ONRSR Guideline

Safety Management System

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Policy changes to version 2.0

> Minor updates to sections 6.9, 6.23, 6.28, 6.29 and Appendix 1 to align with the introduction of new reporting requirements under the national rail safety data strategy.

Policy changes to version 2.1

> Document updated to include the new element 20A Interoperability of Railway Operations in accordance with new clause 20A in Schedule 1 of the *Rail Safety National Law National Regulations 2012*.

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About the Office of the National Rail Safety Regulator

Our primary objectives are to encourage safe rail operations, ensure compliance with the *Rail Safety National Law* (RSNL) and to promote and improve national rail safety. We provide regulatory oversight of the RSNL throughout Australia. Through memorandums of understanding, the Office of the National Rail Safety Regulator (ONRSR) also works with other agencies, including the Australian Transport Safety Bureau (ATSB), National Transport Commission and workplace safety authorities, to improve national rail safety performance.

The RSNL sets out our functions as being:

> to administer, audit and review the accreditation regime under the RSNL;

> to work with Rail Transport Operators (RTOs), rail safety workers and others involved in railway operations to improve rail safety nationally;

> to conduct research and collect and publish information relating to rail safety;

> to provide, or facilitate the provision of, advice, education and training in relation to rail safety;

> to monitor, investigate and enforce compliance with the RSNL;

> to engage in, promote and coordinate the sharing of information to achieve the objectives of the RSNL, including the sharing of information with prescribed authorities (such as the ATSB and the Rail Industry Safety Standards Board (RISSB)).

Disclaimer

This guideline is a guide only and is intended to be read in conjunction with the legislation and relevant ONRSR policies. The guideline itself imposes no legal duty and where actions or requirements are described as mandatory these reflect requirements in the RSNL or *Rail Safety National Law National Regulations 2012* (the National Regulations). It is not intended to replace the legislation or to limit or expand the scope of the legislation. In the event of an inconsistency between this guideline and the legislation, the legislation will prevail. It is recommended that you obtain your own independent legal advice about the legislation or contact ONRSR for further information.

There is no requirement that a RTO's safety management system be structured, or presented, exactly in line with the structure of the legislation or this ONRSR guideline. The primary objective is to ensure that the people who use the system find it:

> comprehensible,

> simple and user friendly as reasonably possible and

> achieves the objective – a high level of safety awareness and commitment throughout all levels of the RTO.

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Abbreviations

Abbreviation	Explanation
RTO	Rail Transport Operator as defined in Section 4 of the RSNL
SMS	A safety management system (SMS) provides a systematic approach to managing safety risks, including organisational structures, roles, responsibilities, accountabilities, codes, policies, standards, communication, tools, data, processes, procedures and documents.
RSNL	The Schedule to the Rail Safety National Law (South Australia) Act 2012 (SA).
Regulations	Rail Safety National Law National Regulations 2012
Railway Operations	As defined in Section 4 of the RSNL
ONRSR	Office of the National Rail Safety Regulator
ATSB	Australian Transport Safety Bureau
RISSB	Rail Industry Safety Standards Board
ARO	Accredited Rail Operator
SFAIRP	So Far As Is Reasonably Practicable
SPR	Safety Performance Report
NNI	National Network for Interoperability
IMP	Interoperability Management Plan

1.1   Background

1.1.1   Legislative Requirements

Overview of the RSNL and regulations

Accredited RTOs are subject to the requirements of the RSNL and Regulations as administered by ONRSR.

The RSNL has been enacted as a Schedule to the *Rail Safety National Law (South Australia) Act 2012 (SA)*.

The *Rail Safety National Law National Regulations 2012* (Regulations) are made under the RSNL.

The RSNL imposes rail safety duties on RTOs, rail safety workers and other duty holders as well as creating ONRSR to administer the RSNL, recognising that it shares responsibility for rail safety with these duty holders to support a co-regulatory approach.

Key objectives of the RSNL include:

> provide a scheme for national accreditation of RTOs in respect of railway operations;

> provide for the effective management of safety risks associated with railway operations;

> provide for the safe carrying out of railway operations;

> provide for continuous improvement of the safe carrying out of railway operations;

> promote public confidence in the safety of transport of persons or freight by rail;

> promote the provision of advice, information, education and training for safe railway operations;

> promote the effective involvement of relevant stakeholders, through consultation and cooperation, in the provision of safe railway operations.

Requirement to have a SMS

It is a legislative requirement of accreditation that RTOs have an appropriate safety management system (SMS) in place. RTOs are legally obliged to implement and then comply with their safety management system.

Division 4 of the Law prescribes the process and requirements for accreditation.

> Section 62 outlines that a person must not carry out railway operations (which includes the types of actions of a RTO) unless accredited or exempt pursuant to section 205.

> Section 64 specifies that the application must be in a form approved by the regulator and what form it must be in, including the requirements of the SMS.). The Regulator may require a RTO who has applied for accreditation to supply further information as requested by the Regulator.

> Section 65 states that the regulator must not grant an accreditation unless satisfied that the applicant has demonstrated the six mandatory criteria including the competence and capacity to manage risks and the competence and capacity to implement the proposed SMS.

Division 6 of the Law prescribes requirements for the SMS.

> Section 99 specifies the requirement for an RTO to have a SMS and for it to be in a form approved by the regulator. The law dictates that it must adopt a risk management approach i.e. identify, assess, control, monitor, review and revise controls, and states that the SMS must address any other matter prescribed by the national regulations. It specifies six mandatory requirements the SMS must contain:

    - managing interface agreements;

    - security management;

    - emergency management;

    - health and fitness;

    - drug and alcohol; and

    - fatigue risk management.

> Section 101 requires the RTO to comply with their safety management program.

Section 264(2) states that the Governor in Council can make regulations which are stated in Schedule 1, which includes requirements, standards qualification or conditions to be satisfied with regard to accreditations (Part 1(a)).

Regulation 16 of the *Rail Safety National Law National Regulations 2012* ('Regulations') states that:

> A safety management system must provide for all of the matters listed in Schedule 1 that are relevant to the railway operations in respect of which the RTO is accredited, or seeking to be accredited, and must provide a level of detail with respect to each of those matters that is appropriate having regard to the scope, nature and risks to safety of those operations, and to the RTO's duties under section 52 (Duties of rail transport operators) of the Law.

Schedule 1 provides for each of the matters to be in a safety management system. It is these matters for which this guideline provides further information.

How this guidance supports the RSNL

Guidance materials support the Regulations and the overarching Act by providing greater details to operators on performance expectations
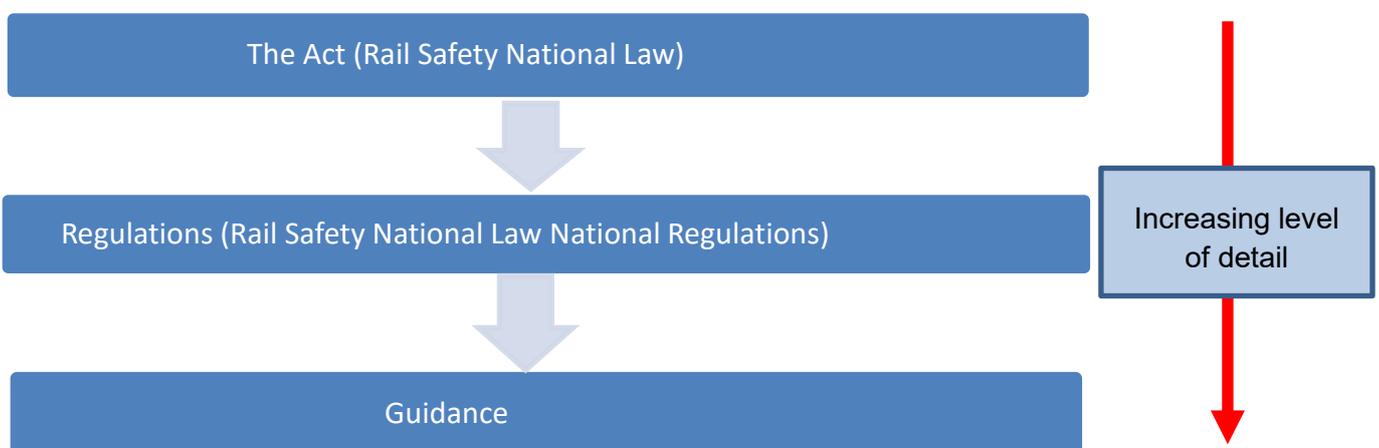
By publishing guidance ONRSR aims to provide clarity to aid operators in creating and applying a more robust accreditation system[1].

Standards

This guideline is to be used in conjunction with the RSNL and any other authoritative safety information including applicable Australian and International Standards relevant to the state of knowledge about hazards and risks and ways to manage them.

1.1.2 Overview of Safety Management Systems

What is a safety management system?

A safety management system (SMS) provides a systematic approach to managing safety risks including organisational structures, roles, responsibilities, accountabilities, codes, policies, standards, communication, tools, data, processes, procedures and documents. A SMS is scalable so it can be tailored to the size and complexity of the organisation.

A successful SMS will implement systems and procedures to reduce or mitigate rail safety risks.

Definitions:

> Definitions provided by the RSNL and National Regulations apply within this guideline.

> Where terms are not defined within legislation the Macquarie Dictionary definition applies.

Integrated Safety Management Systems and Common Elements

While the SMS is only mandatory in relation to railway operations for which accreditation is held, RTOs may consider developing one SMS for the whole of their organisation and not limit it only to railway operations.

An integrated approach in developing a SMS across all elements of the RTO (e.g. risk management, accountabilities, human factors and safety assurance) will have the greatest effect in managing safety. The ATSB confirmed in a study that incorporating safety management systems into normal business operations does reduce accidents and improve safety in high-risk industries[2].

Although individual elements of a SMS have a stronger influence on safety over others, organisational leadership, communication and education regarding all aspects of the SMS will have a significantly positive impact on developing a safety culture. RTOs that provide an appropriate investment and commitment to a safety management system should receive a positive return on safety[3].

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[1] Final Report of the Special Commission into the Waterfall Rail Accident 2005 (*pp*. 296).
[2] Australian Transport Safety Bureau ATSB (2011) Transport Safety Report Occurrence Investigation Final Investigation A systematic review of the effectiveness of safety management systems XR-2011(*pp*. iii). https://www.atsb.gov.au/media/4053559/xr2011002_final.pdf.
[3] Australian Transport Safety Bureau ATSB (2011) Transport Safety Report Occurrence Investigation Final Investigation A systematic review of the effectiveness of safety management systems XR-2011(*pp*. iii). https://www.atsb.gov.au/media/4053559/xr2011002_final.pdf.

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Why is a SMS Important?

Studies have demonstrated that a well-implemented SMS, especially those where the organisation invests effort, is associated with enhanced safety performance[4].

Several accident and incident investigation reports for example: Glenbrook, Waterfall, Clapham Junction and Piper Alpha, all reinforce that the concept of <u>safety must be at the forefront of thinking at all times</u>.

Where activities are inherently hazardous effective safety management requires that the organisation has the capacity to identify, assess and control risks and this requires effective and competent management. The task must be done on a planned and systematic basis. This involves identification of hazards, an analysis of the risks associated with the hazards and of the controls or defences put in place to prevent the risk from materialising into an incident or accident. If the risk cannot be completely removed then there must be efficient controls to reduce it so far as is reasonably practicable. The process of identifying hazards involves using safety data from the organisation and other similar organisations. It is also necessary to keep accurate and reliable documentation to provide a basis for review and validation of a SMS.

The SMS must be capable of systematically and continually identifying hazards, assessing them and eliminating, controlling or defending against the result and risks to persons or property that the hazards may create.

The purpose of developing such management processes is to enable the organisation to

anticipate and not merely react to hazards that have arisen[5].

Relationship to occupational/work health and safety

There are many areas of similarity between rail and occupational / work health and safety (OHS). Both OHS and RSNL require:

> compliance with non-delegable general safety duties which includes the requirement to minimise risk SFAIRP;

> risk/hazard identification, assessment, control and review;

> consultation on safety matters;

> the provision of training, information, instruction to, and supervision of workers; and

> compliance with particular risk control measures for certain known areas of risk.

Rail safety legislation adds to the protection provided by occupational health and safety legislation. Occupational/work health and safety and rail safety management systems essentially work to the same goal. They are therefore well suited to integration.

All employers in Australia are subject to safety duties imposed by OHS legislation. The RSNL adds to the protection provided by OHS legislation and both sets of legislation apply to RTOs.

It is important to note that if a provision of OHS legislation applies to railway operations, that provision continues to apply, and must be observed, in addition to the RSNL.

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[4] Australian Transport Safety Bureau ATSB (2011) Transport Safety Report Occurrence Investigation Final Investigation A systematic review of the effectiveness of safety management systems XR-2011(*pp*. 27). https://www.atsb.gov.au/media/4053559/xr2011002_final.pdf.

[5] Final Report of the Special Commission into the Waterfall Rail Accident 2005 (*pp*. 64).

Occupational health and safety legislation takes precedence over the RSNL if it is found that there is an inconsistency between the requirements of each (RSNL s48 (2)).

Compliance with the RSNL is not of itself a defence for proceedings for an offence against OHS legislation. RTOs are encouraged to seek independent legal advice if required on this matter.

2   Purpose

The purpose of this guideline is to provide accredited RTOs, and those seeking accreditation, with the following:

> guidance to duty holders about their duties and related obligations under the RSNL; and

> ONRSR's minimum expectations when reviewing the processes and associated evidence used to demonstrate that safe outcomes are being planned and, ultimately, have been achieved.

ONRSR will take these guidelines into consideration as part of its regulatory activities including reviewing the SMS of the RTO and those seeking accreditation.

The primary aim of the guideline is to provide additional detailed information to the RTO on each element in the Schedule of the Regulations. The RTO can then use this guideline to assist in developing an effective SMS.

3   Scope

The scope of the SMS applies to all railway operations as defined in section 4 of the RSNL.

This guideline covers Schedule 1 – Content of safety management system of the Regulations.

This guideline applies to RTOs who must have a SMS for those railway operations for which they are required to be accredited pursuant to ss. 99(1) of the RSNL.

This guideline applies to RTOs that operate on, or form part of the National Network for Interoperability (NNI).

This guideline may nevertheless be useful to other persons who have safety duties under the RSNL in managing risks to safety.

4   Structure of the Guide

The sections that follow align with the provisions in Schedule 1 of the Regulations for ease of reading. For example: Clause 5 in Schedule 1 of Regulations, can be found in Par 6.5 and will relate to Management, responsibilities, accountabilities and authorities.

To aid the user further the document will follow the same style in each paragraph.

Reference to legislation/regulations

This will be a description as to where the regulation can be found.

Descriptor

In layman's terms a short description of what the section is trying to achieve in relation to safety in the SMS.

> **As a minimum ONRSR expects**
>
> These will be short text sections explaining in layman's terms what ONRSR will take into consideration as part of its regulatory activities including reviewing applications and auditing the SMS. The sections consist of headings where multiple topics needs to be addressed and a series of bullet points to make understanding of the material easier.

5 How to develop a compliant SMS

This section of the guideline explains the basic steps that a RTO may follow to develop a SMS that is compliant with RSNL.

