

Guideline

**Meaning of duty to ensure
safety so far as is reasonably
practicable - SFAIRP**

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- > Format review

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Foreword

This guideline accompanies and is complementary to the Rail Safety National Law (RSNL) and the National Regulations. It is intended for general application across the rail industry where the RSNL applies. The advice provided in this document is not intended to replace the provisions of the RSNL or other relevant legislation or to limit or expand the scope of such legislation. In the event of any perceived inconsistency between this guideline and relevant legislation, the legislation will prevail.

This document is a general guideline only and is not a substitute for professional legal advice. The contents of this document are correct at the time of writing. However, there may be subsequent decisions of courts or tribunals on the matters covered by this guide which mean that the contents are no longer accurate.

Answers to specific queries about the RSNL and National Regulations can be obtained from the Office of the Rail Safety National Regulator (ONRSR).

This guideline was originally adapted from the Safe Work Australia Interpretive Guideline – Model Work Health and Safety Act – “The Meaning of Reasonably Practicable” and the ONRSR acknowledges the work of Safe Work Australia.

Version 2 of this guideline has been updated to clarify a number of aspects of the SFAIRP principle, including the use of quantitative risk analysis and the relationship between SFAIRP and the As Low As Reasonably Practicable (ALARP) principle. Additional references to RSNL requirements, the Major Projects Guideline, the Asset Management Guideline and ISO 31000 have been included. Further guidance on continuous improvement in ensuring safety and Reverse SFAIRP (removal of controls) has also been added.

The ONRSR is actively engaged with the Rail Industry Safety and Standards Board (RISSB)'s work to develop guidance on safety decision making and will consider further updates to this guideline following completion of the RISSB work in 2015. The ONRSR also plans to develop further guidance on the use of cost benefit analysis in decision making.

1. Purpose

The Office of the National Rail Safety Regulator (ONRSR) has been established under the Rail Safety National Law (RSNL) to administer a national system of rail safety regulation.

Sections 52, 53 and 54 of the RSNL provide that rail transport operators and associated industry participants (contractors, manufacturers, designers and suppliers) – referred to collectively as duty holders – have an obligation to ensure the safety of railway operations. These statutory duties do not require safety at any cost. Duties to ensure safety are qualified by the statement ‘so far as is reasonably practicable’ (SFAIRP).

The purpose of this document is to provide guidance on the interpretation and application of the term ‘so far as is reasonably practicable’ in considering the standard that a duty holder is expected to meet under the RSNL and National Regulations.

2. Management of risks ‘So Far As Is Reasonably Practicable’

Under section 46 of the RSNL, duty holders are required:

- > to eliminate risks to safety so far as is reasonably practicable; and
- > if it is not reasonably practicable to eliminate risks to safety, to minimise those risks so far as is reasonably practicable.

The above duties are referred to in this guideline as the duties to ‘ensure safety SFAIRP’.

The concept of SFAIRP is to achieve the best possible safety outcomes, to the extent that is ‘reasonably practicable’.

The RSNL (s101) requires a safety management system (SMS) of a Rail Transport Operator to provide for all of the matters listed in Schedule 1 of the National Regulations. This includes a requirement for risk management to be part of an SMS. ISO 31000¹ establishes principles for effective risk management, and a framework for integrating the process for managing risk into an organisation. The ONRSR considers that this document provides good practice for duty holders in the management of risk although it should be noted that the RSNL has specific requirements for risk management - sole compliance with ISO 31000 is not sufficient to meet these requirements and the specifics of the RSNL must be taken into account. Further guidance on the legislative requirements of the SMS and how ISO 31000 can be used in conjunction with these requirements can be found in the ONRSR document [Preparation of a Rail Safety Management System Guideline](#).

