric multiple units
- diesel electric railcars
- passenger carriages and vans.

Under the control of I & E business unit:

- infrastructure and engineering service wagons
- hi-rail vehicles
- heavy lift rail cranes
- mechanical test car
- instrumented wagons with test loads
- mobile track maintenance vehicles including
    - track recording car
    - ballast tampers, regulators, and cleaners
    - dynamic stabilisers
    - flashbutt welding truck
    - concrete sleeper layer
    - self-propelled low loader.

A small number of rail vehicles in use at any time may be on lease from other parties. There are numerous hi-rail vehicles owned and operated by contractors. These vehicles have to meet the same standards for both building and operation as KiwiRail hi-rail vehicles.

10.3 Design, Construction, Inspection and Maintenance

Standards and procedures for the design, construction, inspection and maintenance of rail vehicles are detailed in the following KiwiRail documents:

- Mechanical Code (M2000)
- Mechanical Engineering Design Manual (M3000)
- Wheelset Manual (M6000)
- supplements and supporting documentation (M9000 series)
- manufacturers' manuals and other associated documentation
- Field Modification Instructions (FMIs) and Significant Information Notices (SINs).

These documents call up national and international engineering standards where they apply, and require that NZ laws are complied with.

Relevant requirements for the ability of rolling stock to operate with other rolling stock and with all aspects of the NRS are set out in NRSS/6 (Engineering Interoperability Standards).

10.4 Locomotives and Other Self Propelled Vehicles

Locomotive loads over any section of line are specified on the "Locomotive Load Schedules" maintained by KiwiRail Freight in conjunction with I & E.

Instructions for the use of safety devices and the provision of emergency equipment are set out in the ROC, and RORP. Minimum requirements for the provision of safety items (headlights, ditch lights, horns) are set out in NRSS/6, supported by RORP

10.5 Passenger Cars and vans, freight wagons and service vehicles

Layout and equipment arrangements are set out in drawings held by KiwiRail I & E. Operating instructions for special equipment and facilities are in RORP and ROC.

Electrical safety requirements for 230/400 volt AC 50 Hz power supplies are set out in NRSS/6 and M2000.

10.6 Infrastructure Maintenance Vehicles

Hi-rail vehicles and Mobile Track Maintenance Machinery are mainly operated by I & E and its contractors. For Hi-rail vehicles to operate on rail, their design must comply with the requirements of the manual OM 94001 “Hi-Rail Vehicles for use on the Controlled Network”. Designs for Hi-rail kits for each type of road vehicle must be individually approved.

Vehicle inspection requirements are covered by manual OM94001, form Loco 155B and other supporting documentation. Requirements for trolleys are set out in OM 94002. Design requirements for Mobile Track Machinery are case specific to relevant industry standards.

Procedures for operation on rail (including track occupancy and the use of radio call signs) are covered in the RORP.

Specific mobile track maintenance machinery is equipped with standard draw gear and Westinghouse air brake systems to enable it to be coupled into and operate in a freight train consist.

11 Infrastructure

11.1 Key infrastructure risks

The key risk in infrastructure and premises is component failure, including components getting out of specification through use. This can lead to derailments, and in the case of signalling and control systems, serious collisions. Examples include track faults that are not adequately corrected, track buckles, and crushing of timber bridge parts.

> The main mitigating measures are the engineering codes (including supplements) and standards, inspections, audits, training and operating restrictions, and maintenance fit for purpose under the asset management system; and the staff accountabilities set out in Appendix B. Timber bridges are being progressively removed. Track buckling is controlled by destressing rail, maintaining track stability, and by a system of speed restrictions in hot conditions, including remote rail heat detection systems.

Fires are a risk in long tunnels. Two long tunnels (Otira and Rimutaka) are used for scheduled passenger movements, and are on grades that make reaction to the fire more difficult.

> As noted in section 9.2 there are special procedures for train incidents in these tunnels. Only modern steel-bodied fire resistant passenger cars are used for scheduled services through these two tunnels. Other passenger rolling stock (charter and heritage) is only used infrequently through the long tunnels, and also through the Kaimai tunnel.

Risks to track workers from moving trains are also important.

> They are controlled by protection systems, including manual and computer assisted systems (for example, “blocking” – putting all signals at Stop - and Eprotect – an electronic system for protecting workers on the track). Risks are greater on multiple work sites, and special care is taken there. Near misses are analysed to understand and correct issues.

New Zealand’s geology and topography pose risks of damage to the track formation, especially slips, both on to and from under the track. There are a large number of possible slip sites, and slips cannot be accurately predicted with current technology.

> The possible sites are assessed for the risk of slips and prioritised, with action taken on the highest priority to improve the protection for the track. For example, in the Wellington suburban area, sites where a train might be derailed down a hill are given priority. Regular inspections, with additional inspections in bad weather, are the principal defence. Similar issues arise with floods, and again inspection is the key defence. Specific sites with a high likelihood of flood damage are specially protected; and the risk of bridge piers being undermined has been addressed with remedial work on foundations, and a programme of new bridging.

Level crossings pose risks to road users and to trains.

> Improvements to level crossings are prioritised, with a higher level of warning given to road users at the crossings with the highest risk and number of collisions. The Australian Level Crossing Assessment Model (ALCAM) has provided a way of assessing level crossing risk measured against international best practice, and upgrade work based on the ALCAM assessment has improved the safety of crossings, often at minor cost. Active warning systems at level crossings are regularly inspected according to the code.

All the defences against risk depend on having appropriately qualified, trained and experienced staff, and keeping their competence up to date. Training and competence are dealt with in section 7 above.

11.2 Codes and Standards

Codes and standards referred to in the following sections are KiwiRail documents. They call up national and international engineering standards where they apply, and require that NZ laws such as the Resource Management Act 1991 and the Building Act 2004 are complied with.

11.3 Track and Formation

Database

I & E's asset database lists key track features on a line segment basis against line kilometrage:

- rail type and condition
- sleeper type and condition
- turnouts
- track geometry (curves, gradients, cant)
- bridges and culverts
- tunnels
- level crossings
- station platforms
- signals and notice boards.

More information will be available from the new Sirius asset management system. Rollout of this system will be finished in 2013.

Standards

KiwiRail Standards on design, construction, maintenance, inspection and testing requirements for track and formation assets are detailed in the T003 Track Code and T200 Network Engineering Track Handbook. These cover:

- track geometry standards and tolerances
- inspection requirements and frequencies
- formation and drainage
- actions to be taken if defective track and formation are found.

Where necessary, special engineering designs apply.

Inspection and Maintenance of Track

All track and associated infrastructure that KiwiRail owns and operates over is inspected regularly by I & E.

Track owned or managed by KiwiRail:

I & E is responsible for the inspection, maintenance and certification in accordance with the Track Code (and other relevant infrastructure Codes) of:

- all KiwiRail track including track in terminals, workshops and similar facilities
- any other track where agreed by the parties
- at the interface with track owned by other parties.