It explains and places in context the various mandatory elements of the SMS to make it clearer how the system fits together and may be integrated with broader management systems and processes of the RTO.

Appendix 1: References and resources - provides a list of resources that may be of further assistance to a RTO when they are developing their SMS.

The SMS, like many other management systems, is founded on a cyclical process of planning, implementation, monitoring the system, and taking action to improve performance in the light of what has been learnt. This process aims for and, if effectively carried out, results in continuous improvement of the system and an increasing ability of the system to achieve the objectives. In the case of the rail SMS the system objective is the safety of railway operations.

The following sections explain how the mandatory safety management requirements of the RSNL come together to form the SMS and how accredited RTOs might go about establishing these systems to meet safety management obligations.

The following steps are required for the development of a SMS:

1. Identify the scope of operations the SMS will cover

    a. Review the definition of railway operations.

    b. In the case of an application for accreditation the applicant will need to identify what railway operations they undertake that will require accreditation

    c. For existing accreditation the scope will be noted in the notice of accreditation

    d. The SMS must provide a level of detail in each mandatory element that is appropriate considering the scope, nature and risks to safety of the railway operations being undertaken and the need to comply with the general safety duties.

2. Establish governance arrangements and allocate resources (including responsibility for developing the SMS).

    a. Get the commitment to safety and the leadership provided by the highest levels of management through appropriate governance and internal control arrangements and provision of appropriate resources for the development of the SMS.

    b. The highest levels of management accept responsibility and delegate tasks necessary for the development of the SMS.

    c. As the system grows and tasks and responsibilities for safety are identified, the responsibility for those tasks needs to be clearly assigned and documented.

3. Establish consultation arrangements or a consultation plan.

   a. Once governance arrangements are in place and resources have been allocated, the RTO will need to put in place consultation arrangements or develop a consultation plan. Refer to Section 6.13.

   b. Consultation must be undertaken before establishing the SMS.

   c. Consultation arrangements may evolve over the life of the project as new staff are engaged and the system requirements are developed.

   d. The best results are achieved when consultation is undertaken throughout the development of the SMS. Effective consultation promotes a positive safety culture by encouraging a sense of ownership for safety among those consulted and gives the best chance that the systems implemented will meet the objectives of the organisation.

4. Establish safety policy.

   a. The safety policy gives direction for the further development of the SMS. Develop the policy consultatively to promote a sense of ownership for safety among those who are to implement the SMS. Refer also to sections 6.2 and 6.22.

   b. RTOs are required to have a broad safety policy and an asset management policy.

5. Establish risk management systems and procedures.

   a. Risk management is the driving force behind the SMS. Risk management systems and procedures, when appropriately implemented, will provide the information required for the development of the rest of the system.

   b. Risk management systems and procedures must cover the:

      (i) identification of risks to safety associated with the operator's railway operations;

      (ii) comprehensive and systematic assessment of identified risks;

      (iii) specification of the control measures to be used to manage the identified risks;

      (iv) monitoring, review and revision of the adequacy of those control measures; and

      (v) reporting on the risk profile of the railway operations and effectiveness of the SMS to those who manage the railway operations. Refer also to section 6.4.

   c. Risk management systems and procedures should follow the principles described in the latest version of ISO 31000 Risk Management.

   d. Sections 6.16 Risk Management and 6.17 Human Factors provide further guidance on the development and implementation of risk management systems and procedures.

6. Undertake risk assessment activities.

   a. Identify risks to safety associated with the operator's railway operations:

      (i) break railway operations down to their simplest component tasks;

      (ii) identify things that could go wrong at each step of the process or operation and how it is caused (i.e. identify causes as these need to be addressed and managed through effective control measures); and

      (iii) identify possible safety incidents and their causes and contributing factors.

b.   RTOs are required to include a number of measures that provide information supporting the identification of risks:

   (i)   internal reporting of accidents or incidents;

   (ii)   internal reporting of hazards and risks to safety;

   (iii) consultation;

   (iv)   reporting and investigation of notifiable or other occurrences;

   (v)   safety assurance activities (e.g. audits and inspections); and

   (vi)   any other information which provides information on the safety of the system (e.g. testing and associated results, monitoring maintenance outcomes, reports from train drivers or operators of rolling stock).

c.   Analyse risks and identify control measures:

   (i)   identify the potential causes and consequences of each risk;

   (ii)   estimate the likelihood and severity of the identified consequences;

   (iii) identify ways of preventing the risk from arising (preventative control measures);

   (iv)   identify ways of mitigating the consequences (mitigative control measures);

   (v)   evaluate the effectiveness of any existing control measures in reducing the risk. This can be informed by outcomes of assurance activities, such as safety audits and inspections, which provide information about the performance of control measures and the safety of railway operations. Refer also to sections ☐ and 6.10;

   (vi)   assign an appropriate risk rating or ranking to support decision making and inform the prioritisation of risk management activities; and

   (vii) evaluate the practicability of any newly proposed control measures to determine those necessary to reduce risk SFAIRP.

d.   The more complex the operational system subject to risk assessment, the more comprehensive the assessment should be. Refer also to section 6.16.

7.   Implement control measures and supporting mechanisms for risk control measures.

a.   Accredited RTOs are required to comply with a number of prescribed risk control measures. These include systems and procedures for:

   (i)   human factors;

   (ii)   general engineering and operational systems safety;

   (iii) process control;

   (iv)   security management;

   (v)   emergency management;

   (vi)   rail safety worker;

      >   competence management;

      >   fatigue management;

      >   prevention of drug and alcohol use affecting human performance and thus railway operations;

      >   health and fitness management; and

(vii)   management of change.

b. The regulatory requirements for the prescribed risk control measures are necessarily generic. The risk assessments conducted by the RTO provide the detail required for the development and implementation of these systems and procedures.

c. In addition to prescribed risk control measures, RTOs are required to implement any risk control measures identified and deemed reasonably practicable through the risk assessment process.

d. Having identified the necessary risk control measures, the RTO will need to identify what supporting systems and procedures are required to ensure their effective implementation. The RSNL imposes a number of mandatory supporting mechanisms:

(i)   **regulatory compliance** – this includes systems and procedures for identification of, and compliance with, regulatory requirements;

(ii)   **document control and information management** – this includes broad organisational systems to ensure that rail safety workers and others have access to current and/or accurate information necessary for the conduct of their role in the system;

(iii)   **internal communication** – this includes systems to support the dissemination of information to those who are to participate in the implementation of the system or who may be otherwise responsible for, or affected by, the implementation;

(iv)   **procurement and contract management** – this includes systems to ensure that contracting for goods or services takes account of the necessary safety aspects;

(v)   **safety interface coordination** – this includes systems to ensure that where risks occur at or arising from an interface, the responsibility for risk controls is appropriately assigned and understood by all those with a role in the implementation of the control as well as monitoring compliance to the implementation; and

(vi)   **resource availability** – this includes systems to ensure that the necessary resources are available for the implementation of necessary risk controls.

8. Training and instruction

a. Now that the system is developed you need to ensure the people affected by the system get the necessary training in order for them to execute their work in a safe and compliant way.

b. Establish programs for inductions, ongoing training and ongoing information sharing in order to encourage awareness, understanding and participation of the rail safety worker in relations to the SMS.

9. Establish and implement systems for monitoring review and system improvement.

a. RTOs are required to include in the SMS measures to support monitoring and review of the performance of the SMS. The RSNL requires the following mandatory systems and procedures for system monitoring and review:

(i)   **review of the SMS** – this includes systems and procedures for regular review of the effectiveness of the SMS;

(ii)   **safety performance measures** – this includes systems to ensure the collection, analysis, assessment and dissemination of safety information and the measurement and assessment of system performance using key performance indicators;

(iii) **safety audit arrangements** – this includes systems to ensure that safety audits are undertaken and that priority is given to matters that represent the greatest safety risk; and

(iv) **corrective action** – this includes systems to ensure action is taken to correct deficiencies identified in the SMS and that priority is given to taking corrective action on those matters representing the greatest risk.

6 Content of Safety Management System

6.1 Interpretation

Reference to legislation/regulations:

Clause 1 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

In this Schedule a reference to the chief executive and governing body of the RTO includes a reference to any other person or body that has control of the RTO.

As a minimum ONRSR expects:

> Organisational structure outlining the senior management of the organisation is defined.

> The responsible party/body that has the ultimate control of the RTO is identified.

6.2 Safety policy

Reference to legislation/regulations

Clause 2 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The safety policy formally outlines the organisation's understanding of its safety requirements and its commitment to safety. The safety policy influences all the organisation's activities including the selection of staff, equipment and materials, and the way work is designed and carried out.

As a minimum ONRSR expects:

> The safety policy provides an express commitment to safety.

> The safety policy is formally endorsed by the CEO and Board (and/or any other person or body controlling the RTO).

> The written safety policy and the organisation of, and arrangements for, implementing and monitoring the policy shows staff and anyone else that all hazards have been identified and the risks assessed, eliminated or controlled so far as is reasonably practicable (SFAIRP).

> The policy includes a commitment to the development and maintenance of a positive safety culture. The features of a positive safety culture include:

  ▪ competence of staff through recruitment;

  ▪ training and advisory support;

  ▪ control through allocating responsibilities, securing commitment, instruction and supervision;

  ▪ co-operation: between individuals and groups;

- communication with staff in spoken or written or other visible form.

> To be effective the safety policy is to be developed consultatively. This will promote a sense of ownership of safety amongst staff who will implement the SMS.

> The SMS includes processes for the communication of the safety policy and safety objectives to all people who are to participate in the implementation of the SMS.

> The policies of the organisation, when taken as a whole, promote a consistent set of objectives.

- For example, policies that set out standards of conduct or disciplinary processes are consistent with the principles that support a positive safety culture.

> The policy includes processes for the continuous improvement of all aspects of the SMS.

- For example, through measurement of performance against standards and learning from experience through audit and review.

6.3   Safety culture

Reference to legislation/regulations

Clause 3 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The concept of organisational culture describes the shared pattern of basic assumptions held within an organisation which have been developed over time and which drive thinking and behaviour. In everyday language culture is "the way we do things around here". Safety culture is a part of the overall culture of the organisation. Safety culture emerges from all the aspects of the way things are in an organisation and can be considered a part of the organisational culture. Basic assumptions about the way things are may be unconscious and spread across the whole organisation. These basic assumptions are operationalised as attitudes and behaviours of members of the organisation at all levels and these are what can be seen and heard. The safety culture may also be observed in the visible objects of the organisation. For example, from statements made to meetings and reports written, to the actual equipment that is used and the state it is kept in.

As a minimum ONRSR expects:

Key elements of a positive safety culture (which organisations should consider when determining the methods to meet the requirements of the RSNL and to promote and maintain such a culture) are:

> **committed leadership**: the organisation's leaders from its senior executives to line managers, actively encourage and participate in safety initiatives and activities and promote a positive safety culture. This may be through events and communications, staff mentoring, provision of resources, or providing safety incentives and awards.

> **keeping people informed**: the organisation's members, both managers and workers, know what is going on in their organisation. This includes collecting, analysing and disseminating relevant information derived from the workforce, safety occurrences, near misses, and regular proactive checks of the organisation's safety activities.

> **maintaining vigilance**: the organisation's members are constantly on the lookout for the unexpected. They focus on problems and issues as they emerge and well before they can escalate to something more serious. Members are prepared to look upon these potential risks as a sign the system might not be as healthy as it should or could be.

> **promoting a just culture environment**: the organisation promotes a 'just culture' which acknowledges human error and the need to manage it by supporting systems and practices that promote good design. This minimises the chance of error occurring and promotes learning from past errors or mistakes. It encourages uncensored reporting of near miss occurrences and worker participation in safety issues. A 'just culture' is transparent and establishes clear accountability for actions. It is neither 'blame free' (awarding total immunity for actions) nor 'punitive' (enacting a disciplinary response regardless of whether acts were intentional or not).

> **promoting organisational flexibility**: the organisation is capable of adapting effectively to meet changing demands. This relies on being prepared for, and practiced in, handling changing circumstances with people competent to lead and carry out tasks. Flexibility allows local teams to operate effectively and autonomously when required without the need to adhere to unnecessarily inflexible rules.

> **encouraging willingness to learn**: the organisation is willing and eager to learn from its workers, its own experiences and from other organisations' experiences in this country and around the world. Examples include the sharing of information within and between organisations and the active use of available investigation reports and inquiry outcomes. The key here is that organisations and their members use the information to improve safety and act on the lessons derived.

6.4   Governance and internal control arrangements

Reference to legislation/regulations

Clause 4 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The RTO needs to establish policies, processes and procedures to implement the governance and internal control arrangements to have effective control and management of its operations. The effective control and management involves making various decisions that will affect the safety of railway operations. These safety decisions typically include, but are not limited to, the following:

> Determining the process to manage the change(s) in railway operations that is appropriate with the complexity of the change(s).

> Identifying, reviewing and approving changes to the organisation's SMS, engineering standards, process and procedure to conduct railway operations.

> Accepting the risk profile associated with railway operations.

The safety decisions need to be made by personnel with appropriate roles and responsibilities. Refer to Section 6.5. The aim of the processes and procedures to implement the governance and internal control arrangements are to ensure that safety decisions relating to railway operations are being made by appropriate personnel within the organisation.

As a minimum ONRSR expects

> Processes and procedures are established to obtain approval from the chief executive and governing body within the organisation to conduct railway operations with high risks.

> The approval by the chief executive and governing body within the organisation to conduct railway operations is documented.

> Processes and procedures are established to communicate the following aspects of a railway operations to the chief executive and governing body within the organisation:

- Risk profile of the railway operations.

- Non-conformances with SMS.

- Incidents and/or accidents on the railways.

- Non-compliance with the requirements of RSNL.

- Effectiveness of controls to manage safety risks associated with railway operations.

- Results of risks and the SMS review.

- Changes to existing risks in railway operations.

- Introduction of new/emerging risks in railway operations.

- Any conditions and/or restrictions imposed on railway operations have been met.

> A schedule is established to audit its SMS. The audit is to ascertain the SMS effectiveness in managing the railway operations. Refer to Section 6.10.

> Processes and procedures are established to ensure that safety decisions are made by personnel with the appropriate delegation of authority. Refer to Section 6.5.

6.5   Management, responsibilities, accountabilities and authorities

Reference to legislation/regulations

Clause 5 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The RTO needs policies, processes and procedures to establish the roles and responsibilities within the organisation. These roles typically include the following:

> **Responsible**: Personnel who are undertaking the safety related works.

> **Accountable**: Personnel who are approving the work and ensuring that the safety related works have been completed correctly.

> **Consulted**: Personnel whose inputs are sought in conducting the safety related works.

> **Informed**: Personnel who are kept up-to-date on the progress of the safety related works.

Personnel within an organisation may be assigned multiple roles and a role may be performed by multiple personnel. The distinction and delegation of authorities for the roles needs to be appropriate for the complexity and risk profile of the railway operations.

Typically, for railway operations that are complex and/or with the potential of high risks, the person who is responsible for the rail safety work is often different from the person who is accountable. Complex and/or high-risk railway operations will also require higher level management from the accountable person.