3. How is ‘Reasonably Practicable’ defined?

In this context, and under the RSNL (s47), reasonably practicable means that which is, or was at a particular time, reasonably able to be done to ensure safety, taking into account and weighing up all relevant matters including:

- > the likelihood of the hazard or the risk concerned occurring; and
- > the degree of harm that might result from the hazard or the risk; and
- > what the person concerned knows, or ought reasonably to know, about the hazard or risk, and ways of eliminating or minimising the risk; and
- > the availability and suitability of ways to eliminate or minimise the risk; and

¹ ISO 31000:2009 Risk Management – Principles and guidelines

- > after assessing the extent of the risk and the available ways of eliminating or minimising the risk, the cost associated with available ways of eliminating or minimising the risk, including whether the cost is grossly disproportionate to the risk.

4. What is reasonably practicable is an objective test

What is reasonably practicable is determined objectively. This means that a duty holder must meet the standard of behaviour expected of a reasonable person in the duty holder's position and who is required to comply with the same duty.

There are two elements to what is reasonably practicable. A duty holder must first consider what can be done - that is, what is possible in the circumstances for ensuring safety. The duty holder must then consider whether it is reasonable, in the circumstances to do all that is possible.

This means that what can be done should be done unless it is only reasonable in the circumstances for the duty holder to do something less.

The determination of what is 'reasonably practicable' can never be a simple formula that the duty holder calculates by inputting values for known variables. The 'comfort' of the individual duty holder is borne from adhering to the decision making process and taking into account all relevant matters in an appropriate way. There are no guarantees that a court will agree with a duty holder's determination of what is or was 'reasonably practicable' in a given situation, however, it is far more probable the court will agree with the duty holder's determination of what is or was 'reasonably practicable' if a process of justified decision making is adhered to.

5. How to determine what is reasonably practicable – the process

To identify what is or was reasonably practicable all relevant matters must be taken into account. These matters must be weighed up and a balance achieved that will provide the highest possible level of protection that is reasonable in the circumstances. Some matters may be relevant to what can be done, while others may be relevant to what is reasonable to do. This applies equally to determinations that have a long-term impact (e.g. the introduction of new rolling-stock) as it does to determinations that have a short-term impact (e.g. degraded mode operation of rolling-stock).

Section 47 sets out a number of specific considerations for ensuring safety. However, they should not be read in isolation as there may be other factors that could be considered.

For example:

- > there may be other legislation that requires or prohibits certain activities and limits what a duty holder can do; and
- > the level of control or influence a duty holder has over a particular thing or the actions of another person, such as managing risks where the management is to a certain extent 'contracted out' to a supplier. The RSNL (s51) makes it clear that a duty holder cannot avoid responsibility in such an arrangement which means the duty holder must have arrangements for ensuring such suppliers comply with the requirements of the RSNL.

In addition, the RSNL and National Regulations specify other risk management requirements, including documentation, with which accredited rail transport operators and registered rail infrastructure managers must comply.

The duty holder should consider all of the facts and identify and consider everything that may be relevant to the risks and means of eliminating or minimising those risks.

The matters that must always be taken into account and weighed up are discussed in the following paragraphs.

5.1 Likelihood and Consequence

Risk is a product of likelihood of the hazard or risk occurring and the degree of harm that may result. Both factors must be carefully considered to ensure safety SFAIRP.

The greater the likelihood of a risk eventuating, the greater the significance this will play when weighing up all matters and determining what is reasonably practicable. If harm is more likely to occur, then it may be reasonable to expect more to be done to eliminate or minimise the risk.

The greater the degree of harm that could result from the hazard or risk, the more significant this factor will be when weighing up all matters to be taken into account and identifying what is reasonably practicable in the circumstances. Clearly, more may reasonably be expected of a duty holder to eliminate or minimise risks with the potential for fatalities than risks of lesser harm.

The assessment of the likelihood of the hazard or risk occurring should take into account the possibility of human error and reasonably foreseeable forms of misuse on the part of workers or other persons.

Typically the greater the degree of harm that may result from the hazard or risk the more time and effort should be expended in ensuring safety.

Depending on the nature of the risk, determining the likelihood and consequence may be done either qualitatively or quantitatively. The ONRSR encourages quantitative risk analysis for risks that are assessed as having the potential for a high or extreme consequence.