Track Not Owned or Managed by KiwiRail – Private Sidings:

Private Sidings are sections of track which are connected to the operational NRS, but which are located inside a customer's site, such as a factory or port. They are used for freight handling within the site. They are managed through siding agreements. Each agreement specifies the responsibilities of KiwiRail and the owner of the siding. In most cases, agreements provide for KiwiRail to inspect the track and other infrastructure on a regular basis and to advise the owner of any maintenance required. Certification as fit for purpose is KiwiRail's responsibility. If it is no longer fit for purpose KiwiRail will not allow its rail vehicles to use it. Private siding agreements are managed by the KiwiRail property team in conjunction with KiwiRail Freight.

KiwiRail is currently reviewing and updating siding agreements with its customers. In some cases agreements have expired or are no longer current for other reasons. KiwiRail accepts that, for all such sidings where it currently operates rail vehicles, it

has the responsibilities of the access provider including controlling the safe use of the siding, inspecting it and advising the owner on appropriate action.

Where the siding owner has a rail licence the safety responsibilities for that siding (as access provider, rail operator, or both) will be covered by that licence.

Sidings are managed using Joint Operating Plans which provide for the safe separation of rail and other activities (e.g. road vehicles, pedestrians). JOPs also specify who is responsible for controlling movements on the site.

11.4 Bridges and Structures

Bridges and structures (including tunnels and culverts) owned by KiwiRail and inspected by I & E are listed on the I & E database with information on type, size, construction detail, and inspection records.

Design, construction, maintenance, inspection and testing requirements for bridges and structures are set out in KiwiRail's:

- Structures Code
- Structures Code Supplements
- Structures Inspection Guidelines
- Structures Inspection Manual (W200)
- Infrastructure Engineering Handbook (T200).

These documents also give guidance on actions to be taken if a structure is found to have defects, and on actions to be taken following flooding, earthquake or other natural event.

Structure clearances for new works are specified in T200. I & E hold structure clearance diagrams showing the worst case clearance envelope for each line and use them for assessing "over gauge load permit" requests.

11.5 Station Platforms and Access Ways

I & E is responsible for maintaining all station platforms and associated passenger access ways within station precincts, except those subject to specific agreements with other parties. In both the Wellington and Auckland metro areas the Regional Councils now own passenger accessways that are grade separated, and are responsible for maintaining them.

Pedestrian overbridges and subways not associated with direct pedestrian access to a station platform are the responsibility of Territorial Local Authority.

I & E annually inspect all structures that might present risk to the railway, regardless of ownership.

Corporate Property advise on all land boundaries and building / structure asset ownership where any issues about boundaries between those responsible need to be resolved.

11.6 Signalling System

Train control on KiwiRail is (with minor exceptions) either through the track warrant system or an automatic signalling system. The types of signalling systems in use on the National Rail System are specified in the RORP. All signalling (including level crossing alarms) on the NRS is owned by KiwiRail and is inspected and maintained by I & E.

Standards and procedures for signalling and level crossing alarm design, construction, installation, testing and commissioning, maintenance, inspection, alterations, records, drawings and staff competencies are set out in KiwiRail's:

- Signals Telecommunications Electrical (STE) Code
- STE Code Supplements
- STE Task Instructions
- STE Training manuals

- manufacturers' manuals
- Significant Information Notices (SINs)
- engineering office section manuals
- other supporting documentation
- Infrastructure Maintenance Handbook (T200).

These documents also detail actions to be taken if signalling equipment and systems are defective or operating incorrectly.

Additional requirements for level crossings, including providing active warnings, are covered in the General Code Supplement. The Manual of Traffic Signs and Markings published by NZTA lists the standards for level crossing signage and markings.

11.7 Communication Systems

KiwiRail has a train control radio system for communication between rail vehicles and with train control, with almost full coverage of the NRS. The train control function and associated systems are managed through I & E.

Other radio services are provided for:

- shunting
- other station, yard and movement control
- rail corridor maintenance activities by KiwiRail and others
- remote control shunting
- train end monitors used on freight trains, and other status monitoring equipment that needs to communicate directly with locomotives.

The scope, operation and use of the systems are detailed in the RORP, engineering Instructions, and other technical documentation held by the user group.

The following KiwiRail documents set out the inspection and maintenance standards for all systems (except equipment for shunting by loco remote control and train end monitor equipment):

- STE Code
- STE Code Supplements
- SINs
- manufacturers' manuals
- Communications instructions
- Communications Technical Information circulars.

Train Control trackside telephones are provided in a few specific locations. Tunnel phones provided in lieu of train control radio systems are inspected and tested as detailed by the STE Code.

I & E inspects, certifies, and maintains the following equipment:

- all on-board train control radios fitted to Locomotive and other KiwiRail self-propelled vehicles
- radios used for shunting and other local rail operation radio communications equipment owned by KiwiRail.

There are also systems for non-voice communication. Inspection and maintenance regimes for train end monitors and equipment for shunting by locomotive remote control are covered in the Mechanical Code (M2000) and supporting documentation. The Freight business unit is responsible for the design, installation, inspection, certification and maintenance of this equipment

11.8 Electric Traction Systems

Three systems are provided:

- 1500V DC system in the Wellington metropolitan area extending as far as Waikanae, Johnsonville, Melling and Upper Hutt for passenger electric multiple units
- 25kV AC system on the NIMT between Palmerston North and Hamilton for locomotive hauled freight and passenger trains
- 25kV AC system in the Auckland metropolitan area extending as far as Swanson, Auckland Station, Onehunga, Manukau and Papakura. This is being installed and progressively tested live. It will be ready for use when the first electric multiple units arrive in 2013.

The National Train Control Centre in Wellington supervises and controls each system.

The following KiwiRail documents cover construction and maintenance standards and procedures including isolation, earthing and safety standards.

- Traction Code
- Traction Code Supplements
- Traction Task Instructions
- manufacturers' manuals
- drawings.

Specific Electrical Awareness training and certification requirements apply for rail personnel and contractors who work in electrified areas.

The traction overhead, substations and system controls are owned by KiwiRail and inspected and maintained by the I & E to prescribed standards and procedures.

KiwiRail Freight and I & E (Mechanical) are responsible for the inspection and maintenance of rail vehicle (freight and passenger) on-board electric traction equipment except for Auckland electric multiple units.

11.9 Yard and Station Platform Lighting

Key design, inspection and maintenance standards for yard and station lighting are detailed in the following KiwiRail documents:

- STE Code
- STE Code Supplements
- lighting design guidelines.

I & E provide and maintain lighting as follows:

- yard lighting of track on the Controlled Network (including yard arrival/departure roads), and also yard and siding tracks owned by KiwiRail
- lighting provided for shunting operations in private sidings unless an agreement for the private siding provides for other arrangements.
- station platform lighting where provided for KiwiRail passenger trains (except in Auckland and Wellington metropolitan areas).