As a minimum ONRSR expects

> The policy is documented and describes the interrelationships and distinctions between the personnel who are responsible, accountable, consulted and informed of the safety of railway operations. The interrelationships and distinctions between the roles need to consider the complexity and risk profile of the railway operations.

> The organisational structure is documented and describes the reporting lines for the roles in the organisation.

> The roles are documented for each position within the organisational structure and includes the following:

  ▪ The person who is doing the work (i.e. responsible) to manage safety risks associated with the railway operations.

  ▪ The person who is approving the work (i.e. accountable) in managing safety risks associated with the railway operations.

  ▪ The person who needs to be consulted on the work to manage the safety of the railway operations.

  ▪ The person who needs to be informed of the work to manage the safety of the railway operations.

> The authorities that have been delegated to each of the positions within the organisation structure to make decisions that may affect the safety of the railway operations are documented.

> Procedures are documented for personnel to:

  ▪ record any safety risks associated with railway operations;

  ▪ identify the personnel in the organisation to which the safety risks need to be reported;

  ▪ communicate the recorded safety risks to the appropriate personnel;

  ▪ monitor and control the recorded safety risks.

6.6 Regulatory compliance

Reference to legislation/regulations

Clause 6 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The SMS provides for **the identification of safety requirements** under RSNL and other applicable legislation and includes steps **(systems and procedures)** to be taken to ensure compliance with such requirements. Identify and understand the applicable laws and all other relevant standards and prescriptive conditions and implement a system of controls to achieve compliance.

As a minimum ONRSR expects

> Systems and procedures for regulatory changes to be identified, actioned and tracked which outlines:

  ▪ who is accountable in the organisation for these actions. Refer to Section 6.5.

  ▪ how legislative changes will be actioned and communicated internally.

> In governance meetings for the SMS review an agenda item to discuss the level of regulatory compliance.

> Systems and procedures for identification and compliance with safety requirements under the RSNL.

> Systems and procedures to ensure regulatory compliance is considered as part of risk management processes.

> Systems and procedures for implementing safety requirements.

> Systems and procedures for monitoring of the RSNL and statutory notices, (such as improvement or prohibition notices) to ensure compliance is being achieved.

6.7   Document control arrangements and information management

Reference to legislation/regulations

Clause 7 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

An RTO's SMS has systems and procedures to control and manage all document and information relevant to the management of risk to safety associated with railway operations.

Operators may wish to consider document control in the context of the latest version of Standard ISO 9001 Quality management systems — Requirements.

Document control arrangements and information management is to be applied to all areas of the SMS and documents and data and information management that store the SMS or SMS documents.

As a minimum ONRSR expects

> Identification and Purpose

 ▪ The purpose would include: recording SMS and associated procedures, policies, work instructions, risk management, engineering, service records, legal, Safety Interface Agreement (SIA) and contract management documents;

 ▪ A defined branch or role for the record and document control and management is recommended to prevent duplication.

> Creation

 ▪ Recommend that a master copy of all documents be retained;

 ▪ Document contents in plain English, legible, clear, unambiguous and appropriate to the end users knowledge and understanding;

 ▪ Process for the review, validation and approval to ensure the accuracy and currency of the contents;

 ▪ Logical and consistent naming conventions, numbering, revisions, version control, issue date and review date.

> Maintenance

 ▪ Updates and revisions are reviewed, validated and approved to ensure the accuracy and currency of the contents;

 ▪ Updates or revisions to be documented and version control, issue dates and numbering updated accordingly;

 ▪ Prior to redistribution of new or updated versions, communicate and ensure obsolete versions are taken out of circulation;

 ▪ Processes and procedures to ensure that persons needing to use or refer to the SMS are informed that the document has been maintain or updated.

> Management

 ▪ Ensure accuracy and currency of content is reviewed and approved;

 ▪ Communication and feedback from respective users to ensure any proposed changes don't introduce new risks or increase current risks to rail safety, in which case a risk assessment may need to be considered;

- Ensure distribution and access to relevant business, work areas and staff that will rely on and use these documents;

- Procedures and processes to register and control new or revised documents within the SMS;

- Procedures and processes to describe the relationships and hierarchy between documents.

> Storage and Retention

- Ensure documents are stored in a safe and secure manner and be readily available for audit, compliance or investigative purposes;

- Define period(s) for retention and disposal of documents.

6.8   Review of the safety management system

Reference to legislation/regulations

Clause 8 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Regulation 17 of the *Rail Safety National Law National Regulations 2012*

RSNL | Section 102 | Review of safety management system

RSNL | Section 103 | Safety performance reports

RSNL | Section 99(3) | Consultation on the safety management system

Descriptor

The purpose of reviewing the SMS is about examining policies, procedures, processes and practices and ensuring that the SMS remains up to date. Reviewing the SMS ensures the SMS remains a relevant and live document.

RTO reviews may also need to be undertaken as a result of incident/accidents, investigations, breaches of the system and outcomes of audits. RTOs should also ensure that any associated records may also need to be reviewed and updated to reflect any changes. The outcomes of the review must be summarised and reported in the safety performance report required by section 103 (Safety Performance Reports) of the Law. RTOs must ensure corrective actions are undertaken following review recommendations.

As a minimum ONRSR expects

Systems, procedures and a schedule for undertaking periodic reviews on the effectiveness of its SMS in accordance with national regulations.

> Prior to undertaking reviews consult with and seek the opinion and feedback from those who may be impacted by any changes such as internal / external workers, other RTOs or infrastructure mangers, parties to any Safety Interface Agreements, contractors, HSE and Union representative and the general public as appropriate. Undertake consultation and communication with staff prior to the implementation of changes and provision of training in the application of the change. Systems and procedures for Planning and Coordination of SMS Reviews ensuring reviews:

- are risk-based and prioritised for SMS review frequency and schedule;

- engage, communicate and consult with all internal and external parties that may be impacted by change(s) and seek feedback;

- include processes to monitor and evaluate the effectiveness of any changes introduced.

> Other considerations for undertaking SMS reviews:

- Following any notifiable occurrences and breaches; notifiable occurrences and breaches were examined as required by the SMS.

- Corrective action recommendation arising from audits or safety investigations; Corrective action recommendation arising from audits or safety investigations have been actioned and taken into account.

- As a result of a prohibition or improvement notices that have been issued

- Deficiencies or practical improvements with the SMS have been taken in to account to remedy those deficiencies or effect those improvements.

- The effectiveness of changes made to the SMS following the previous review.

> Review and document the review of the effectiveness of the SMS in complying with and achieving the intended safety improvements of the Regulations.

> The outcomes of the review are summarised and reported to ONRSR in the operator's safety performance report (s103 RSNL).

> Consultation is to occur to ensure that persons are asked about whether, and if so how, the safety management system can be improved.

> Processes and procedures to describe when and how reviews are undertaken as a result of incident/accidents, investigations, breaches of the system and outcomes of audits.

> Processes and procedures to ensure that:

- any associated records may also need to be reviewed and updated to reflect any changes;

- the outcomes of the review are summarised and reported in the safety performance report required by the Law;

- corrective actions are undertaken following review recommendations.

> Following the approval of any change to the SMS, conduct any necessary consultation and training with internal and external parties to ensure they are aware and understand the change(s) being introduced.

6.9   Safety performance measures

Reference to legislation/regulations

Clause 9 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

RSNL section 103 Safety Performance Reports

Descriptor

A RTO has systems, procedures and a schedule in place to select and monitor safety performance of key risk controls, safety parameters, safety system functions and other safety measures as a way of determining safety performance.

Safety Performance Measures provide a summary of the effectiveness of operators in managing their operations, safety objectives, strategies and performance of their safety management system each financial year or other period as is agreed from time to time by the Regulator.

RTOs are required to report their safety performance to ONRSR.

As a minimum ONRSR expects

> Aspects to be monitored and measured to determine the safety performance of the SMS are identified.

> Key performance indicators are defined by identifying what they will need to measure to know that the processes within the SMS are performing as expected. Key performance indicators may be parameters that are based on the state or the progress of safety process. For example, consider key performance indicators based around:

- Critical risk controls from the RTO's risk register

- System safety functions

- Audit findings

- Drug testing results

- Injuries sustained

- Proceed Authority Exceedance rates

- Lost Time Injury Frequency Rate (LTFIR)

> Processes in place to monitor and measure the key performance indicators including processes on collecting, analysing, assessing and disseminating the safety information.

> Performance measures are sensible in that they are measuring railway operations and provide useful information to monitor and trend the safety of railway operations.

> Performance measures measurable in that they can be physically or technically measured to provide useful data to track and improve safety of railway operations.

> Performance measures are timely in that the measures can be assessed at the time they need to be acted on.

> A person is assigned for accountability of the identified measures to ensure performance measures are enforced.

> Processes and procedures to determine what the RTO's safety performance measures are.

> Processes and procedures for how the RTO's tracking against performance measures are reported and published.

> Processes and procedures to determine actions to be taken should safety performance measures not be met, or address any issues indicated by the safety performance measures.

> Processes and procedures take into account ONRSR's Safety Performance Reporting Guideline (located on the ONRSR website).

6.10 Safety audit arrangements

Reference to legislation/regulations

Clause 10 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

A documented internal audit program which is focused around auditing those processes of the SMS which pose the greatest risk to safety. The internal audit process is used to assess compliance with the SMS and the RSNL, evaluate effectiveness at eliminating or mitigating risks to safety and identify areas for safety improvement. Audits on the effectiveness of SMS elements may help in highlighting gaps or deficiencies.

As a minimum ONRSR expects

> Defined or documented processes, procedures and audits of the SMS adequately expresses the RTO's approach.

> Documented procedures to ensure that the auditors have the skills and knowledge required to undertake audits and are independent from the area being audited to the maximum extent possible.

> Internal audits are conducted to ensure that the SMS helps mitigate risks to safety SFAIRP.

> Documented process covers the following phases of an audit:

  ▪ Plan the audit schedule;

  ▪ Plan the audit;

  ▪ Conduct the audit;

  ▪ Report on the audit;

  ▪ Follow up on issues and improvements;

  ▪ Review the effectiveness of the audit program.

> The audit plan schedule is sufficiently detailed and programmed ahead of time to ensure the robustness of the plan.

> Practices are observed and recorded through the internal audit to determine if there is conformance with the intent of the process under observation.

> The outcome of the internal audit is actioned to improve the SMS.

> The results of the audit are communicated to those people who are responsible for the oversight of the respective railway operations linking it back to the governance and internal control arrangements.

> Processes and procedures to stipulate how tracking, monitoring and addressing safety issues resulting from audits is undertaken.

> Processes and procedures to stipulate when, how and who undertakes corrective actions are undertaken following audits.

> Processes and procedures to ensure that the person approving or accepting the results of the audit are sufficiently senior within the organisation to ensure that corrective actions are taken in a timely and thorough manner. Refer to Section 5.

> Processes and procedures outlining the risk to safety considerations for determining how the audit scope and frequency is to be determined.

> Processes and procedures for outlining the audit scope and frequency.

6.11 Corrective action

Reference to legislation/regulations

Clause 11 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The RTO is required to have systems and procedures in place to manage corrective actions that were identified and which will eliminate the cause of detected non-conformances.

As a minimum ONRSR expects

> A system to manage and register all corrective action tasks.

> A process to determine the magnitude of an identified problem.

> A process to determine if the identified problem poses a risk to safety, and if so what the likelihood and consequence of a repeat occurrence would be.

> A process to determine how to prevent the problem from occurring, or reoccurring.

> A process in place to determine what corrective action is recommended to rectify the cause of the problem.

> A process to manage the corrective action tasks so that priority is given to those corrective actions that are have a higher assessed level of risk.

> Each corrective action is allocated to a responsible person who is responsible for the implementation of the recommended corrective action.

> A process to undertake a scheduled review of the registered corrective actions and appropriate escalation procedures if they have not been managed appropriately.

> While individual corrective action may be taken at a local level for some issues, an overarching process where higher levels of management monitor the implementation of corrective action.

6.12   Management of change

Reference to legislation/regulations

Clause 12 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

A RTO is required to have policies, processes and procedures to appropriately manage any changes to railway operations. Changes to railway operations have the potential to impact both internal and external stakeholders. As such, these changes need to be effectively managed to ensure that railway operations can be operated SFARP. Management of the entire lifecycle of railways' operational changes are essential.

An example of a lifecycle of railway operational changes may include planning, designing, implementation and post implementation (testing and commissioning as well as commencement of revenue service). A lifecycle could mean the decommissioning and disposal of a system.

Changes to railway operations may vary in complexity and risks. To ensure effective management of change the rigour in the process and procedure needs to be adaptable to the complexity of the changes to railway operations.

As a minimum ONRSR expects

> The RTO to establish the following processes and procedures to **plan the proposed change:**

   - Document the scope and impact of change(s) to railway operations.

   - Document the internal and external stakeholders that will be affected by the proposed change(s).

   - Consult the stakeholders on the proposed change(s).

   - Identify, assess, control, monitor and communicate the safety risks associated with the proposed change(s). Refer to Section 6.16.

- Document the roles and responsibilities of personnel involved in implementing the proposed change(s). Refer to Section 6.5.
- Obtain approval from appropriate personnel to implement the proposed change(s). Refer to Section 6.5.

> Ensure any changes don't introduce any new rail safety risks and if necessary undertake a risk assessment / evaluation and approval process prior to the introduction of the change, and follow-up with an evaluation once the change is introduced.

- Ensure any proposed changes are risk assessed, evaluated and approved prior to their implementation, and once introduced the changes are monitored to ensure their effectiveness.
- Conduct training to internal and external parties to ensure they are aware and understand proposed change(s) before they are introduced.
- Following the approval of any change to the SMS, conduct any necessary consultation and training with internal and external parties to ensure they are aware and understand the change(s) being introduced.

> The RTO to establish the following processes and procedures **to implement the change(s):**

- Review **the design of the change(s)** to railway operations. The review of activities needs to be appropriate for the complexity and level of risks associated with the change(s). Refer to Section 6.16.
- Obtain approval from the appropriate personnel to progress to the next stage of the implementation. The approval process needs to be appropriate for the complexity and level of risks associated with the change(s). Refer to Section 6.5.
- Communicate the process of implementing the proposed change(s) to the internal and external stakeholders.
- Identify, assess, control, monitor and communicate the safety risks associated with implementing the change(s). Refer to Sections 6.14 and 6.16.
- Identify, assess, control, monitor and communicate the safety impact of all the waivers or deviations to standards, process and procedures when implementing the change(s). Refer to Section 6.16.
- Risk management activities need to be appropriate for the complexity and level of risks associated with the change(s).
- Manage contractors involved in implementing the change(s). Refer to Sections 6.13, 6.14, 6.16 and 6.18.
- For verification purposes it is recommended that during the change process, RTOs retain evidence of changes, meetings, minutes, correspondence, attendance sheets, engagement and training.

> The RTO to establish the following processes and procedures to manage **post implementation of the change(s):**

- Verify and validate that the change(s) have achieve the associated safety requirements for the railway operations.
- Identify, assess, control, monitor and communicate the safety risks associated with any defects and faults in changed railways. Refer to Sections 6.14 and 6.16.
- Document any safety related application conditions associated with the changed railways.
- Document the operational, maintenance and safety requirements of the changed railways.
- Audit the physical and functional configuration of the changed railways. Refer to Section 6.10.