Any risk criteria² set by a duty holder for the purposes of evaluating its risks must be appropriate to the nature of the risk to be evaluated – for quantitative risk the ONRSR encourages duty holders to establish quantitative risk criteria³ (see also the ONRSR [Major Projects Guideline](#)). In setting any risk criteria for the evaluation of risk, the duty holder should ensure that the risk criteria are not in conflict with requirements of the RSNL to ensure safety SFAIRP.

5.2 What the person concerned knows, or ought reasonably to know, about the hazard or risk and any ways of eliminating or minimising the risk

The knowledge about a hazard or risk, and any ways of eliminating or minimising the hazard or risk, will be what the duty holder actually knows, and what a reasonable person in the duty holder's position (e.g. a person in the same industry) would reasonably be expected to know. This is commonly referred to as the 'state of knowledge'.

A duty holder can gain this knowledge in various ways, for example by:

- > consulting their workers;
- > consulting others in the industry and determining what is industry good practice;
- > undertaking risk assessments;
- > analysing previous incidents;

² ISO 31000:2009 (Risk Management – Principles and guidelines) defines risk criteria as the terms of reference against which the significance of a risk is evaluated. The results of risk analysis are compared against risk criteria in order to assist in determining what action, if any, is required to treat the risk

³ Quantitative safety risk criteria are typically described in terms of individual risk (the probability an individual exposed to the risk will be killed in a year) or fatalities/Fatalities and Weighted Injuries per year.

- > considering relevant Regulations and Codes of Practice and other sources of information such as:
 - material published by the Office of the National Rail Safety Regulator;
 - reputable technical standards, such as those published by the Rail Industry Safety and Standards Board (RISSB) and Standards Australia;
 - industry publications; and
 - published scientific, academic and technical literature.

To assist, the ONRSR has published a safety bulletin on learning the lessons from international incidents which lists a number of Australian and overseas sources for gaining knowledge on rail incidents.

See <http://www.onrsr.com.au/resource-centre/safety-bulletins>

Knowledge about the hazard or risk

It is reasonably practicable for a duty holder to:

- > proactively take steps to identify hazards within their business or undertaking before they cause an incident, injury or illness. This should be done before the activity is undertaken or the circumstances occur that result in the risk.
- > understand the nature and degree of any harm that an identified hazard may cause, how the harm could occur, and the likelihood of the harm occurring.
- > It is also reasonably practicable for a duty holder to consider and understand, within the available state of knowledge, how the following may cause or increase hazards and risks:
 - > potential failure of plant, equipment, systems of work or safety measures;
 - > human error or misuse, spontaneity, panic, fatigue or stress; and
 - > interaction between multiple hazards that may, together, cause different risks.

Knowledge about ways of eliminating or minimising the risk

Approved codes of practice or industry standards may provide practical guidance on methods of eliminating or minimising risks, SFAIRP. A court may have regard to an approved code of practice or industry standard as evidence of what is known about a hazard or risk, risk assessment or risk control, and may elect to rely on the code or standard in determining what is reasonably practicable in the circumstances to which the code relates.

Good practice and standards may in some cases be sufficient to ensure safety SFAIRP. Duty holders should consider the relevance of a particular good practice or standard to the risk to be managed, determine whether it is still current and whether additional controls are also required. In particular, care should be taken when a standard is specified as a minimum requirement or where the standard has options in how it is applied. In such cases, duty holders should determine whether the minimum is sufficient, and what options are required to ensure safety SFAIRP.

In the case of technical standards, they can often apply to particular systems, structures or sub-systems. Duty holders should consider system interfaces and what effect these may have on the suitability of standards to ensure safety SFAIRP.

Although duty holders do not usually have to strictly comply with approved codes of practice, when determining what is reasonably practicable, duty holders must be able to demonstrate a level of safety that is the same, equivalent or better than that achieved by the approved code of practice (RSNL s250).

There may be many different ways of eliminating or minimising risks. The duty holder should identify as many of these as it reasonably can, to give them the greatest scope to choose

and apply the most appropriate means to eliminate or minimise a risk in the particular circumstances.