Auckland Transport and GWRC provide and maintain platform lighting on their suburban stations, and lighting for shunting in their depots and storage areas.

12 KiwiRail's role as access provider

12.1 Access Provider and Network Controller

Access has two meanings in rail safety terms. The first is granting permission for individuals, road vehicles, etc to be on the railway, and the actions to prevent access without that permission. That is covered in section 5, above. Included in this meaning is the granting of rights to have utilities (e.g. pipes and wires) on, over or under the rail corridor.

The other meaning is the granting of permission for organisations to run trains and rail vehicles on the NRS. This is the meaning in this section. The definition of access provider in the Act is a person who controls the use of a railway line by rail operators. Access is controlled to ensure safe operation, and according to the access rights granted in individual access agreements.

In its role as access provider and Network Controller KiwiRail, in a neutral way, provides 'access' to the NRS and controls movement of third party rail vehicles (as well as its own). Operators also must have, and comply with the terms of, an individual access agreement granted by KiwiRail, and comply with the Common Access Terms

All Operators on the operational NRS have to comply with the common set of rules and standards which provide for the safe use of the NRS by all users, and the management of risk:

- NRSSs (to the extent adopted by individual operators in their safety cases, as agreed with NZTA);
- the RORP.
- the Local Network Instructions.

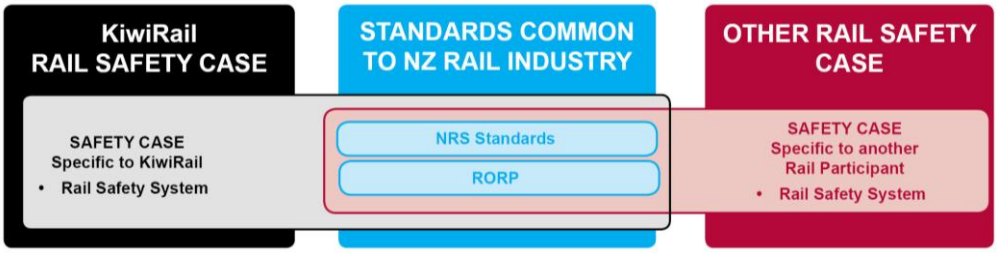
Together these documents set the rules and procedures that all users of the NRS are required to follow, as shown in Figure 6 in section 12.2.

12.2 NRS Standards For All Rail Participants

Figure 6 also shows the role the NRSSs (and the RORP) have across the safety cases of all rail operators and access providers.

They are a set of standards for matters which users of the NRS must address for their operations to be consistent with the network and with each other. These standards provide for the ability of rolling stock to operate with other rolling stock and with all aspects of the NRS ("interoperability") and the compatibility and safety of their respective operations.

Figure 6.0 - Relationship of Common Standards



Management and Control of the NRSSs – KiwiRail's Role

KiwiRail maintains and administers the NRSSs, which are approved by NZTA as rail regulator (as noted in NZTA's *Rail Safety Licensing and Assessment Guidelines*) as standards that "rail participants operating on the National Rail System are expected to refer to and adopt". KiwiRail has adopted these standards and complies with them.

NRSSs are controlled documents and are publicly available on the KiwiRail website. Changes to them have to go through review and approval by the NRSS Executive Committee and/or the relevant NRS joint committee (see Appendix C.)

NRSS/7 (Rail Operations Interoperability), sections 5 and 6 describe the system for distribution of safety information to rail staff and other operators, including any issues with vehicles, infrastructure, and premises.

12.3 Access to the Controlled Network

Access Agreements

Access Agreements are agreements that grant Operators rights to access the National Rail System to operate rail services. Anyone wanting to operate on the NRS must get an access agreement from KiwiRail Infrastructure & Engineering as access provider and network controller.

All Access Agreements are granted subject to the Common Access Terms which is a set of standard terms covering a number of matters relevant to interoperability and safety including:

- timetabling and access allocation
- network delays
- operators' access to codes
- rights of the network controller to control movements on the NRS
- rights of the Access Provider to undertake rail vehicle inspections
- operators' obligations to comply with their own approved safety cases and other safety requirements
- maintenance of and changes to the network
- emergencies and incidents.

Current Access Agreements

KiwiRail has granted access to the following:

Third Party Holder of Access Rights	Lines to which Access is Granted	Timetabled or Excursion
Veolia Transport Auckland Limited	Auckland Network	Timetabled
Taieri Gorge Railway Limited	Main South Line and Taieri Branch Line	Timetabled and excursion
Federation of Rail Organisations of New Zealand (FRONZ)	All of the operational NRS	Excursion

12.4 Operating on the Controlled Network

The Controlled Network is that part of the NRS where the National Train Control Centre ("NTCC") in Wellington controls movements. The NTCC can be assisted by local signal boxes, under the authority of the relevant NTCC Train Controller.

Rail Operating Rules and Procedures

All occupancy and movement on the Controlled Network has to comply with the RORP. This is the primary reference containing the rules by which KiwiRail manages this occupancy and movement safely. These rules sit at a level below the NRSSs.

They cover (amongst other matters):

- general and operating requirements
- signals rules (including what signal aspects mean)
- Train Control operating systems in use for each segment of the track (Centralised Traffic Control, Double Line Automatic Signalling, Single Line Automatic Signalling, Track Warrant Control)
- air brake requirements
- engineering requirements (track occupancy and protection for maintenance and renewals, inspection and works activity)
- procedures for safe rail operation and working
- operating limits for each line including
    - maximum speeds
    - crossing lengths and equipment provided at stations
    - relevant clearance restrictions
    - running rights for maintenance vehicles
- maximum lengths of trains
- other applicable running restrictions
- operating Instructions for KiwiRail Controlled Territory
- reporting of vehicle defects (including other operator's vehicles).

Running rights for commercial rail vehicles are set out in the ROC.

Signalling and Communications

"S & I Diagrams" show the signalling and interlocking used on the Controlled Network. The RORP may specify special operating features and instructions. The RORP also specifies the communication systems (including radio) in use on the NRS. The "Radio Communications Handbook" gives instructions for using radio equipment.

Scheduling of Train Movements

Timetabling of train movements is done in accordance with the relevant Access Agreements and Common Access Terms.

Movement between the Operational NRS and track controlled by others

The boundaries between the Operational NRS and other parties' track, including track leased for the exclusive use of a third party are set out in the RORP & Local Network Instructions and/or Signals & Interlocking Diagrams. These boundaries may also be set out in a site specific Joint Operating Plan where the third party has its own Rail Licence.

Where procedures are necessary for the safe operation of rail vehicle interchange at these boundaries, they are also listed in the RORP or site Joint Operating Plan.