- Assess organisational readiness to commence operation of the changed railways.

- Obtain approval from the appropriate personnel to accept the changes and commence operation. Refer to Section 6.5.

- Communicate the changed railway operations to the internal and external stakeholders.

- Train the relevant personnel to safely operate the changed railways.

- Identify, assess, control, monitor and communicate the safety risks associated with operating the changed railways. Refer to Sections 6.14 and 6.16.

- The verification and validation, risk management activities and approval process need to be commensurate with the complexity and level of risk associated with the change(s).

6.13 Consultation

Reference to legislation/regulations

Clause 13 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The RTO is required to have policies, processes and procedures to appropriately consult with all stakeholders and ensure a holistic approach will be followed in gathering information in relation to the establishment, reviewing or varying of the SMS.

Consultation is an active management process and opens formal and informal communication channels between the organisation and its stakeholders who may be employees, the public or others. Effective consultation involves seeking and sharing relevant information through talking about what is to occur and listening to each other's concerns.

Consultation rests on the principle that a safe workplace is more easily achieved when involved people communicate with each other to identify hazards and risks, talk about safety issues and work together to find solutions.

As a minimum ONRSR expects

> The RTO to undertake consultation before establishing or varying the SMS as part of any reviews. The SMS must include systems and procedures to ensure that this consultation occurs.

> Consultation must be undertaken, SFAIRP, with:

- persons who carry out railway operations (or work at the RTO's railway premises or with the RTO's rolling stock) who are likely to be affected by the review or variation of the SMS;

- health and safety representatives within the meaning of occupational health and safety legislation representing any of these people or entities;

- any union representing any of these people;

- any other RTO with whom the RTO has an interface co-ordination plan relating to risks to safety of railway operations carried out by or on behalf of either of them; and

- the public - as appropriate.

> People or entities that carry out railway operations may include contractors, or personnel sourced from labour hire companies. Consultation processes must include reasonable opportunities for persons

being consulted to make submissions on the SMS and to advise them in a timely manner of the outcome.

> In general consultation with the public would be considered appropriate where the public may be affected by the establishment, review or variation of the SMS. This may be where a control requires a particular action or understanding of the public to be effective. For example, it would be appropriate to consult with the public when installing a new door operating device on a passenger carriage.

> When undertaking consultation, ensure consultation:

  ▪ occurs early - before the agenda is set and decisions are made;

  ▪ is planned, genuine and collaborative within a process that is open and receptive to rail safety worker participation and where the RTO is interested in and values rail safety workers' ideas;

  ▪ is characterised by mutual trust and respect between the RTO and its rail safety workers;

  ▪ requires the application of interpersonal, facilitative and listening skills;

  ▪ includes a proactive role for rail safety workers who are encouraged to suggest ideas;

  ▪ includes appropriate training in communication skills and risk assessment to enable effective participation by rail safety workers;

  ▪ requires the provision of relevant and applicable information;

  ▪ provides opportunities for feedback on issues raised, including opportunities for one on one communication where this is reasonably practicable; and

  ▪ aims to have outcomes that improve the SMS.

6.14   Internal communication

Reference to legislation/regulations

Clause 14 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

Internal communication systems and procedures enable timely and targeted two way exchange of information about the content of the SMS. It ensures people have the information they need to effectively manage risk, provides avenues for feedback and ensures incidents and accidents are reliably reported to those responsible and accountable.

As a minimum ONRSR expects

> Processes and procedures to disseminate information about the content of the SMS to people who implement it or may be affected by it.

> Systems to distribute relevant SMS content to new users and new interfacing organisations who are required to take account of it. Refer to Section 6.2.

> Formal systems to notify changes of SMS content to relevant users and people affected

> Processes for the reporting of risks to safety by personnel with safety responsibilities. Refer to Section 6.5.

> Accident and incident response systems that include protocols for internal reporting of accidents and incidents to responsible/accountable people including those involving contractors or subcontractors. Refer to Section 6.3.

> Priority and prominence is given to communication of safety critical information including safety alerts and safety notices from external sources.

> Systems to verify that safety critical communication is received and understood.

> Consultation with end users occurs prior to design or approval of changes to instructions or procedures to ensure content and language is relevant, accurate, clear and unambiguous.

> Communication channels or media relevant to the work context are used to ensure information is accessible at the time and place it is needed. Refer to Section 6.5.

> Multiple opportunities exist to consult and provide feedback regarding the SMS to encourage reporting and discussion of safety issues between people at all levels of authority.

6.15 Training and instruction

Reference to legislation/regulations

Clause 15 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

A rail safety worker needs to understand their roles and responsibilities as part of the RTO's SMS. RTOs need to ensure rail safety workers have a good working knowledge of the SMS and how their work relates to the SMS.

As a minimum, ONRSR expects

Processes and procedures:

> for the training of rail safety workers who participate in the implementation of the SMS.

> for encouraging awareness, understanding and participation of rail safety workers in the SMS.

> covering the induction and training relating to new work practices, policies and standards, specified hazards and relevant control measures.

> that link back to the document control arrangement and information management. Refer to Section 6.7.

> that identify who are rail safety workers and what their training and instructions needs are.

> that identify what reactive training is required.

6.16 Risk management

Reference to legislation/regulations

Clause 16 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

RSNL | Section 46 | Management of risks

RSNL | Section 47 | Meaning of reasonably practicable

RSNL | Section 99 | Safety management system

RSNL | Section 100 Conduct of assessments for identified risks

Descriptor

In order to ensure the safety of its operations, an RTO must eliminate or minimise risks to safety SFAIRP. An RTO's SMS must therefore include risk management systems and procedures that enable this requirement to be met.

Risk management is a critical activity and the SMS supports the management of risk to ensure that risks are identified, assessed, eliminated or controlled. Due to the varying scope and nature of railway operations, differing approaches to risk management may be required to eliminate or minimise different types of rail safety risk. For example, risk management approaches suitable for managing the risk of low probability and high consequence events will not necessarily be appropriate for high probability and low consequence events.

ONRSR's expectations for RTOs' risk management systems and procedures are set out below and are structured in accordance with the risk management process described in AS/NZS ISO 31000 Risk Management – Guidelines. AS/NZS ISO 31000 also provides further information on risk management principles and guidance on developing a framework for risk management.

For further information on eliminating or minimising a risk to safety SFAIRP, refer to the ONRSR Guideline, Meaning of Duty to Ensure Safety So Far as is Reasonably Practicable. This provides guidance on the interpretation and application of the term 'so far as is reasonably practicable' by considering the standard that a duty holder is expected to meet under the RSNL and National Regulations.

As a minimum ONRSR expects

An RTO to have risk management systems and procedures that cover the:

> *Scope, context and criteria* for the management of safety risks arising from the RTO's railway operations;

> Comprehensive and systematic *assessment* of safety risks arising from the RTO's railway operations, including *risk identification, analysis and evaluation;*

> Tracking of any *risk treatment* activities required through to implementation and closure;

> Ongoing *monitoring and review* of the identified risks and the adequacy of the control measures used to manage them.

> *Recording and reporting* of risk management activities and their outcomes to the duty holders and governing bodies within the RTO; and

> *Communication and consultation* arrangements to ensure relevant stakeholders and subject matter experts are involved at all stages of the risk management process.

Scope, context, criteria

> The SMS to contain an explicit commitment to the management of safety risks in the RTO's safety policy

> The risk management systems and procedures to establish the context for safety risk management by defining the scope for the risk management process and setting the criteria against which risks will be assessed.

> The scope for the risk management process to cover risks arising from all aspects of the RTO's railway operations, including risks due to 3rd parties and at interfaces

> The risk management systems and procedures to define criteria for:

  ▪ Assigning likelihood, severity and risk levels to rail safety risks, to support prioritisation of risk evaluation, review and treatment activities.

- Tolerability and acceptance of rail safety risks, including the requirement that risks must not be accepted unless they have been managed SFAIRP.
- Escalation of the oversight and ownership of rail safety risks and controls to the appropriate level within the RTO's organisation.

Risk Assessment

Systems and procedures for *risk assessment* to define the RTO's approach to the comprehensive and systematic:

> Identification of all reasonably foreseeable risks to safety arising from the RTO's railway operations, under both normal and abnormal conditions;

> Analysis of identified risks to rail safety, including specification of the control measures to be used to manage those risks.

> Evaluation of whether the identified risks have been managed SFAIRP, or whether further treatment is required;

Systems and procedures for *risk identification* to:

> Describe the process and techniques to be used to identify rail safety risks;

> Require identification of risks arising from all aspects of the RTOs railway operations, including risks relating to:

- infrastructure features, such as tunnels, bridges, underground stations;
- rolling stock features, such as traction type, passenger or freight usage, type of freight (e.g. dangerous goods) and crash worthiness;
- specific locations or geographic areas;
- interfaces with other RTOs, the road network or any other interface parties, regardless of who has direct control over the risk;
- particular groups impacted, such as passengers, rail safety workers (employees, contractors, volunteers, and workers from other RTOs), and members of the public;
- human factors;
- both normal operations and abnormal or emergency operations;
- maintenance activities and planned changes (either permanent or temporary);
- activities of third parties (e.g. trespass and vandalism); and
- defined sources and prompts for ongoing risk identification, such as following an accident, incident or near-miss, when new information becomes available, or when changes are introduced.

Systems and procedures for *risk analysis to* require:

> Examination of the following aspects for each identified risk:

- the nature of the risk;
- the individual within the RTO organisation that owns the risk (typically an individual with control over resources used to manage the risk)
- the potential causes of the risk;
- the potential consequences of the risk;
- the range of control measures available to eliminate or minimise the risk;

- the individuals within the RTO organisation with responsibility for implementing control measures;

- the magnitude and severity of the consequences should the risk be realised;

- the likelihood of the risk occurring (i.e. the chance or probability of an identified consequence materialising);

- the resultant level of risk; and

- any uncertainties or assumptions made in the analysis, particularly in relation to assigning likelihood, severity and risk levels to risks.

> Consideration of risks cumulatively as well as individually:

- where a major risk involves a chain of events the RTO needs to understand the likelihood of each event in the chain occurring and the likelihood of them escalating to a major incident;

- risk analysis to include examination of the knock-on effects of particular consequences, including cascade and cumulative effects, and determine barriers (i.e. control measures) to their escalation;

- cumulative risk is considered in order to understand the full range of incidents, their contributing factors and the control measures; and

- consideration is given to the possibility of common failure mode mechanisms which can cause several failures to occur simultaneously.

> The level of rigour and detail applied during risk analysis to be:

- commensurate to the risk; and

- sufficient to give confidence that all significant causes, consequences and control measures have been identified.

Systems and procedures for *risk evaluation to* require:

> A comparison of the risk analysis results with risk tolerability criteria to determine whether risks can be accepted;

> Acceptance of rail safety risks only if the risk has been reduced so far as is reasonably practicable (i.e. there are no more available and suitable controls that could be introduced to further reduce the risk); and

> Clearly defined delegations of risk acceptance authority to risk owners at an appropriate level within the RTO organisation.

Risk Treatment

Systems and procedures for *risk treatment to* require:

> Specification of the control measures to be used to manage and monitor risks to safety (including audits, expertise, resources and staff);

> Processes to consider possible new control measures, in addition to those proposed at the time of accreditation or registration, in order to continually reduce risk;

> Adoption of any new control measures deemed available and suitable to introduce;

> Consideration of the following factors when determining whether a control measure is available and suitable to introduce:

- Whether the control measure complies with a recognised standard (such as an Australian standard) or approved code of practice (RSNL s249);

- The technical and logistical suitability of the control measure. For example, is it compatible with existing systems or operating requirements, or available at the locations required;

- The environmental suitability of the control measure. For example, is it suited to the climatic conditions or operating environment;

- The likelihood and degree of harm of the risk(s) the control measure relates to;

- The effectiveness of the control measure at eliminating or minimising the risk(s) (i.e. the level of risk reduction introduced, the 'safety benefit');

- The cost associated with the introduction of the control measure; and

- A comparison of the cost of the control measure and the 'safety benefit' it introduces, with a clear favourability of safety ahead of cost. A control measure should only be rejected on cost grounds if the cost is grossly disproportionate to the risk reduction it affords.

> Prioritisation of risk treatment activities for rail safety risks with the greatest level of risk and scope for improvement, noting that not treating a risk because a higher priority risk is treated does not necessarily mean risks have been reduced so far as is reasonably practicable;

> Assignment of responsibility to introduce a new control measure to an individual at an appropriate level within the RTO organisation; and

> Regular monitoring and tracking of the introduction of a new control measure to closure.

Further guidance on determining the availability and suitability of control measures can be found in the ONRSR guideline, Meaning of Duty to Ensure Safety SFAIRP, located on the ONRSR website

Recording & Reporting

Systems and procedures to require:

> A detailed record of all aspects of the risk assessment process to be kept and a description of the format that this will take;

> A record of the individuals involved in the risk assessment process;

> A record of the following information in a risk register or supporting documentation:

- The risks identified;

- the individual within the RTO organisation that owns each risk;

- the potential causes of each risk;

- the potential consequences of each risk;

- the control measures considered to eliminate or minimise the risk;

- reasons for selecting certain control measures and rejecting others;

- the relationship between control measures and their associated risk(s);

- references to other locations in the SMS where further details on control measures can be found;

- the individuals within the RTO organisation or the interfacing party with responsibility for implementing control measures;

- the magnitude and severity of the consequences should the risk be realised;

- the likelihood of the consequences materialising;

- the resultant level of risk;

- any uncertainties or assumptions made in the analysis, particularly in relation to assigning likelihood, severity and risk levels;

- the date each risk was last assessed or reviewed; and

- The status of each risk, including a demonstration of whether risks are reduced SFAIRP[6].

> The risk register to be treated as a live document and used as a reference point for managing safety;

> Risk assessments conducted at a local level to link into the organisation-wide risk assessment processes; and

> The results of risk assessment and management activities and the resultant risk profile of the railway operations to be reported to appropriate stakeholders and decision makers within the RTO organisation.

Monitoring and review

Systems and procedures to:

> Ensure that risk assessment is not a one-off activity but part of the process of continuous improvement, involving regular reviews of risks and control measures;

> Describe how and when risks are to be reviewed:

- risks should be reviewed at appropriate intervals or when there is a reason to question the validity of their assessments. For example, following an accident, incident or near-miss, when new information becomes available, or when changes are introduced; and

- the frequency of scheduled risk reviews to be commensurate with the level of risk (i.e. significant risks should be reviewed more frequently than lesser risks)

> Describe how risks are to be reviewed, which as a minimum should involve:

- a review of the accuracy of the risk assessment, including the effectiveness of existing control measures; and

- consideration of any new control measures that may be introduced, including re-visiting control measures that may previously have been rejected to confirm the decision remains valid.

> Describe how and when control measures are to be reviewed:

- this should include the regular auditing and verification of key risk control measures to provide assurance that they are in place and working effectively; and

- control measures should be reviewed in light of new information, such as new technology, incidents, on-going deterioration, remedial works, or other changes that may affect risks.

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[6] While there is no specific legislative requirement to *demonstrate* that a risk to safety has been eliminated or minimised so far as is reasonably practicable, there is a legislative requirement to eliminate or minimise risks to safety SFAIRP. It is therefore recommended that the organisation has a process in place to determine and demonstrate whether a risk has been reduced SFAIRP. Further guidance can be found in the ONRSR guideline, Meaning of the Duty to Ensure Safety SFAIRP, located on the ONRSR website.

Communication & Consultation

Systems and procedures to:

> Provide a description of the stakeholders to be involved and consulted during risk assessment activities, including their respective responsibilities and competency requirements. This should include:

  ▪ personnel responsible for conducting the risk assessment;

  ▪ subject matter experts in the area subject to risk assessment;

  ▪ representation from operational staff who are exposed to the risks under assessment and/or have responsibility for implementing control measures; and

  ▪ representation from other areas or organisations that may be affected by decisions relating to the risk assessment (for example, interfacing parties).

> Describe the ways in which the results and outcomes from risk assessment activities are to be communicated throughout all levels of the operator's railway operations, including to those who are to participate in the implementation of the system or who may be otherwise responsible for, or affected, by the implementation.

6.17 Human factors

Reference to legislation/regulations

Clause 17 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

Human factors considers people as components of complex socio-technical system (e.g. railways). It is concerned with understanding the performance of the individual and of the team as a whole in the context of the work system and all its components. Both human capabilities and human limitations are relevant to this work. Good design enhances human capability to perform well whilst reducing the chance for human limitations to lead to problems. Human Factors is a discipline with defined knowledge and methods, the practical application of which can assist in improving the performance of many aspects of railway systems and reducing the likelihood of adverse events.

As a minimum ONRSR expects

> The SMS to include procedures to ensure that human factors matters are taken into account during the development, operation and maintenance of the safety management system, and for the integration of human factors principles and knowledge into all relevant aspects of the operational and business systems.

Integrating human factors into the safety management system

> Processes and procedures for human factors integration are in place. These will identify and analyse any human factors requirements associated with relevant safety critical projects or activities and implement and monitor these requirements.

> Processes that ensure the systematic identification and analysis of relevant human factors issues and the application of appropriate tools, methods and measures to address such issues.

> Processes and procedures to integrate human factors issues identified within the risk management systems and processes. Risk assessments and reviews of risk assessments identify those areas where human involvement presents a safety risk. The level of risk to safety will determine the extent of human

factors analysis required to understand the risk posed by human activity. This analysis will also support the identification of appropriate risk controls.

> The management of human factors issues is not a standalone activity. Human factors integration processes need to be planned and implemented in the early stages of a project to ensure adequate time for human factors activities to be conducted and findings incorporated.

Integration of human factors is regarded as essential in many aspects of operational and business systems that make up the SMS.

Generic human factors processes

> Processes and procedures that support the integration of human factors into operational and business systems:

- Identification and analysis:
    - o Clarify and document the broader operational context in which work is performed.
    - o Identification of the people (users) who use the equipment, interact with the system and are affected by change etc. The focus should be on the people who conduct safety critical tasks. Users may be direct or indirect users of the system. For example, they may be the recipients of the outputs of the system.
    - o Identify user requirements. User requirements include the needs of users arising from the limitations of human capability and the requirement for new procedures, skills and/or training.
    - o Structured involvement of end users and other identified users (as appropriate) in the assessment of systems of work.
    - o Assessment of roles and tasks people currently (or will) perform for the potential for human error and/or violations. The level of task detail required depends on the risk involved. Where the potential for error is high and the task is critical for safety a detailed task analysis should be performed and the factors that influence performance identified.
    - o Identification and assessment of known and/or potential human errors within a risk management framework including how they may affect safety and the efficacy of current and potential controls.
    - o Identification of appropriate strategies (controls) for mitigating the risk of error.
- Design & Testing:
    - o Provide the conclusions of research and analysis including tasks and user requirements and/or design options to the engineering/design team in a format they can access.
    - o Work with engineers, designers and others to ensure they understand the human factors requirements, any design goals, and recommendations.
    - o Facilitate the involvement of end users as participants in the design process and within the process of monitoring and testing prototypes.
    - o If necessary, facilitate the incorporation of the identified user requirements into the design. Design should take into account human capabilities and limitations, both physical and cognitive.
    - o The design process should ensure that identified human factors risks are eliminated or mitigated through the design of appropriate controls. In order to be most effective these controls should be directed at:
        - eliminating or reducing the likelihood of error;
        - supporting the detection and correction of errors when they occur;

- ensuring the containment of, and reduction in, the severity of the consequence of errors that persist uncorrected.
  - o Good design should determine how functions are allocated between the technology and the people so that human strengths are supported and weaknesses compensated for.
  - o As necessary conduct iterative design, monitoring and testing of options and prototypes throughout the lifecycle of the project.
  - o Evaluate the design through the use of mock-ups and prototypes with the users of the system early on in the design process so that user feedback and performance can be used to inform the design.
- Implementation and monitoring:
  - o Implementation of recommended human factors solutions, i.e. implementation of appropriate strategies for mitigating the risk of error.
  - o Monitoring and review of implemented design and risk mitigation measures etc. to ensure their suitability in practice.
  - o Documentation of human factors issues and associated risks and their integration into relevant project planning and documentation (e.g. change management plan, risk register).
  - o Management of outstanding risks that could not be eliminated in design and therefore need to be dealt with using other control approaches.

Integrating human factors in risk management

> The risk management framework needs to provide processes to ensure that the potential for human error is systematically addressed and integrated into all relevant risk assessments.

Design and procurement

> The interaction of people and equipment, plant and machinery (e.g. display and control systems, alarm and warning systems, signalling and cabs) can be designed to ensure human performance is enhanced and to minimise the chance for error. Human factors activities conducted early in the project ensure outputs can be incorporated into the design of the system. Follow the generic human factors process described above.

Job and task design

> Appropriate job and task design improves performance and decreases the potential for human error. Poor task design (e.g. tasks that involve excessive time pressure, complex sequences of operations, memory dependence or physical/mental fatigue) can have a negative impact on performance. Follow the generic human factors process described above to ensure that tasks and activities are appropriate and suited to the human operator's physical and cognitive capabilities and limitations.

Training of rail safety workers

> *Training needs analysis provides the basis for an effective and efficient training program.* For safety critical functions this is risk-based to ensure that training resources are appropriately targeted. Use the outputs of a human factors analysis as described above as input to develop the training required. Where applicable training can cover the use of strategies to prevent and recover from errors that are made.

Safety reporting systems and data analysis

> The objective of any safety reporting system is to identify safety trends and understand their origins so that effective corrective action can be taken. It is therefore important to identify the systemic issues and related human errors which contribute to occurrences. Human error and systemic contributors are often the same whether they lead to accidents, incidents or near misses. The generic method described above that identifies users, tasks and the potential for human error can be used to look for where human factors issues may have contributed to an incident.

Investigation

> The main purpose of investigating an accident or incident is to understand what happened, how it happened and why it happened in order to prevent similar events in the future. A number of systemic accident or incident causation models exist within the rail industry and should be adopted. Investigations staff may require specialist training in human factors in investigations. However, the generic method described above that identifies users, tasks and the potential for human error can be used to look for where human factors issues may have contributed to an incident.

6.18   Procurement and contract management

Reference to legislation/regulations

Clause 18 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

Process and procedure is established to manage the procurement and contract for external entities to provide goods and services to the railway operations.

Goods and services provided by contractors may involve supply, construction, operation, maintenance, modification and decommissioning of safety related and/or safety critical equipment for the railway operations.

Regardless of the arrangement and duration for which the external entity is engaged to provide goods and services to the railway operations, the RTO needs to have effective management and control of the railway operations at all time. This include ensuring that the safety risks associated with the works undertaken by the contractors have been eliminated or mitigated SFAIRP.

As a minimum ONRSR expects

> The RTO to establish a process to review the tender documents and contracts that cover the following aspects:

   ▪ Details of the works that need to be completed/delivered throughout the project lifecycle.

   ▪ Compliance with the process and procedure specified in the RTO's SMS.

   ▪ Adoption of the relevant and latest industry and/or safety standards.

   ▪ The safety requirements that control the risks associated with the works and/or defined in RTO's SMS have been adequately defined.

   ▪ Safety activities to be conducted by the contractors throughout the project lifecycle.

> The RTO to identify and assess the safety risks associated with the works to be completed.

> The RTO to document the safety requirements to control the safety risks associated with the works to be completed.

> The RTO to document the safety and operational outcomes to be delivered by the contractors.

> The RTO to establish a safety audit schedule to examine the:

   - contractor's performance in relation to the safety aspects of the contract.

   - contractor's compliance with the process and procedure specified in the RTO's SMS.

> The RTO to document any faults or defects in the work deliverables that may affect the safety of railway operations.

> The RTO to document the corrective actions for the faults or defects that may affect the safety of railway operations.

> The RTO to establish a process to review and approve/accept the outputs of the work.

> The RTO to establish processes to communicate the relevant elements in its SMS to the contractors. This communication includes any changes to the SMS during the contracting period.

> If a contractor's systems need to be incorporated into the RTO's SMS, then RTO to establish process that includes the following:

   - The RTO sets safety and operational outcomes.

   - The RTO develops list of railway operations to be undertaken under contract and conducts risk assessment.

   - The RTO reviews contractor's systems against railway operations, safety and operational outcomes and its SMS to identify any inconsistencies or issues.

   - Contractor amends systems to meet railway operations, safety and operational outcomes and address inconsistencies or issues if necessary.

   - The RTO amends the SMS to address any inconsistencies or issues if necessary.

   - The RTO references contractor's systems in its SMS.

   - The SMS arrangements are documented.

6.19 General engineering and operation systems safety requirements

Reference to legislation/regulations

Clause 19 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

To make sure that the organisation has a system to define the operations, standards and processes for engineering and operation systems for rail infrastructure and rolling stock operations.

Engineering and operation systems safety requirements shall cover all stages in the lifecycle of rail infrastructure and rolling stock operations including its specification, preliminary design, detailed design, procurement, construction, commissioning, operation, maintenance and decommissioning phases.

As a minimum ONRSR expects

> The operational standards and the processes for rail infrastructure, rolling stock and the interfaces between them to include;

   - design [including specification, preliminary design, detailed design, design control, verification, validation and interface management],

- procurement,

- fabrication,

- construction and installation,

- implementation, test and commissioning,

- monitoring and maintenance [including technical maintenance plans],

- system operation,

- system modification, [including approvals and management of change to technical maintenance plans],

- demolishing and decommissioning and

- disposal.

> General engineering and operation systems to include:

- Technical engineering detail which describes the standard that railway infrastructure and rolling stock meets to be considered safe and fit for purpose for rail operations.

- Describe the acceptable tolerances for when asset maintenance is required and when the asset will be removed from service.

- Operating system - the operating rules (commonly referred to as safeworking rules) which govern the movement of trains, operating procedures which describe the correct way of operating each class or rolling stock and signalling systems.

> Documentation for each asset to include:

- Description and location

- Technical performance specifications and drawings e.g. current standards, procedures, tests/checklists and engineering drawings.

- Inspection schedule and the results of each inspection.

- Maintenance schedule and the evidence of maintenance work carried out.

- How the standards and inspection schedules have been determined to be appropriate for the RTO's particular scope of railway operations.

> Safe work procedures to provide:

- A description of the activity or process.

- A clear explanation in sequential order and process steps.

- Details of the potential hazards, safety controls and recovery actions. Demonstrate how the process will manage operational risks.

- Details of the person/position with supervisory responsibility for the activity.

> Design control procedures for auditing the new built asset or modification of assets that include:

- The responsibility for each design or development activity.

- A safety risk review at the design input and output stages.

- Consideration for reliability and maintainability.

- Design verification and validation functions.

- Control of design changes.
> Equipment verification (testing and evaluation) for new or modified assets ensures:
  - Compliance with equipment specification.
  - That the particular requirements for the equipment's intended use are fulfilled.
> Document control arrangements describe:
  - How all of the above will be implemented and updated.
  - Record-keeping requirements.
  - Document control mechanisms for reviewing procedures.

6.20 Process control

Reference to legislation/regulations

Clause 20 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

To make sure the organisation has a system to define, control and manage the operational and engineering processes to ensure assets are fit for purpose for rail infrastructure and rolling stock operations.

As a minimum ONRSR expects

> Procedures for inspection and testing of safety related engineering and operational systems define the location, method, level of detail and frequency of inspection and testing.
> Frequencies of inspection and testing consider operational criteria, rate of deterioration, consequences of failure and frequency of occurrences.
> Inspection and testing is to be undertaken according to a set schedule and in response to defined events.
> Records are created and maintained to provide evidence of the condition of all elements critical to railway safety. Refer to Section 6.7.
> Links to processes for corrective action when required. Refer to Section 6.11.
> The level of detail would depend on the size of the organisation, internal technical expertise and how they are reviewing the reports they received from contractors.
> The process control system to include:
  - that procedures are in place for the inspection and testing of safety-related engineering and operational systems;
  - the standards against which the rail infrastructure and rolling stock systems are assessed;
  - monitoring of compliance against standards, processes and procedures using inspections, testing and assessments. (Audits may also be used to verify processes). Refer to Section 6.10;
  - the quality of inspections and testing of assets;
  - documentation of inspection records;
  - the application of processes for taking corrective action in response to deficiencies identified in process control;

- management and correction of defects and non-conformances;
- competencies and experience of staff undertaking the inspections;
- control, calibration and maintenance of testing/measuring equipment.

> An inspection regime of an RTO typically involves a combination of:
- Periodic detailed inspections which are conducted at a frequency appropriate for the:
  - age;
  - amount of use; and
  - rate of deterioration of the infrastructure and rolling stock.
- Evidence that inspections are carried out by people with detailed knowledge and skills (competence) in maintaining the asset and its individual components.
- Evidence that asset inspections like bridges and level crossing equipment require specialist engineering and technical skills to carry out periodic detailed inspections.
- Pre-use inspections of the track and rolling stock to check for obvious defects which affect the safety of the day's operations

> Records of inspections are kept and form the maintenance history of the asset to confirm:
- effective monitoring to ensure compliance to standards, operating rules, processes and procedures.
- date the inspection has been carried out and by whom.
- the defects or non-conformances detected (location, description).
- defects or non-conformances have been reported for rectification.
- defects are prioritised, safely managed and reviewed until rectified.
- condition of the infrastructure/rolling stock (and any restrictions) has been reported to staff responsible for the day's operation.
- defects are rectified, checked and dated by staff with the competence and responsibility for ensuring assets are returned to service fit for purpose.
- maintenance work carried out on each asset (both routine and rectifying defects) has been recorded (e.g. a maintenance log for each asset).
- assurance that technical maintenance plan requirements are met and the review of work order process or inspection test plan process is undertaken to demonstrate evidence of work being conducted as per standards.
- only competent staff are rostered/allocated and undertake rail safety work (such as, driving, shunting, inspecting and maintaining infrastructure and rolling stock).
- staff who are rostered or allocated rail safety work are fit to do so (including meeting drug and alcohol, fatigue, and health assessment requirements).
- that procedures are in place to ensure the competencies and experience of staff undertaking the inspections.
- that procedures are in place for the control, calibration, calibration frequency, calibration records and calibration status of test / measuring equipment used to inspect or test rail infrastructure or rolling stock.
- regular internal auditing. Refer to Section 6.10.