12.5 Disused and mothballed lines

KiwiRail's role as access provider extends to lines that are closed, mothballed, or not operated, provided the track remains and is not leased to other parties. For these lines KiwiRail's prime responsibility is to control access, in this context by preventing trains and other rail vehicles from running except under special controls, or through lease arrangements with third parties. KiwiRail also takes measures to maintain the integrity of the route and track; controls access by people, and modifies arrangements at level crossings in conjunction with the road authority.

Other parties may run rail related activities on these lines under licences or leases. These other parties will then be the access provider and operator and require their own licences and safety cases. This KiwiRail Safety Case does not apply to these leased lines.

Lines no longer operated by KiwiRail (some 430km) are listed in Appendix D.

13 Contracting

13.1 Introduction

There are two broad types of people that KiwiRail has contractual relationships with for its rail activities - rail participants who are responsible for their own safety and have their own rail licence, and people who are not licensed rail participants, where KiwiRail is responsible for their safety. A further type of contract, for the supply of goods and materials to KiwiRail, is not covered by this section.

13.2 Licensed Rail Participants

Rail participants (including heritage operators) contract with KiwiRail for access for their services. The management of access is dealt with in section 12 above.

Occasionally KiwiRail will hire a rail vehicle from or to another licensed rail participant. The responsibilities for each party when vehicles are exchanged between them are set out in NRSS/7 (Rail Operations Interoperability), section 6. KiwiRail may add further conditions.

13.3 Services Provided Under Contract by KiwiRail to Heritage and other third party Operators

KiwiRail may provide the following services from time to time on agreed terms and conditions.

KiwiRail may provide design, inspection and certification of equipment. It may also provide training, supervision, certification, ongoing assessment services of third party's employees and staff ratings for third party's individual equipment types..

When KiwiRail provides staff to another operator, the responsibilities of each are as set out in NRSS/11(Heritage Vehicle and Train Management), section 4.4. KiwiRail applies these rules even if the other operator is not a heritage operator. NRSS/7 also provides that personnel with safety critical roles must declare to their employer any voluntary safety critical work for another operator, so that rostering rules can be followed.

When KiwiRail provides its employees on a contract basis to third parties, they will continue to be KiwiRail employees and be covered by indemnity provisions in Employee Agreements. However where these employees work for another licensed rail participant they will be required to carry out their activities in accordance with that party's safety case.

13.4 Management of Contractors who are not licensed rail participants

KiwiRail makes significant use of various agents and contractors (including consultants) particularly in the I & E business unit. Under the Act and the Health and Safety in Employment Act, KiwiRail has duties in respect of their safety, as well as the contractor itself. KiwiRail expects that its contractors and their staff will enjoy the same safe environment as its own staff. Safety of the work carried out by contractors is managed by:

- making sure contractors have appropriate policies and procedures and carrying out appropriate monitoring to ensure that they comply with them
- where contractors carry out work covered by KiwiRail's Safety case, making sure that those contractors are aware of and implement KiwiRail's safety policies and processes
- buying – all tenders for safety critical work have to include safety as one of the aspects they are judged on. Contractors have to submit safety plans as part of the buying process
- design – KiwiRail's engineering team has input to the design
- site safety – rail protection of sites is managed in accordance with the RORP and all contractor personnel must attend a rail safety induction

- training – contractors working in safety critical roles or areas must have appropriate training, which KiwiRail or another suitable trainer provides. For example, where the contractor is responsible for rail protection, KiwiRail may provide training to the contractor's staff. In some cases KiwiRail agrees that the contractor is competent to do this
- field audits to assess contractor compliance to KiwiRail rules and standards.

Contractors working under this Safety Case and KiwiRail's licence are regarded by NZTA as exempt (under section 15 (3) of the Act) from holding their own licence,

14 APPENDICES

A. Supporting Documentation

B. Key Rail Safety Responsibilities

C. Technical Committees

D. Geographical Coverage – List of Lines

E. Coverage of the Act in this Safety Case

APPENDIX A – Support Documentation

				ACTIVITY			
Supporting Document	**Intent**	**Change Process**	**Document Controller (Business unit or function)**	**Operating**	**Infrastructure Engineering**	**Mechanical Engineering**	**Passenger (on board)**
Rail Operating Rules, Procedures & Local Network Instructions (RORP)	Embodies the principles for the safe operation and working of the National Rail System. Provides parameters for route, equipment, (including running rights & restrictions) communications, route specific emergency plans and Standard Operating Procedures for the Controlled Network.	Joint Technical Committee - RORP	National Standards & Risk Manager	X			
Rail Operating Code (ROC)	Provides detailed instructions for rail operations activities. Provides parameters for rail sites, equipment, (including running rights & restrictions) communications, location specific emergency plans and Standard Operating Procedures for the KiwiRail Operator Controlled Territory.	Rail Operating Code Technical Committee	National Standards & Risk Manager	X			
Bulletins	Modify RORP and ROC provisions. Provide safe-working instructions for circumstances not otherwise provided for.	National Standards & Risk Manager	National Standards & Risk Manager	X			
Freight Handling Code	Provides detailed instructions for safe loading and security of freight.	National Standards & Risk Manager	National Standards & Risk Manager	X		X	
Hazardous Goods Instructions	Provides detailed instructions for safe loading and security of hazardous goods.	National Standards & Risk Manager (with reference to legislation)	National Standards & Risk Manager	X			

				ACTIVITY			
Supporting Document	**Intent**	**Change Process**	**Document Controller (Business unit or function)**	**Operating**	**Infrastructure Engineering**	**Mechanical Engineering**	**Passenger (on board)**
Rail Operating Manual	Embodies Industrial Agreements with RMTU including rostering principles and voice / locomotive log recording procedures.	Joint KiwiRail & RMTU	Freight	X			
Long Tunnel Emergency Plans (LTEPs)	Specific plans in detail support RORP arrangements for Otira, Kaimai and Rimutaka tunnels.	Joint Technical Committee – RORP with Tunnel Focus Groups	National Standards & Risk Manager	X			X
Joint Operating Plans (JOPs)	Provide arrangements to avoid conflict at the interface between KiwiRail operations and third parties.	Joint Review	Operating business unit and third parties	X			
Rail Ferry Instructions	Describes loading and unloading arrangements for rail rolling stock on and off rail ferries, and maintenance arrangements for track on ferry rail decks and linkspans.	Interislander and I&E	Interislander	X	X		
Private Siding Agreements	Set out ownership, inspection and maintenance responsibilities for rail infrastructure assets in private sidings.	Corporate Property with I&E	Corporate Property		X		
Access Agreements	Set out access terms for third parties to access the NRS to operate trains.	I&E with third party	Infrastructure & Engineering	X	X	X	
Local Operating Procedures	Provide local arrangements for safe operations.	Internal	KiwiRail Managers	X			
Work Site Safety Plans	Provide local arrangements for Health and Safety.	Internal	KiwiRail Managers	X	X	X	X
Training Standards and Specifications	Detail requirements for competency.	Internal	Each business unit with Culture & Capability oversight	X	X	X	X