- that inspection and testing records provide evidence of the condition of rail infrastructure or rolling stock.
- back to service, monitoring of human performance, random audits and inspections, other safety observations.
- that general engineering and operational system safety requirements are complied with. Refer to Section 6.19.

6.20A   Interoperability of railway operations

Reference to legislation/regulations:

Clause 20A in Schedule 1 of *Rail Safety National Law National Regulations 2012*

The interoperability of railway operations element in the Schedule of the Regulations only applies to RTOs that have been notified in writing by the Regulator that they are an RTO with railway operations that are undertaken on, or form part of, the National Network for Interoperability (NNI).

RTOs that are determined by the Regulator to be a tourist and heritage railway operator are exempt from including the interoperability of railway operations element in the SMS even if they undertake railway operations on the NNI.

Descriptor

The RTO is required to have systems and procedures for the identification and consideration of interoperability matters when planning changes to their railway operations on the NNI.

If interoperability matters are identified, the RTO is required to have an Interoperability Management Plan (IMP) to take into consideration those identified matters before changes are made to the railway operations on the NNI.

The IMP must set out any interoperability matters identified and include systems and procedures to ensure these interoperability matters are considered before making changes to railway operations on the NNI.

ONRSR has published the *Interoperability of railway operations Guideline* which provides ONRSR's minimum expectations for the identification and consideration of interoperability matters and IMPs. As this Guideline provides detailed information on interoperability of railway operations the information will not be repeated here.

As a minimum ONRSR expects

Systems and procedures

An RTO to have systems and procedures to identify and consider interoperability matters, as detailed in the *Interoperability of railway operations Guideline*, including for:

> the identification of the types of changes to railway operations on the NNI that may impact the safe and seamless operations with other RTOs on the NNI

> the identification of RTOs impacted by the initiating RTO's planned change including directly interfacing RTOs and other networks and operations across the NNI.

> consultation with identified RTOs that involves genuine engagement to seek and share information about the planned change and its likely impacts.

Interoperability Management Plans

> If, after applying the systems and procedures, the RTO initiating a change identifies interoperability matters, they must prepare an IMP.

> Each time an IMP is prepared, it must be included in the SMS and therefore RTOs must comply with the consultation requirements under section 99 of the RSNL.

> As outlined in the *Interoperability of railway operations Guideline*, RTOs may consider establishing procedures and processes to classify the identified interoperability matters into low, moderate or high levels. This classification will assist RTOs to determine the level of detail to incorporate into an IMP so that the consideration of interoperability matters is proportionate to the impact of the change on RTOs on the NNI.

> What RTOs should consider including in an IMP is outlined in the *Interoperability of railway operations Guideline.*

6.21   Asset management

Reference to legislation/regulations:

Clause 21 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

To ensure the organisation has a system for the control and management of assets so that the organisation may meet its business objectives safely for rail infrastructure and rolling stock operations.

Asset management systems shall cover all stages in the life-cycle of rail infrastructure and rolling stock operations including its design, construction, procurement, commissioning, operation, maintenance and decommissioning phases.

As a minimum ONRSR expects

> The asset management system to include;
>   - asset standards, general engineering standards, technical maintenance plans, procurement, contract management and processes control;
>   - asset register including asset identification, description, location;
>   - asset performance specifications;
>   - ownership and management responsibility;
>   - maintenance history;
>   - service life.

> There is evidence of:
>   - a policy and processes that address the treatment of an asset throughout its life cycle;
>   - a policy and procedure to describe how this information is communicated, e.g. asset standards, general engineering standards, technical maintenance plans, procurement, contract management and processes control.

> There is evidence of design parameters included such as:

  ▪ the operating parameters of the railway, e.g. axle load, minimum curve radius, track geometry tolerances, rolling stock outline, speed, visibility and braking performance;

  ▪ the standards to apply to the item of rolling stock or infrastructure, including engineering drawings, are available to confirm the specifications for the asset. Refer to Section 6.19;

  ▪ the original life of the asset (that is, age/use life).

> Evidence of construct records:

  ▪ The RTO ensures what is built meets the design criteria

  ▪ The RTO ensures the quality of the item being built

  ▪ A formal acceptance that the item is fit for purpose and safe to use.

> Evidence of test/commission records:

  ▪ Tests are conducted to confirm the item meets the design criteria and is fit for purpose and safe to use.

> Evidence of Operating requirements:

  ▪ The conditions under which the asset is operated and if this is consistent with its design.

  ▪ The use of the asset is modified or limited given its age, history of use and/or condition.

  ▪ A set of operating procedures describe the correct and safe way to operate the item.

  ▪ Training and assessment of competence is undertaken to operate and maintain the asset.

  ▪ Defects/faults are detected and reported for rectification.

  ▪ The asset/item is removed from service due to a defect/fault.

> Maintain:

  ▪ Inspection regime and maintenance schedules [How has the inspection regime been determined? Will it adequately monitor the condition of the asset? Refer to Section 6.20.

  ▪ Maintenance tolerances and condemnable criteria. Refer to Section 6.20.

  ▪ Training and assessment of competence is undertaken to inspect and maintain the asset.

  ▪ Defects/faults are reported and prioritised for rectification.

  ▪ Defects/faults are tracked until rectified.

  ▪ Records are kept providing a history of inspections and maintenance carried out on the asset.

> De-commission/dispose:

  ▪ A process for decommissioning to prevent the item (or component) from re-entering service (at least without requalification).

> Asset management systems include:

  ▪ A policy aimed at ensuring assets are fit for purpose and managed to a standard which ensures safety and performance.

  ▪ A comprehensive and up-to-date asset register.

  ▪ Interface with risk assessment.

- Details of how assets can fail, what causes the failures, the probability of failure, what happens when failure occurs and the consequence of each failure.
- A risk management approach to asset lifecycle (e.g. from concept, design, construction, procurement, commissioning, operation, maintenance and decommissioning).

> Risk Assessment

- Criteria for the design of assets and plant including human factors.
- Accountability/lines of authority for asset risks determined.
- Defined serviceability and safety standards.
- The use of risk-based data to identify emerging trends and new risks.
- Engineering authorities over standards, procedures, engineering waivers and deviations configuration management requirements to ensure continuity throughout the lifecycle of the asset.
- Up-to-date inspection schedules and/or recognised and managed backlogs.
- Details of the frequency of inspections required, based on risks, which are regularly reviewed to adapt to changes in asset condition.
- Plans for dealing with safety hazards brought into the organisation during asset renewal and disposal.
- Competence management arrangements for staff and contractors involved in the life cycle of the asset.

6.22 Safety interface coordination

Reference to legislation/regulations

Clause 22 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

RSNL | Section 105 | Requirements for a scope of interface agreements

RSNL | Section 106 | Interface coordination – RTOs

RSNL | Section 107 | Interface coordination – rail infrastructure and public roads

RSNL | Section 108 | Interface coordination – rail infrastructure and private roads

RSNL | Section 109 | Identification and assessment of risks

RSNL | Section 110 | Regulator may give directions

RSNL | Section 111 | Register of interface agreements

Descriptor

Parties, internal and external to the railway system, import risks onto a RTO such as other RTOs, level crossings, pedestrian and bicycle crossings, road networks, non-railway constructions etc. The SMS ensures that where risks occur at, or arising from, an interface the responsibility for risk controls is appropriately assigned and understood by all those with a role in the implementation of the control including the information required by and from each party to manage risks appropriately. In any agreement each party has a responsibility to identify and assess risks to safety at the interface and measures to manage these risks.

The agreement also covers the information required for effective communication between parties to manage interface risks as well as the exchange of information required between the parties in relation to their obligations under the agreement.

As a minimum ONRSR expects

> Identification of safety interfaces for which other persons/stakeholders have safety-related responsibilities.

> Development and implementation of interface agreements.

> Establishment and maintenance of a register of interface agreements.

> Monitoring effectiveness of, and compliance with, interface agreements.

> Management review - including communication protocols.

> Consultation with any other RTOs with whom the organisation has an interface agreement when proposing changes to the SMS - when these changes affect the interface agreement.

> Both parties have come together to jointly assess the risks of the interaction of their operations or have accepted the assessment of risk carried out by one of the parties.

> There are protocols on how information will be shared between the organisations where it is required to be shared.

Interface agreements should be in place:

> between two adjoining railways;

> between a private siding and the connecting railway;

> between rolling stock operators accessing and operating on railway managed by a rail infrastructure manager;

> for level crossings;

> for pedestrian and shared path level crossings, overbridges and underpasses;

> for roads over rail bridges;

> for roads under rail tunnels;

> for rail over road bridges;

> for rail under road tunnels;

> for Road Rail Vehicle operations;

> for property owners and lease holders;

> for utility providers;

> for tunnels and structures including station precincts in tunnels.

Other agreements can also be incorporated into an interface agreements such as an access agreement and network rules.

6.23 Management of notifiable occurrences

Reference to legislation/regulations

Clause 23 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Schedule 1A of *Rail Safety National Law National Regulations 2012*

RSNL Regulations | 57 | Reporting of notifiable occurrences

RSNL | Section 121 | Notification of certain occurrences

RSNL | Section 122 | Investigation of notifiable occurrences

Descriptor

This section is split into two parts: **notification** and **investigation**.

> Reporting of notifiable occurrences to ONRSR, within the time and manner required in the legislation and including all the information required by ONRSR;

> Management of the scene of a notifiable occurrence and for the preservation of evidence where reasonably practicable; and

> Management of all notifiable occurrences including procedures to enable the determination of which notifiable occurrences are to be investigated and how investigations are to be conducted.

ONRSR has published the Notifiable Occurrence Reporting Requirements Guideline which provide RTOs with the requirements for reporting notifiable occurrences to ONRSR in accordance with the RSNL to ensure compliance and applies to RTOs accredited under the RSNL. This is a mandatory guideline and must be followed. Because this provides detailed information on notifying of occurrences the information will not be repeated here.

ONRSR has published the Investigation Reports by Rail Transport Operators Guideline. This Guideline provides ONRSR's expectations of investigation reports prepared by, or for, Australian rail operators into a rail occurrence.

As a minimum ONRSR expects

Notification

> Systems and procedures which comply with the RSNL and ONRSR's Notifiable Occurrence Reporting Requirements Guideline*.*

> Systems and procedures which comply with the other elements listed in this guideline.

Investigation

> Systems and procedures which provide for, manage and cover the minimum expectations outlined in the *Investigation Reports by Rail Transport Operators Guideline.*

> Procedures will note that the level of investigation is determined by the severity and potential consequences of the notifiable occurrence as well as other similar occurrences and its focus to determine the cause and contributing factors rather than to apportion blame.

> Procedures ensure that the investigation is conducted in a manner approved by ONRSR and within a period specified by ONRSR. A RTO who has carried out an investigation under this section must report to ONRSR on the investigation within a period specified by ONRSR.

- > Processes and procedures ensure the preservation of evidence during an investigation.
- > Processes and procedures accommodate the interaction with ONRSR.
- > The SMS identifies matters for investigation more broadly than simply responding to any instruction from ONRSR to conduct an investigation of that occurrence or type of occurrence.

6.24   Rail safety worker competence

Reference to legislation/regulations

Clause 24 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

RSNL | Section 8 | Meaning of the rail safety work

RSNL | Section 117 | Assessment of competence

Descriptor

Effective rail safety management is dependent on a skilled and competent workforce. Rail safety workers have the skills, knowledge and experience to undertake their work safely and contribute to a positive safety culture and effective SMS.

As a minimum ONRSR expects

The RTO to understand: Who is a Rail Safety Worker?

Defining the rail safety worker as any worker undertaking the following:

- > driving or despatching rolling stock e.g. driver, train controller;
- > controlling signalling and or communications affecting the movement of rolling stock e.g. signaller;
- > coupling or uncoupling rolling stock e.g. shunter;
- > maintaining, inspecting or repairing rolling stock e.g. diesel maintainer, fitter;
- > maintaining, inspecting or repairing rail civil infrastructure e.g. repairer;
- > maintaining, inspecting or repairing rail signalling and communications infrastructure e.g. signal fitter;
- > certification of railway civil, signalling, telecommunications infrastructure and rolling stock e.g. engineers;
- > decommissioning of railway civil, signalling, telecommunications infrastructure and rolling stock e.g. engineers;
- > development, management and monitoring of railway safe working systems e.g. safety systems developers, train control planners;
- > managing or monitoring of passenger safety on or at any railway.

The RTO to understand their responsibilities to ensure competence

The competencies of the worker as well as processes and procedures to demonstrate that:

- > rail safety workers have the knowledge and skills required to do their work safely;
- > rail safety workers have been trained in accordance with appropriate Australian Quality Training Framework (AQTF) and Australian Qualifications Framework (AQF) or equivalent;
- > records of training have been retained;

> a rail safety worker's qualifications can be checked; and

> there is a periodic reassessment of rail safety workers

Processes and procedures to identify, assess and implement competency requirements

Management of rail safety worker competence is risk-based.

> identify the required competencies of the work;

> assess training and qualification options under the AQTF and AQF or equivalent;

> establish a competency training and assessment implementation plan;

> source accredited assessors; and

> undertake training and assessment.

Demonstrating alternative methods of competency

> The RNSL provides for situations where it is not reasonably practicable for a RTO to assess the competence of a rail safety worker in accordance with the AQTF and AQF. Reasons for this include:

  ▪ unavailability of registered training organisation;

  ▪ cost is prohibitive;

  ▪ geographic distance; and

  ▪ restricted (small) workforce.

> Where a RTO presents a case not to use the AQTF and/or AQF justification needs to be provided that satisfies ONRSR that:

  ▪ the rail safety worker has otherwise acquired the necessary qualifications and competencies; and

  ▪ the worker has the knowledge and skills that would enable the worker to carry out the rail safety work safely

> Alternative assessment of competency procedures needs to be fully documented along with any records of assessment.

Where In-house training and qualifications exists:

> Document an alternative method of internal competency assessment. This is commonly referred to as enterprise attainment. This effectively replicates the training or qualification provided by the AQTF and AQF and is delivered in-house.

> Note in the documentation that such a qualification would not be recognised under the AQF and is not transferable outside the organisation.

6.25 Security management

Reference to legislation/regulations

Clause 25 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The security of the railway operations is to protect people from theft, assault, sabotage, terrorism and other criminal acts of other parties and from other harm. Railway operations need to consider both physical and

cybersecurity. The processes and procedures to manage the security of the railway operations involves the following:

> Establishing and maintaining a security management plan.

> Conducting activities to ensure compliance with the current plan.

As a minimum ONRSR expects

> Processes and procedures are established to identify, assess, control, monitor and communicate the risks associated with security of railway operations. Refer to Section 6.16.

> Processes and procedures are established to train the relevant personnel to securely operate the railways.

> Processes and procedures are established to identify and provide the resources required to implement and review the security measures and procedures for the railway operations.