				ACTIVITY			
Supporting Document	**Intent**	**Change Process**	**Document Controller (Business unit or function)**	**Operating**	**Infrastructure Engineering**	**Mechanical Engineering**	**Passenger (on board)**
Network Code (general) Track Code Structures Code Signals, Telecoms and Electrical, Traction Codes	Embody the principles for the safe operation and working of the National Rail System. Provide construction and maintenance standards. Provide parameters for inspection and testing.	Technical Committees with consultation externally as required	Infrastructure & Engineering		X		
Mechanical Code (M2000)	Embodies the principles for inspection and maintenance of rail vehicles in safe condition. Provides maintenance standards and parameters for inspection and testing.	Technical Committee with consultation externally as required	Infrastructure & Engineering			X	
Significant Information Notices	Modify provisions in Engineering Codes. Provide Engineering safe-working instructions for circumstances not otherwise provided for.	Engineering Managers	Infrastructure & Engineering		X	X	
Memorandums	Provide authorisations for minor changes where there are no changes to risk profiles.	Engineering Managers	Infrastructure & Engineering		X	X	
Technical Folders	Detail specific information for technical understanding.	Engineering Managers	Infrastructure & Engineering		X	X	
Manufacturers' Equipment Manuals	Provide specifications and working instructions.	Referred to Manufacturer	Infrastructure & Engineering		X	X	
Design Manual (Mechanical) (M3000)	Embodies the principles for the safe design of rail vehicles.	Relevant party	Infrastructure & Engineering			X	

				ACTIVITY			
Supporting Document	**Intent**	**Change Process**	**Document Controller (Business unit or function)**	**Operating**	**Infrastructure Engineering**	**Mechanical Engineering**	**Passenger (on board)**
Mechanical Operations Manual (M5000)	Describes general and depot procedures and records.	Internal	Infrastructure & Engineering			X	
Wheelset Manual (M6000)	Consolidates codes and instructions on wheelsets, bearings and associated practices.	Technical Committee	Infrastructure & Engineering			X	
Code Supplements	Provides detailed instructions in support of core codes.	Technical Committee	Infrastructure & Engineering	X	X	X	
Drawings for construction, maintenance, modification	All approved numbered drawings issued.	Internal	Relevant party		X	X	
Passenger Operations Manual	Describes general procedures.	Internal	Passenger (Operations Managers)				X
Train Attendants Manual	Provides specific instructions for onboard personnel.	Internal	Passenger (Operations Managers)				X

APPENDIX B – Key Rail Safety Responsibilities

Governance	Rail Safety Responsibilities
Board of Directors KiwiRail	• Oversight and monitoring of safe performance of KiwiRail's business, including resource allocation. • Setting safety policies
Safety Human Resources and Environment Committee (Board)	• Reviews safety performance and makes recommendations to Board.
Audit, Financial and Risk Committee (Board)	• Reviews risk status and makes recommendations to the Board.
Tier 1 Management	**Rail Safety Responsibilities**
Chief Executive (CE) KiwiRail Group	Accountable to the Board of Directors for; • The performance of KiwiRail's business in a safe working environment • Providing visible safety leadership • Allocation of appropriate resources to provide a safe and sustainable working environment at KiwiRail • Leading KiwiRail's commitment to the zero harm pledge • Chair of the Health and Safety Executive Committee.
Business Committee	**Rail Safety Responsibilities**
Health & Safety Executive Committee	The Health & Safety Executive Committee is responsible for: • Developing and providing oversight of the implementation of the KR Health and Safety Strategy • Taking active oversight of KiwiRail H&S performance • Taking an overview of H&S across all KiwiRail business units to identify and facilitate the management of cross business H&S issues • Reviewing and responding to H&S concerns that have been escalated to the H&S Executive Committee • Raising and discussing H&S issues of strategic importance and where appropriate, agreeing an approach to the management of these issues • Liaising with the National Rail System Standards Executive on standards and standard setting processes.

Tier 2 Management	Rail Safety Responsibilities
Business Unit General Managers (Group Executive)	Accountable to the Chief Executive for compliance within their business unit with the safety system by: • Providing visible safety leadership • Implementing safety policies and on-going development of the rail safety system • Managing the safety competence and performance of rail personnel • Allocating appropriate resources to provide a safe and sustainable working environment • Promoting safety awareness: • Managing safety risks through identification and assessment • Managing contractors in a way that provides for compliance with the safety system • Assigning competent personnel to key positions of responsibility within their business unit, and providing the appropriate levels of delegated authority.
General Manager Safety and People	Accountable to the CE for: • The provision of a framework of sound corporate safety and environmental policies and processes within which the KiwiRail business operates; sets these policies. • Oversight of KiwiRail's compliance with statutory safety requirements • Maintaining KiwiRail's rail safety licence, including the Safety Case and all variations to it. • Managing KiwiRail's relationship with the rail regulator • Managing KiwiRail's relationship with external investigation agencies • The adequacy of the internal safety audit process to provide safety assurance • The adequacy of the accident/incident reporting and investigation processes • Monitoring the corporate risk register which captures business unit principal safety risks • Co-ordination of the Safety Human Resources and Environment Board Committee • Assuring HR policies contribute to a safe working environment within KiwiRail • Developing collective and individual employment agreements that promote safety awareness within KiwiRail • Oversight of the Company's compliance with employment related safety requirements, ACC partnership program accreditation and associated audit requirements • Co-ordination of the H&S Executive Committee • Managing KiwiRail's relationship with representatives of rail personnel and oversight of the mechanisms established to operate effectively and to provide for safety • Conducting reviews and audits required under the Safety System and managing the recommendations arising from those reviews, external safety assessments and investigations • Ensuring integration of safety across all business units and resolving interface problems between business units.

General Manager Corporate and Finance	Accountable to the CE for: • The provision if a framework of sound corporate risk policies and processes within the KiwiRail business operates; sets these policies • Co-ordination of the Audit Finance and Risk Board Committee.
General Manager Freight	Accountable to the CE for: • Acquisition and management of freight assets in accordance with codes, standards, and good safety practice. • Maintenance of freight assets, the passenger rail vehicle fleet, and Infrastructure & Engineering service wagons in accordance with codes, standards, and good safety practice. • Implementing and managing the interfaces with Auckland Metro Services for the provision of maintenance services to Veolia and Greater Wellington Regional Council, and LEs and locomotives to Veolia, and for some services to GWRC.
General Manager Passenger	Accountable to the CE for: • Acquisition and management of passenger assets in accordance with codes, standards, and good safety practice. • Implementing and managing the interface with Greater Wellington Regional Council for the provision of Tranz Metro services, including supplying LEs.
General Manager Infrastructure & Engineering	Accountable to CE for: • Asset management relating to Infrastructure & Engineering operations, plant, equipment and rolling stock • The General Manager Infrastructure & Engineering is responsible for the provision and adequacy of design, construction, maintenance (and for roiling stock, operational) standards and codes specific to the mechanical and infrastructure engineering disciplines.

Tier 3 Management	Rail Safety Responsibilities
Tier 3 General Managers	Accountable to GM of their business unit for: • Providing visible safety leadership • Identifying, assessing and managing safety risks related to their area of operations • Promoting safety awareness among their employees, contractors, customers, suppliers, and visitors • Managing contractors in a way that provides for compliance with the safety system • The safety competence and performance of all direct reports • Ensuring staff are trained and hold current competency to undertake their rail safety activities • Placement of competent personnel in key positions of responsibility within their area of responsibility, and providing the appropriate levels of delegated authority • Closing out safety recommendations relating to their areas of responsibility • Drafting rail licence variations within their area of accountability.
National HSE Manager	Accountable to General Manager Safety & People for: • Providing visible safety leadership • Providing HSE advice and support to KiwiRail operations and site HS Action Teams. • Providing Health & Injury Prevention and Injury & Illness Rehabilitation advice and support to KiwiRail operations. • Coordinating KiwiRail participation in the external annual ACC audit. • Interfacing with MBIE, ACC and other parties on HSE safety issues. • Providing HSE advice to the SHREC and the HSE Executive.

National Standards & Risk Manager	Accountable to General Manager Safety & People for: • Providing visible safety leadership • Developing the plan for, and monitoring the effectiveness of HSE audits for KiwiRail. • Oversight of operations risk activities and monitoring of operational risk trends. • Developing and maintaining the rail Safety Case and managing variations for KiwiRail rail business units. • Coordinating KiwiRail participation in the external annual safety assessment. • Overseeing the rail occurrence investigation process and implementation of safety recommendations for KiwiRail. • Interfacing with the rail regulator and other parties (e.g. heritage organisations) on rail interoperability, operating and safety issues. • Implementing and managing the interfaces with Auckland Metro Services specifically relating to rail licence responsibilities • Developing and managing the NRSS suite of documents • Facilitating KiwiRail involvement in the NRSS Executive, and providing advice to the SHREC and HSE Executive on rail operational safety. • Preparing the annual safety performance report for NZTA. The National Standards & Risk Manager is responsible for maintaining the Rail Operating Rules and Procedures (RORP), Local Network Instructions, Rail Operating Code, Rail Operating Code Supplements, Freight Handling Code, and the Hazardous Goods Instructions, and ensuring their adequacy.
National HSE Improvement & Innovation Manager	Accountable to General Manager Safety & People for: • Providing visible safety leadership • Maintaining the KiwiRail I&I team. • Developing and implementing HSE safety improvements. • Develop, hold and communicate the 3 and 10 year plan for safety • Benchmarking H&S initiatives against best practice in NZ and Australia.
General Counsel	Accountable to General Manager Corporate and Finance for: • Monitoring safety legislation and providing advice to KiwiRail on its implications. • Providing legal perspectives and advice to the business regarding the legal implications of policies and procedures in order to support safe, high performance business outcomes. • Management of safety related prosecutions and litigation against KiwiRail.

General Manager Network Engineering - Infrastructure & Engineering	Accountable to General Manager Infrastructure & Engineering for: • Provision of appropriate resources in the Network Engineering group for the development of policies, rules, standards, procedures and documentation • Monitoring and review of the appropriateness of the policies, rules, standards, procedures and documentation • The effective operation of the Network Engineering Technical Committees and the Infrastructure & Engineering Standards Committee • Maintaining the Infrastructure & Engineering risk register • Providing input to and supporting the Infrastructure & Engineering internal audit programme • Maintaining an overview of Infrastructure & Engineering compliance reporting and trends • Authorising for issue Infrastructure & Engineering standards, codes and rules recommended by engineering managers • Authorising designs recommended by engineering managers.
General Manager Mechanical Engineering - Infrastructure & Engineering	Accountable to General Manager Infrastructure & Engineering for: • Provision of appropriate resources in the Mechanical Engineering group for the development of policies, rules, standards, procedures and documentation • Monitoring and review of the appropriateness of the policies, rules, standards, procedures and documentation • The effective operation of the Mechanical Engineering Technical committees • Maintaining the Mechanical Engineering risk register • Providing input to and supporting the Mechanical Engineering internal audit programme • Maintaining an overview of Mechanical Engineering compliance reporting and trends • Authorising for issue Mechanical Engineering standards, codes and rules recommended by engineering managers • Managing the authorising of designs recommended by engineering managers.
General Manager Network Performance - Infrastructure & Engineering	Accountable to General Manager Infrastructure Engineering for: • Setting asset management policies and Network investment priorities. • Implementing and managing the access interface with all operators on the National Rail System • Controlling operations on the National Rail System. • Coordinating the capture, accountability allocation and close out process for Infrastructure & Engineering rail occurrences • Coordinating Infrastructure Engineering Participation in the external audit plan for Infrastructure & Engineering • Monitoring compliance reporting trends.
General Manager Project Management Office - Infrastructure & Engineering	Accountable to the General Manager Infrastructure Engineering for: • Maintaining compliance with rail operational and engineering standards, rules, codes and procedures.

Regional Managers – Infrastructure & Engineering	Accountable to the General Manager Infrastructure & Engineering for: • Inspecting and certifying third party rail infrastructure where contracted • The safe carrying out of work within their area of responsibility • Identifying, assessing and managing the hazards and safety risks related to their areas of responsibility • Managing contractors compliance with safe working practices and site safety plans • Promoting safety awareness among all employees, contractors, customers, suppliers, and visitors • Provision of staff with competencies and training that are adequate and current • Maintaining compliance with rail operational and engineering standards, rules, codes and procedures • Prioritising and managing inspections and maintenance.
HR Manager – Infrastructure & Engineering , Passenger and Freight	Accountable to respective business unit GM's for: • Provision of adequate safety training programmes to the business unit • Maintaining the effectiveness of the delivery of safety training programmes.
General Manager Operations - Freight	Accountable to GM Freight for: • Implementing, and maintaining compliance with, rail operational standards, rules, codes and procedures including Locomotive Engineer rostering agreements • Currency of, and compliance with, Joint Operating Plans • Setting and managing priorities for freight terminal maintenance • Identifying, assessing and managing risks related to Freight operations • Promoting safety awareness among all Freight employees, contractors, customers, suppliers, and visitors • Managing contractors in a way that provides for compliance with the safety system • The safety competence and performance of all direct reports • Provision of staff that are trained and hold current competency to undertake their rail safety activities.