> Documented roles and responsibilities of personnel that are involved in implementing, reviewing and approving the security measures and procedures for railway operations. Refer to Section 6.5.

> Processes and procedures are established to review and audit the security measures and procedures.

> Process and procedures to document an interface agreement with emergency services and other RTOs that includes prevention and response to security related incidents.

> Processes and procedures are established to record and report any security related incidents.

> Processes and procedures are established to investigate any security related incidents.

> Adoption of good practice in physical security for example:

  ▪ Protective Security Policy Framework (PSPF).

> Adoption of good practice in cybersecurity for example:

  ▪ IEC 62443.

  ▪ AS 7770.

  ▪ Australian Government Information Security Manual (ISM).

6.26 Emergency management

Reference to legislation/regulations

Clause 26 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

RSNL | Section 113 | Emergency management plan

RSNL Regulations | 19 | Emergency management plan

RSNL Regulations | 20| Keeping, maintaining and testing emergency management plan

Descriptor

The RISSB National Guideline on Rail Emergency Management Planning defines an emergency as "any event when loss of life, property and/or/damage to the environment occur or are imminent requiring the immediate deployment and coordination of additional resources which are beyond the affected RTO's capabilities[2]".

The intent of an emergency management plan is to prepare for failure and provide clear guidance to personnel to minimise the consequences of an emergency. The SMS include an emergency management plan and systems and procedures to ensure it is implemented if an emergency occurs.

As rail incidents are usually complex and involve multi-agency action the EMP is developed in conjunction with emergency services that would be expected to attend in the event of a significant incident. Besides consultation requirement in par 2.13 RSNL 99(3), additional consultation is required and includes the following:

> providers of emergency services for example police, ambulance or firefighting services;

> any other RTO that may be affected by implementation of the plan;

> those who may be required to assist in the implementation of the plan including:

  ▪ providers of utility services such as water, sewerage, gas, electricity or telecommunications or like services;

  ▪ any person who is permitted to own or use a pipeline or is licensed to construct a pipeline; and

  ▪ providers of public transport.

As a minimum ONRSR expects

Developing an Emergency Management Plan

The emergency management plan is comprehensible and addresses all of the following:

> the types or classes of foreseeable emergencies to which it applies and their consequences, including estimates of the likely magnitude and severity of the effects of the emergency;

> evidence of identification of all emergencies that could arise and all the associated information for each of the identified emergencies are documented;

> the risks to safety arising from those emergencies;

> methods to mitigate the effects of those emergencies;

> initial response procedures for dealing with those emergencies and the provision of rescue services;

> recovery procedures for the restoration of railway operations and for the assistance of people affected by the occurrence of those emergencies;

> the allocation of emergency management roles and responsibilities within the RTO's organisation and between the RTO and other organisations;

> call-out procedures;

> the allocation of personnel for the on-site management of those emergencies;

> procedures for liaison with relevant emergency services, including information about the circumstances in which the emergency service providers are to be immediately contacted;

> procedures to ensure that emergency services are provided with all the information that is reasonably required to enable them to respond effectively to an emergency;

> procedures for effective communications and co-operation throughout the emergency response;

> procedures for ensuring site security and the preservation of evidence;

> evidence of consulting with all the parties as required under the law.

Communicating the plan

The SMS has processes to ensure, so far as is reasonably practicable, that all employees and contractors of the RTO who may be required to implement any emergency response procedures in the emergency management plan are:

> provided with information (including by way of briefings and appropriate education programs) about the relevant elements of the plan;

> able to do anything that may be required of them under the plan;

> the implementation of a communications strategy to ensure all parties have the latest emergency management plan and know what to do.

The emergency plan is <u>readily accessible at all times to all parties</u> noted in the section above "Development/ Consultation for The Plan".

Testing the plan

> The SMS has processes to ensure that the emergency management plan, or elements of the plan, are tested at intervals set out in the plan and after any significant changes are made to the plan to ensure it remains effective.

> The intervals for testing and verification of the plan is determined in conjunction with the emergency services, if it is reasonably practicable to do so. In-house testing is undertaken as often as necessary to ensure that the plan will be properly implemented should an emergency arise.

> Wherever reasonably practicable arrange the participation of emergency services in the testing of the plan or elements of the plan.

> appropriate response measures of the emergency management plan are implemented if an emergency occurs.

6.27   Health and fitness

Reference to legislation/regulations

Clause 27 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

RSNL | Section 114 | Health and fitness management program

RSNL Regulations | 27 | Health and fitness management program

Descriptor

The SMS must include a health and fitness program for rail safety workers.

The health and fitness program must comply with the requirements of the National Standard for Health Assessment of Rail Safety Workers published by the National Transport Commission, as amended from time to time.

The National Standard for Health Assessment of Rail Safety Workers provides extensive guidance for RTOs and is available on the National Transport Commission's website

As a minimum ONRSR expects

RTOs systems and procedures to comply with the requirements of the National Standard for Health Assessment of Rail Safety Workers in managing the health and fitness of their rail safety workers.

6.28 Drugs and alcohol

Reference to legislation/regulations

Clause 28 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

RSNL | Section 115 | Drug and alcohol management program

RSNL | Section 123 | Testing for presence of drug and alcohol

RSNL | Section 124 | Appointment of authorised persons

RSNL | Section 125 | Identity Cards

RSNL | Section 126 | Authorised person may require preliminary breath test or breath analysis

RSNL | Section 127 | Authorised person may require drug screening test, oral guild analysis and blood test

RSNL | Section 128 | Offence relating to prescribed concentration of alcohol or prescribed drug

RSNL | Section 129 | Oral fluid or blood sample or results of analysis etc not to be used for other purposes

RSNL Regulation | 28 | Drug and alcohol management program

RSNL Regulation | 56 | Periodic information to be supplied

Descriptor

A RTO's obligations regarding drug and alcohol management are to ensure SFAIRP that rail safety workers do not carry out rail safety work in relation to the RTO's railway operations and are not on duty while impaired by alcohol or a drug.

To manage the risk to safety of rail safety workers undertaking rail safety work whilst under the influence of drugs or alcohol, prepare and implement a drug and alcohol management program which includes systems and procedures to ensure compliance with the drug and alcohol management program provisions of the RSNL and National Regulations.

ONRSR has also implemented its own drug and alcohol testing program to monitor compliance with the RSNL and to monitor the effectiveness of RTOs' drug and alcohol management programs. The program consists of post-incident testing of rail safety workers in response to incidents and programmed ('non incident related') testing of rail safety workers.

A SMS must include a drug and alcohol management program to manage risks related to the use of drugs or alcohol in accordance with the requirements set out in Regulation 28 of the National Regulations.

As a minimum ONRSR expects

> That these include:

- a drug and alcohol policy;

- systems and procedures for the provision of information and education to rail safety workers in relation to the drug and alcohol management program;

- systems and procedures to ensure the confidentiality of rail safety workers' personal information in relation to drug or alcohol testing, counselling, treatment or rehabilitation;

- details of the drug and alcohol testing regime including testing procedures;

- measures to be taken by (or on behalf of) the RTO regarding the establishment of rules relating to the use of drugs and alcohol by rail safety workers (including prohibitions and restrictions on use)

and the identification of rail safety workers who have drug or alcohol related problems and, where appropriate, referral of those workers to assessment, treatment, counselling or rehabilitation;

- the obligations of rail safety workers with respect to the management of drug and alcohol use and the actions that may be taken by the RTO if there is a breach of those obligations.

> Testing in NSW must be conducted to an evidentiary standard in accordance with the legislative requirements in force in NSW.

> The drug and alcohol management program is regularly reviewed and the outcomes of the review documented.

> Education is the key to an effective drug and alcohol management program. RTOs must ensure that rail safety workers are aware of their obligations and responsibilities under the RTO's drug and alcohol management program.

> Workers also need to be aware that there are a number of offences in relation to ONRSR's drug and alcohol testing program (and testing by RTOs in NSW) where testing is required by an authorised person. Offences under the RSNL carry a maximum $10,000 penalty for a rail safety worker and include an offence for carrying out, or attempting to carry out, rail safety work while:

- any concentration of alcohol is present in the blood; or

- a prescribed drug is present in a person's oral fluid or blood. Prescribed drugs include cannabis (THC), methamphetamine and MDMA; or

- so much under the influence of alcohol or a drug as to be incapable of effectively discharging a function or duty of a rail safety worker.

Reporting to the Regulator

> RTOs are required to provide a monthly return which includes the number and type of drug and alcohol tests conducted, whether they were pre or post sign-on, the class of rail safety work undertaken by the rail safety workers who were tested, the employment relationship between the operator and the worker, and the outcomes of the tests.

*Note - RTOs with railway operations within New South Wales have additional requirements with respect to drug and alcohol testing (refer to regulation 28(2) of the National Regulations). Guidance on these requirements is available on the ONRSR website.

6.29 Fatigue risk management

Reference to legislation/regulations

Clause 29 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Clause 28 of Schedule 1A of *Rail Safety National Law National Regulations 2012*

RSNL | Section 116 | Fatigue risk management program

RSNL Regulations | 29 | Fatigue risk management program

RSNL Regulations | 9 (1)(a)(clause 10)| Prescribed conditions and restrictions

Descriptor

Fatigue risk management means having systems and procedures to ensure that human fatigue risk factors and fatigue-related safety risks associated with the type of rail safety work and work context are effectively managed and that rail safety work is not carried out when workers are impaired by fatigue.

Key requirements of the legislation are:

> A general duty for RTOs to ensure that rail safety workers do not carry out rail safety work while impaired by fatigue or if they may become so impaired.

> A requirement for the SMS to include a Fatigue Risk Management Plan (FRMP) for rail safety workers that provides for:

  - Risk assessment of fatigue factors impacting on rail safety workers and rail safety risks that could arise from fatigue.

  - Work scheduling practices linked to risk assessments to demonstrate that they are safe i.e. sufficient to manage fatigue-related risk SFAIRP.

  - Sufficient numbers of rail safety workers to meet foreseeable demand for relief.

  - Monitoring of hours of work including planned versus actual hours.

  - Reporting of breaches of work scheduling practices to ONRSR as Category C occurrences.

  - Notification of change to work scheduling practices to ONRSR.

  - Education and information on identifying and managing fatigue.

> The FRMP must be documented in procedures. These may be integrated into relevant safety and operational systems such as rostering, investigation, resource planning, competence management, risk management, human factors, health and fitness.

> General SMS requirements such as document control, allocation of accountabilities and responsibilities, internal communication, audit and corrective action also apply to the FRMP.

As a minimum ONRSR expects

Demonstration that the controls implemented for managing fatigue related risk, including work scheduling procedures, are linked to a safety risk management process as described in the following steps.

Systems and procedures to provide for, and cover to enable, safe scaling of fatigue risk management requirements as outlined in the ONRSR's Fatigue Risk Management Guideline.

Setting the scope and context

Systems and procedures to set the scope and context of the fatigue risk assessment including:

> The grouping of rail safety workers to ensure risk assessments are refined enough to identify context or task specific fatigue factors and safety risks. Grouping will enable risk assessments to demonstrate that the controls are relevant and sufficient to manage fatigue related risk in the particular contexts they will be applied.

> Applicable legislation or legal requirements e.g. WHS, industrial agreements or contracts.

> Relevant standards, codes, and guidance e.g. RISSB Guideline Fatigue Management in Rail.

> Business and stakeholder objectives.

> The expertise, people and methods needed to identify and analyse fatigue-related risk.

Identifying fatigue factors

Systems and procedures which use sources of information to identify the fatigue factors including:

> Consultation with workers who do the tasks to identify fatigue risk factors specific to their work contexts.

> Incident investigation reports.

> Research findings or industry guidance on fatigue risk factors.

> Reports on results of monitoring hours of work including planned versus actual to assess factors such as predictability and regularity of work hours and sufficiency of resourcing.

> Reports of fatigue events where workers have self-identified as fatigued or reported fatigue issues such as inability to take breaks, poor accommodation etc.

Systems and procedures which identify of the fatigue factors that RTO's must assess for relevance to their operations (Regulation 29(1)) shown in Figure 1.

These factors are not exhaustive and any potential issue that may relate to fatigue must be considered by the RTO as part of a thorough risk assessment process.
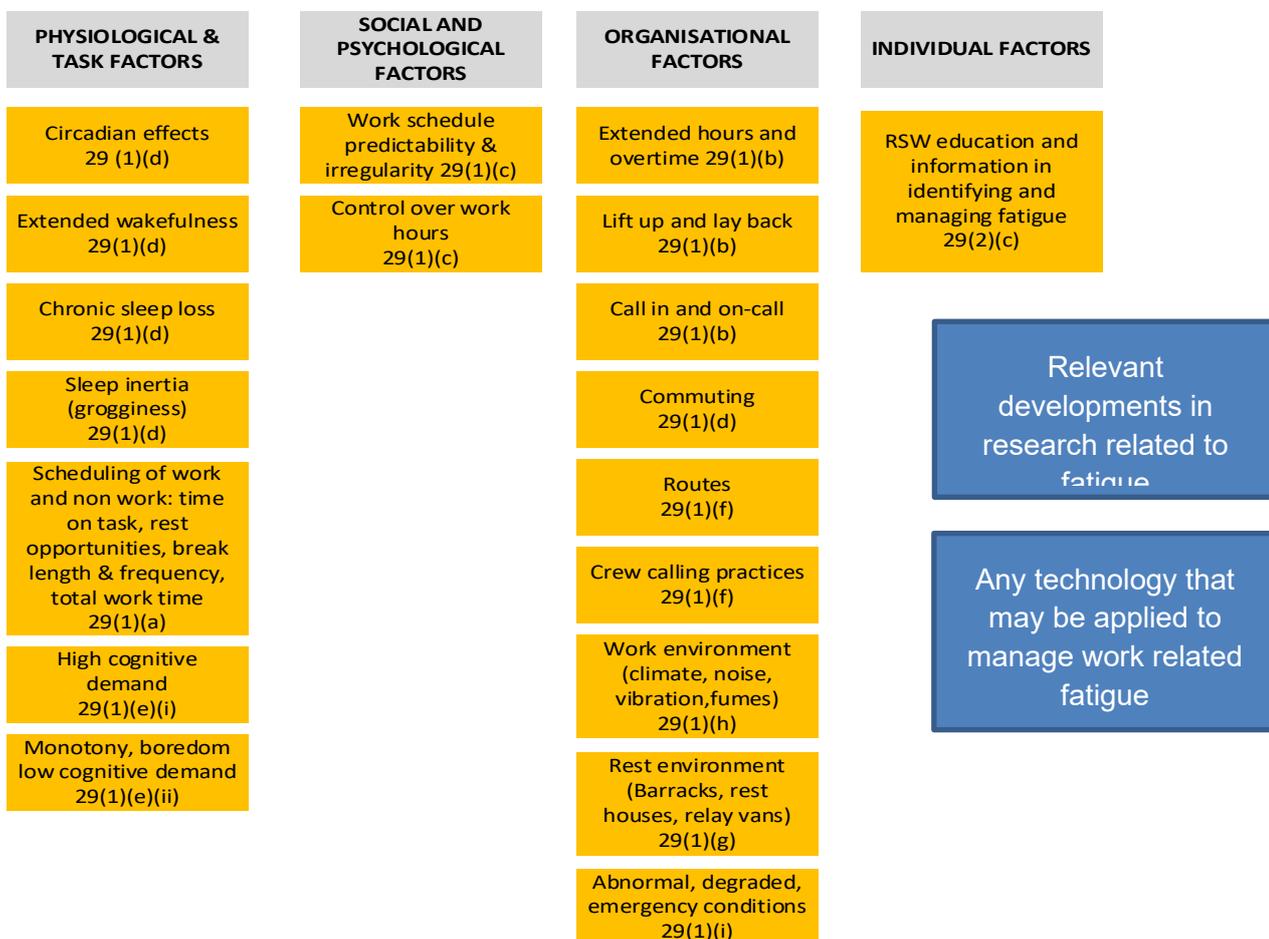
PHYSIOLOGICAL & TASK FACTORS	SOCIAL AND PSYCHOLOGICAL FACTORS	ORGANISATIONAL FACTORS	INDIVIDUAL FACTORS
Circadian effects 29 (1)(d)	Work schedule predictability & irregularity 29(1)(c)	Extended hours and overtime 29(1)(b)	RSW education and information in identifying and managing fatigue 29(2)(c)
Extended wakefulness 29(1)(d)	Control over work hours 29(1)(c)	Lift up and lay back 29(1)(b)	
Chronic sleep loss 29(1)(d)		Call in and on-call 29(1)(b)	
Sleep inertia (grogginess) 29(1)(d)		Commuting 29(1)(d)	Relevant developments in research related to fatigue
Scheduling of work and non work: time on task, rest opportunities, break length & frequency, total work time 29(1)(a)		Routes 29(1)(f)	
		Crew calling practices 29(1)(f)	Any technology that may be applied to manage work related fatigue
High cognitive demand 29(1)(e)(i)		Work environment (climate, noise, vibration,fumes) 29(1)(h)	
Monotony, boredom low cognitive demand 29(1)(e)(ii)		Rest environment (Barracks, rest houses, relay vans) 29(1)(g)	
		Abnormal, degraded, emergency conditions 29(1)(i)	

Figure 1: Fatigue Factors

Analysing fatigue-related risk

Systems and procedures to analyse how the fatigue risk factors may impact on risk.