Tier 4 Management	Rail Safety Responsibilities
Discipline Specific Engineering Managers – Infrastructure & Engineering (i) Track (ii) Structures (iii) Signals & Telecommunications (iv) Traction & Electrical	Accountable (within their specific engineering discipline) to General Manager Network Engineering & Standards – Infrastructure & Engineering for: • Provision of appropriate engineering standards, procedures and documentation • Monitoring compliance with engineering standards, procedures and documentation • Reviewing standards and procedures for accuracy, currency and relevance • Appointment of competent personnel to key positions of responsibility within their group, and that they have the appropriate levels of delegated authority • The conduct of Technical Committee functions including adequate consideration of interface and interoperability issues • Managing safety risks that have been considered in the development of engineering standards, procedures and documentation • Monitoring compliance reporting trends relevant to their engineering discipline • Providing the final technical sign-off of all new and revised codes, standards and rules submitted to GM Engineering and Standards for authorisation to issue • Recommend authorisation of designs.
Manager Network Operations	Accountable to General Manager Network Performance for: • Delivery of train control and signal box services • Delivery of authorities and issuing bulletins • Delivery of traction control • Delivery of Network Support services.
Line Managers - Infrastructure & Engineering	Accountable to their Manager for: • Inspecting and certifying third party rail infrastructure where contracted • The safe carrying out of work within their area of responsibility • Identifying, assessing and managing the hazards and safety risks related to their areas of responsibility • Managing contractors compliance with safe working practices and site safety plans • Promoting safety awareness among all employees, contractors, customers, suppliers, and visitors • Provision of staff with competencies and training that are adequate and current • Maintaining compliance with rail operational and engineering standards, rules, codes and procedures • Prioritising and managing inspections and maintenance.

Line Managers - Passenger	Accountable to Tranz Metro & Scenic Manager, or directly to GM Passenger business unit for: • The safe carrying out of work within their area of responsibility • Identifying, assessing and managing the hazards and safety risks related to their area of responsibility • Complying with all HSE legislation, regulations, codes of practice, safe operating procedures, and best practice relevant to the individual's responsibility in line with the database of safety tools • Promoting safety awareness among all employees, contractors, customers, suppliers, and visitors, and support and promote the Health and Safety Action Teams • Provision of staff with competencies and training that are adequate and current, and facilitate initiatives designed to improve and enhance the competency and compliance of staff • Maintaining compliance with rail operational standards, rules, codes and procedures. • Prioritising and managing inspections, procedures, documentation and maintenance of safe operations. • Lead and assist in accident/incident management and investigation, and emergency exercises.
Rail Personnel, HSAT & IC	**Rail Safety Responsibilities**
All Rail Personnel	• Rule #1: "The first and most important duty of all Rail Personnel is to provide for the safety of Rail Personnel and the public." • Responsible for their own safety • Responsible for alerting all rail personnel, contractors, customers, visitors and other persons of the rail specific hazards within their work environment • Responsible for the identification, reporting, and initial control of any safety and environment hazard identified within their area of responsibility.
Health & Safety Action Teams	H&S Action Teams are responsible for monitoring and positively influencing safety and environment performance at their respective location and/ or for their functional employment groups.
Business Unit Industrial Councils	Business Unit Industrial Councils provide a regular forum for information sharing and debate between KiwiRail business units and the RMTU on safety related (and other) matters that are of mutual interest and have wide application.

APPENDIX C – Technical Committees

Industry-wide Technical Committees

There are 4 technical committees that have responsibilities for the whole rail industry, not just KiwiRail. These are set up under the National Rail System Standards ("NRSS"), and while compliance with the NRSSs is part of KiwiRail's safety system (and Safety Case) the standards and committees themselves are outside that system

The NRSS Executive (NRSS-E) overviews the standards, provides a forum for discussion on them, and reviews and approves changes (including discussing changes that are not covered by existing NRS Joint Technical Committees). NRSS/2, (Safety Management) section 8.4.1, provides that the membership of NRSS-E is to be senior technical experts only.

NRSS/2 establishes two Joint Technical Committees to manage ongoing development of the NRS Rail Operating Rules and Procedures, NRSS/7 (Rail Operations Interoperability) and NRSS/6 (Engineering Interoperability). These committees also provide technical advice to the NRSS Executive. The committees are:

- Joint Technical Committee – Engineering Interoperability (JTC-EI)
- Joint Technical Committee – Rail Operating Rules and Procedures (JTC –RORP). Under this committee is a subsidiary committee, the Rail Operating Code Technical Committee.

NRSS/11 (Heritage Vehicle and Train Management) sets up two further Joint Technical Committees to manage heritage technical and operational issues:

- Joint Technical Committee - Heritage Technical Committee (JTC-HTC)
- Joint Technical Committee - Heritage Operating Committee (JTC-HOC)

KiwiRail is a member of each of these committees and provides technical, secretarial, and administrative support to them.

KiwiRail's Own Technical Committees

KiwiRail has a number of its own technical committees. Currently, there is one overall committee and six discipline-specific committees.

The KiwiRail I & E Standards Committee considers technical, engineering, and operational matters of a general nature and which do not fall within the responsibility of any of the specialist committees. It also considers risk and safety issues affecting I & E. It thus acts as a coordinator for cross-discipline issues, and adjudicator where a resolution is required.

Each discipline specific committee carries out activities towards the purposes set out in paragraph 3, for that discipline. The committees are:

- KiwiRail I & E committees
  - Track Technical Committee
  - Signals and Telecommunications Technical Committee
  - Traction and Electrical Technical Committee
  - Structures Technical Committee
  - Mechanical Technical Committee (I&E plant and equipment)
- KiwiRail Group Rolling Stock Technical Committee (GRSTC). This committee has 3 subsidiary committees:
  - Locomotive Technical Committee (LTC)
  - Wagon Technical Committee (WTC)
  - Passenger Technical Committee (PTC).

The primary purposes of the discipline specific technical committees are to:

- Review and ratify policies, standards, rules, procedures and principles specific to the discipline concerned.
- Ratify use of new equipment and processes (where significant risk could be introduced)
- Review failure and occurrence trends
- Where assigned, review and ratify the recommendations from investigative reports into occurrences with a significant risk profile and recommend further action where necessary.
- Oversee discipline specific training [and] competency standards, and ratify competency levels of rail workers (where requirements are not adequately covered in standing documentation).
- Overview the quality if the outputs.

The Technical Committee shall recommend for approval the following discipline specific documents before issue or reissue:

- Codes
- Code Supplements/supplements supporting codes
- Task Instructions
- Office Section Procedures/Design Manual
- Other designated instructions.

The Technical Committee should also ratify any discipline specific Significant Information Notices (SINs) at the first meeting after their issue.