Systems and procedures which cover the following aspects of fatigue risk analysis:

> Analysing the impact of the combination of fatigue risk factors (Reg 29 (1)) on rail safety workers and fatigue likelihood noting that fatigue risk factors may interact.

> Assessing the effectiveness of existing controls in managing fatigue.

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> Assessing the effectiveness of operational procedures and engineered controls in mitigating the consequence of fatigue related error (this activity will generally be linked to wider risk and human factors assessments).

> Analysing the timing of safety critical tasks relative to when fatigue may be elevated.

> Identifying the rail safety risks that could occur if workers are impaired by fatigue.

> Documenting any assumptions or limitations of the analysis method or tools.

Systems and procedures which identify the information sources to assist with risk analysis such as:

> Consultation with rail safety workers who undertake the tasks.

> Fatigue risk factor analysis tools and bio-mathematical models.

> Worker surveys and use of validated sleepiness scales.

> Research reports and guidance.

> Risk register.

> Job descriptions and work method statements to identify safety critical elements.

> Task analysis and use of human error identification techniques.

> Reports of monitoring of hours of work and overtime to analyse the effectiveness of existing work scheduling / rostering practices to assess if they are working as intended.

> Fatigue reports or incident data to suggest any issues with controls for detecting and managing fatigue related error such as equipment, work methods or procedures.

> Resourcing formulae including methods of forecasting staffing needs and relief arrangements based on foreseeable impacts e.g. historical patterns of absence, attrition, worker age profile, leave liability, new business impacts, and organisational restructures.

> Review of fatigue reporting data to assess if workers are using the fatigue reporting system and a positive safety culture is applied to encourage reporting.

> Review of performance metrics embedded in data captured by operational systems or fatigue detection technologies.

Evaluating fatigue-related risk

Systems and procedures which take into account the following aspects of fatigue risk evaluation:

> Identifying if anything else can be done (in addition to existing controls) to reduce fatigue by improving scheduling of work and rest, changing the timing of safety critical tasks to periods of lower fatigue or improving staffing arrangements including forecasting of demand.

> Identifying options to make systems and procedures more resilient to human error.

> Considering unintended consequences or transfer of risk (e.g. changing one part of the roster may reduce fatigue or risk for some workers but increase it for others).

> Consulting with the rail safety workers who may be affected by any changes.

> Documenting the decision making process including keeping a record of the results of consultation, scientific information or expert inputs.

Treating- fatigue related risk

Systems and procedures which state how fatigue risk will be treated including:

> Assigning accountability and responsibilities for implementing the new or amended control measures.

> Notifying ONRSR of any decision to change work scheduling practices (Regulation 9(1)(a)(10)).

> Updating relevant systems and procedures to ensure that all controls in the fatigue risk management program are documented.

> Updating information or education where the change impacts on the ability of rail safety workers to identify and manage fatigue (Regulation 29 (2) (c).

Monitoring and reviewing the FRMP

Systems and procedures which cover the mandatory monitoring requirements in the RSNL and include:

> Reporting results of monitoring of hours of work to accountable managers at set intervals.

> Setting of scheduled reviews of the FRMP.

> Setting criteria for triggered reviews in response to incident data, fatigue reports or an operational change that impacts on workload, scheduling or predictability of work hours.

> Auditing at set intervals to check that fatigue controls are implemented effectively.

> Including set criteria for investigating fatigue as part of investigation protocols.

> Keeping in touch with recent developments in fatigue research and technologies.

6.30   Resource availability

Reference to legislation/regulations

Clause 29 in Schedule 1 of *Rail Safety National Law National Regulations 2012*

Descriptor

The availability of resources is critical to the effective operation of a rail SMS. Resource allocation is part of normal business processes and makes due allowance for all aspects of railway safety management.

As a minimum ONRSR expects

> The SMS is required to include systems and procedures for estimating the resources including people and equipment that the RTO will need:

  - to operate and maintain its railway operations;

  - to implement, manage and maintain its SMS; and

  - for the preparation of plans to ensure adequate access to the resources needed.

> Evidence that such processes form part the normal business planning cycle in which resource needs for the coming period are estimated and planned for and subsequently reviewed to ensure that resources are being appropriately managed.

> Evidence that where applicable resource requirements will be identified through risk assessment and control activities. For example, fatigue risk management programs may dictate availability of certain levels of staffing; human performance may be negatively affected by lack of resources; or critical tasks

may not be able to be conducted or may be compromised due to a lack of availability of equipment required.

Appendix 1: References and resources

Office of the National Rail Safety Regulator

Legislation, policies, guidance and other tools are available on the ONRSR website at www.onrsr.com.au

Fact sheets

A guide to Rail Safety Officer worksite visits

A guide to road rail vehicles and the law

About the Cost Recovery Model Fact Sheet

Assessment of Rail Safety Worker Competence Fact Sheet

Changes to the *Rail Safety National Law* Fact Sheet 2016

Changes to the Rail Safety National Law 2017 Fact Sheet

Changes to the Rail Safety National Law 2019 Fact Sheet

Control Assurance

Drug and Alcohol – Introduction of Urine Testing

Drug and Alcohol – ONRSR's Testing Program

Drug and Alcohol – Requirements for Rail Transport Operators (NSW Only)

Drug and Alcohol – Requirements for Rail Transport Operators

Drug and Alcohol – Scalability of Drug and Alcohol Management Requirements

Drug and Alcohol – Changes to the NSW D&A Testing Identity Card Issuing Process

Duties of Rail Safety Workers Fact Sheet

Fatigue Risk Management in NSW Fact Sheet

General Safety Duties under the RSNL – 'Upstream' Duty Holders Fact Sheet

Interface Agreements Fact Sheet

Interface Agreements for Road Managers

Interpretation of Queensland Specific Fatigue Requirements: FAQs

Labour Hire under the RSNL Fact Sheet

Major Project Fees Fact Sheet

Recommencement of Rail Operations for Tourist & Heritage Operators after an Extended Shutdown

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Safety Critical Software Assurance

System Integration

Works Near or On Railways and Interaction with Utilities Fact Sheet

Guidelines

Asset Management Guideline

Drug and Alcohol Post Incident Testing Industry Poster

Duty Holders on Transition to the *Rail Safety National Law* Guideline

Fatigue Risk Management

Identifying Rail Safety Work Under the RSNL

Identifying Rail Safety Work Under the RSNL (WA only)

Interoperability of Railway Operations Guideline

Investigation Reports by Rail Transport Operators Guideline

Major Projects Guideline (inc Effective Control & Management of Major Projects)

Meaning of Duty to Ensure Safety So Far as is Reasonably Practicable Guideline

Monthly Reporting Requirements

Network and Railway Operations Data Submission Requirements

Notifiable Occurrence Reporting Requirements

Occurrence Data Submission Requirements

Rail Locomotive Boilers Guideline

Rail Resource Management Guideline

Road/Rail Vehicle Management and Operations Guidance

Safety Performance Reporting including example SPR National Data Strategy Guideline

Template Interface Agreement for Rail or Road Crossings

The ONRSR Way

Using the Template Interface Agreement for Rail or Road Crossings Guideline

Policies

Application of Cost Benefit Analysis Requirement Policy

Application of the AQF to Rail Safety Worker Competence Assessment Policy

Compliance and Enforcement Policy

Drug and Alcohol Testing Policy

Fees Policy

Level Crossings Policy

Privacy Notice APP5

Privacy Policy

Review of Decisions Policy

Safety Improvement Policy

Whistleblower and Public Interest Disclosures Policy Statement

Australian Standards

Australian standards may be a useful source of additional and more detailed guidance on specific aspects of rail safety management. There are many useful standards, some of these include:

> ISO 31000-02 Risk Management - Guidelines

> Australia Standards HB 89-2012 Risk management - Guidelines on risk assessment techniques

> SA/SNZ HB 436:2013 Risk Management Guidelines – Companion to AS/NSZ ISO 31000

> AS 4292.1 Railway Safety Management – General Requirements

> AS 4292.2 Railway Safety Management – Track, Civil and Electrical Infrastructure

> AS 4292.3 Railway Safety Management – Rolling Stock

> AS 4292.4 Railway Safety Management – Signalling and Telecommunications Systems and Equipment

> AS 4292.5 Railway Safety Management – Operational Systems

> AS 4292.7 Railway Safety Management – Railway Safety Investigation

> ISO9001 Quality Management Systems

National Health Assessment Standard

National Transport Commission (NTC) "National Standard for Health Assessment of Rail Safety Workers" available from www.ntc.gov.au

Appendix 2: Guidance on the use of standards

Standards are documents that set out specifications, procedures and guidelines that aim to ensure products, services, and systems are safe, consistent, and reliable.

By railway operations and railway premises, we mean railway operations and railway premises defined in section 4 of the RSNL.

The purpose of this section is to provide guidance to duty holders on the use of standards which are relevant to the safety of railway operations and railway premises.

This section is limited to those persons who:

> have a duty ('duty holders') under the Act; and

> who use, or intend to use, standards which are relevant to the safety of railway operations and railway premises.

This section aims to sets out good practice on the use of standards but is not mandatory. ONRSR will consider other means of achieving safe railway operations and railway premises provided those means comply the requirements of the Act and Regulations.

Part 1. - General information on standards

The types of standards can be categorised into two groups: mandatory and non-mandatory standards.

Mandatory standards

As the time of publication, the only mandatory standard is the <u>National Standard for Health Assessment of Rail Safety Workers</u> published by the National Transport Commission in January 2017 - as amended from time to time. This mandatory standard is prescribed in legislation.

It must be followed, so far as is reasonably practicable, in relation to the development and implementation of health and fitness programs as per regulation 27 of the Regulations.

Non-mandatory standards

Non-mandatory standards are those standards which are not prescribed in rail safety legislation. For example standards produced by industry, standards-setting bodies, associations, committees, groups or institutions, but which are not specifically listed or prescribed in rail safety legislation. Nevertheless, ONRSR considers duty holders' use of non-mandatory standards important in ensuring safety risks are eliminated or minimised so far as is reasonably practicable. Thus, one of the aspects ONRSR will take into account in assessing duty holders' compliance with rail safety legislation is duty holders' use of non-mandatory standards. In assessing duty holders' use of non-mandatory standards ONRSR will take into account those principles listed in Part 2 (below).

Part 2. - General principles on the use of non-mandatory standards

ONRSR provides the following general principles to be applied when using non-mandatory standards. ONRSR will take into account these general principles when assessing duty holders' use of non-mandatory standards. Where the following general principles on the use of non-mandatory standards cannot be met please refer to Part 3.

> If a standard is available and relevant to given railway operations use that standard in preference to not using a standard to cover railway operations or railway premises.

> Standards which ensure or provide a higher level of safety are to be used in preference to those that offer a lower level of safety.

> The most relevant and applicable standard is to be used, i.e. railway standards are to take precedence over standards from other industries or generic standards.

> The latest or current version of a standard is to be used in preference to a superseded version of a standard.

> Standards widely accepted in industry are to be used in preference to those that have had limited acceptance.

> Standards from Australia are to be used in preference to standards from overseas. If Australian standards are not available or not applicable standards from other industry, regulatory or country standards-setting bodies, associations, committees, groups or institutions are to be used instead.

> Entire standards are to be used in preference to only specific clauses, sections or parts of standards.

Part 3 - Deviation from general principles

Where the general principles listed in Part 2 cannot be met ONRSR will expect that the duty holder is able to justify why. ONRSR will have regard to whether the duty holder's justification is proportionate to both the risk and extent of the deviation from the general principles. ONRSR will consider whether the justification provides a clear, robust and convincing argument that:

> the risks have been thoroughly assessed in accordance with the SMS of the RTO; and

> the costs associated with complying with one or more of the general principles is disproportionate to the benefits of complying with them.

ONRSR will take into consideration whether the justification covers the following:

> What the deviation is.

> How long the deviation will be expected to last. i.e. will the deviation be over an unknown period of time, over the lifetime of the system, subsystem or component it is applied to, or a definite period of time.

> A description of the proposal for future compliance, if relevant, with general principles.

> A comparison of the risks associated with the deviating versus complying with the general principles.

> Consideration of options or other alternatives to control the risk.

> Any guidance within the standard in question which describes the process of how deviation from that standard to be undertaken.

Part 4. - Reference list of organisations which produce standards

The following is non-exhaustive list of industry, regulatory or country standards-setting bodies, associations, committees, groups or institutions that produce standards:

> Standards Australia (AS)

> Rail Industry Safety and Standards Board (RISSB)

> International Organization for Standardization (ISO)

> International Electrotechnical Commission (IEC)

> Institute of Electrical and Electronics Engineers (IEEE)

> European Standardization Organizations (EN)

> European Committee for Electrotechnical Standardization (CENELEC)

> European Telecommunications Standards Institute (ETSI)

> International Union of Railways (UIC)

> British Standards (BS)

> American National Standards Institute (ANSI)

> Rail Safety and Standards Board (RSSB)