APPENDIX D – Geographical Coverage – List of Lines

Operational National Rail System: North Island

Line Name	Section	Distance (km)	
		Single track	Double track
North Auckland Line	Waitakere – Otiria	245	
Whangarei Port Branch	Whangarei Jn* – Port	2	
Dargaville Branch	Waiotira - Dargaville	49	
North Auckland Line (metro)	Westfield Jn – Waitakere	4	32
Newmarket Line	Newmarket – Quay Park Jn		3
Onehunga Branch	Penrose Jn – Onehunga	3	
Manukau Branch	Wiri Jn - Manukau		2
NI Main Trunk (Auckland metro)	Pukekohe – Auckland Station		53
Southdown Branch	Westfield Jn – Southdown	1	
NI Main Trunk	Waikanae – Pukekohe	500	74
Mission Bush Branch	Paerata Jn– Mission Bush	17	
Rotowaro Branch	Huntly Jn- Rotowaro	9	
East Coast Main Trunk	Hamilton Jn – Kawerau	181	
Hautapu Branch	Ruakura Jn – Hautapu	15	
Waitoa Branch	Morrinsville Jn – Waitoa	11	
Kinleith Branch	Waharoa (West) Jn – Kinleith	65	
Rotorua Branch	Putaruru Jn – 1.5km	2	
Mt Maunganui Branch	Te Maunga Jn – Mt Maunganui	7	
Murupara Branch	Kawerau – Murupara	57	
Marton – New Plymouth Line	Marton Jn – Breakwater	213	
Kapuni Branch	Te Roti Jn – Kapuni	11	
Wanganui Branch	Wanganui Jn – Wanganui	6	
Castlecliff Line	Wanganui – 2.91km	3	
Palmerston North -Gisborne Line	Palm Nth Jn – Sth of Westshore Bridge	181	
Napier Freight Branch	Napier Jn – end Kiwirail line 3.96km	4	
NIMT (Wellington metro)	Wellington Station- Waikanae	4	51**
Johnsonville Branch	Wellington Station –Johnsonville	10	
Melling Branch	Petone Jn – Melling	3	
Gracefield Branch	Woburn Jn – 1.8km	2	
Wairarapa Line (Wellington metro)	Wellington Jn – Masterton	60	29
Wairarapa Line	Masterton – Woodville Jn	81	
NI total		1745	245

- * "Jn" is short for junction. **includes short section of triple track
- Columns may not add to totals because of rounding errors
- NI total all lines: 1990 route km

Operational National Rail System: South Island

Line name	Section	Distance (km)	
		Single track	Double track
Main North Line	Addington - Picton	348	
Main South Line	Port Lyttelton – Invercargill	583	19
Midland Line	Rolleston – Greymouth Freight	211	
Hornby Branch	Hornby – end of line 2.98km	3	
Rapahoe Branch	Omoto – Rapahoe	10	
Hokitika Line	Greymouth Freight – Hokitika	36	
Stillwater – Ngakawau Line	Stillwater – Ngakawau	164	
Port Chalmers Branch	Sawyers Bay – Port Chalmers	1	
Taieri Branch	Wingatui – end of KiwiRail line 3.5km	4	
Finegand Branch	Balclutha – Finegand	3	
Ohai Line	Invercargill - Nightcaps	79	
Bluff Line	Invercargill – Bluff	27	
SI Total		1468	19

- Columns may not add to totals because of rounding errors
- South Island total all lines: 1487 route km

Operational National Rail System totals: 3213 km single track; 263 km double track, total 3477 route km (totals corrected for rounding errors).

Non-operational Lines – disused, mothballed or leased

Line name	Section	Distance (km)	
		Single track	Double track
Rotorua Branch	1.5km – Rotorua	46	
Taneatua Branch	Hawkens Jn – Taneatua	26*	
Stratford – Okahukura Line	Stratford Jn– Okahukura	143	
Castlecliff Branch	2.91km –end of line	2	
Palmerston North – Gisborne Line	Sth of Westshore Bridge – Gisborne^	209	
Makaraka Branch	Branch points – Makaraka	3	
Total		430	0

- *Planned to be shortened by about 2km
- Columns may not add to totals because of rounding errors
- ^ Monthly hi-rail inspection trips will be run on this line until it has been leased.

APPENDIX E – Coverage of the Act in this Safety Case

Section in Act	Description	Section in Safety Case
Section 30:		
30(1)(a)	Rail activities, extent and geographical location	1, 2, 3, 4, 5, Appendix D
30(1)(b)	Safety policy and objectives; how implemented	6
30(1)(c)	Management and organisation	1, 7
30(1)(d)(i)	Systems to identify and assess safety risks	7
30(1(d)(ii)	Systems to develop and implement risk controls	7
30(1)(e)	Safety risks and measures to mitigate them	7, 9, 10, 11, 13
30(1)(f)	Ensuring interoperability arrangements promote safety	3, 9, 12, 13
30(1)(g)(i)	Assets and equipment fit for purpose	10, 11, 13
30(1)(g)(ii)	Safety critical tasks and activities identified	7
30(1)(g)(iii)	Safety critical staff have appropriate training	7
30(1)(g)(iv)	Competence of safety critical staff is appropriately tested	7
30(1)(g)(v)	Practices and procedures fit for purpose	7
30(1)(h) intro	Evidence that practices & procedures working as intended	7
30(1)(h)(i)	Identification of key safety performance factors including accidents and incidents	7
30(1)(h)(ii)	Monitoring and reporting of key performance factors including accidents and incidents	7
30(1)(h)(iii)	Supervision, inspection, monitoring, audit of Safety Case, safety system, licence conditions	7
30(1)(h)(iv)	Providing evidence to NZTA on s30(h)(i)-(iii) matters	7
30(1)(i)	Agreeing frequency of ordinary safety assessments	7
30(1)(j)	Reporting safety issues to other rail participants re vehicles, infrastructure, premises	12
30(1)(k)(i)	Policies to ensure staff are fit for duty	7
30(1)(k)(ii)	And not suffering from impairment	7
30(1)(l) intro	Ensuring safety maintained/improved despite changes	6, 8
30(1)(l)(i)	Continuous review to identify potentially significant changes	8
30(1)(l)(ii)	Review and revision of Safety Case and safety system	2, 8
30(1)(l)(iii)	Identification of significant risks and measures to reduce	7, 8, 9, 10, 11
30(1)(m)	Consultation with staff representatives	6
30(1)(n)	Any other matters in rules or as NZTA require	2008 Regulations do not apply to KiwiRail except for fees; Safety Performance Report see section 2; no other requirements notified by NZTA
Other sections:		
7	General safety duty	6, 7
8	Relationship with Health and Safety in Employment Act	1, 2, 6, 7, 13
13	Duties re Accidents and incidents	7

14	Compliance with DG sections of Land Transport Act	9
21(2)(a)	Safety Liaison Officer	2
21(2)(c)	Reporting to NZTA	2, 7
22	Agents and contractors	5, 13
29(2)(b)	Consistency with safety system	2
31(2)(c)	Ability to maintain & review safety system & Safety Case	7, 8
31(2)(d)	Training and supervision	7