5.3 Availability and suitability of ways to eliminate or minimise risks

This part requires a consideration of not only what is available, but also what is suitable to ensure safety SFAIRP. A risk control that may be effective in some circumstances or environments may not be effective or suitable in others, because of things such as the physical characteristics of the system, skills of relevant workers, or the particular way in which the work is done.

Equipment to eliminate, or if this is not reasonably practicable, to minimise a hazard or risk is regarded by the ONRSR as being available if it is provided on the open market, or if it is reasonably possible to manufacture it.

A work process (or change to a work process) to eliminate, or if this is not reasonably practicable, to minimise a hazard or risk is regarded by the ONRSR as being available if it is feasible to implement.

A way of eliminating, or if this is not reasonably practicable, of minimising a hazard or risk is regarded by the ONRSR as suitable if it:

- > is effective in eliminating or minimising the likelihood or degree of harm from a hazard or risk;
- > does not introduce new and higher risks in the circumstances; and
- > is practical to implement in the circumstances in which the hazard or risk exists.

In assessing the suitability of risk controls, the duty holder may also consider whether they will be:

- > technically and logistically suitable, for example, compatible with the existing systems or operating requirements, or available at the locations required;
- > environmentally suitable, for example, suited to the climatic conditions or operating environment; and
- > effective at reducing the risk.

The following points should also be considered:

- > as well as meeting the SFAIRP test, any decision to reject risk controls and/or tolerate high or extreme risks must be made in compliance with an individual duty holder's SMS;
- > the level of risk reduction offered;
- > other independent risk controls providing protection;
- > the potential for common failure modes which could render more than one risk control ineffective; and
- > the hazards a particular control deals with.

Some workplace health and safety legislation requires application of the hierarchy of controls which provides a priority order in which potential control measures should be considered in determining which are reasonably practicable. The hierarchy promotes the selection of controls that have a greater effect on the risk and which are more reliable. For example, an engineering control is promoted ahead of administrative controls or the use of personal protective equipment. While the hierarchy of controls is not a feature of the RSNL, the ONRSR still expects duty holders to prioritise more effective and reliable controls ahead of less effective ones.

In determining risk treatments to ensure safety SFAIRP, the elimination of risk should be given due consideration, and where elimination is not reasonably practicable the extent to

which a control may reduce a risk, on its own or together with other controls, should be considered when weighing up what can reasonably be done.

Some controls may lower the likelihood of harm, others may lower the degree of harm that may result, and some may lower both. While the hierarchy of controls is a useful reference, it may be necessary for a duty holder to implement more than one control in determining what is reasonably practicable.

A Rail Transport Operator must implement its SMS, including implementation of available and suitable risk controls. The ONRSR expects identification and documentation of who is responsible for implementing the risk control measures (National Regulations, Schedule 1), and where external parties are involved, the respective roles and responsibilities of these parties.

If alternative or additional controls are not considered practicable then their rejection should be documented (RSNL s100 (2)). Importantly, if it is concluded that the decision to do nothing is reasonably practicable then this decision should also be documented.

Non-safety related considerations

Commercial considerations may also be a factor in a duty holder's decision-making. For example, it is rational and indeed necessary that duty holders consider foreseeable political and public reactions to possible accident scenarios (e.g. those involving multiple fatalities). It is important that duty holders consider the implications arising from those incidents (loss of assets, revenue, patronage, etc.), and as a result, consider whether this justifies a higher level of risk control than would otherwise be provided. This is an appropriate method for taking into account 'societal concerns', recognising that perceptions of safety affect the reality of commercial performance to the extent to which they affect behaviour of customers, the public and other persons potentially affected by the undertaking of the railway operations.

5.4 Cost of eliminating or minimising the risk

Although the cost of eliminating or minimising risk is relevant in determining what is reasonably practicable, there should be clear favourability of safety ahead of cost.

The RSNL requires that the cost of eliminating or minimising risk should be taken into account **after** identifying the extent of the risk (the likelihood and degree of harm) and the available ways of eliminating or minimising the risk.

The costs of implementing a particular control measure may include costs of purchase, installation, maintenance and operation of the control measure and any impact on productivity as a result of the introduction of the control measure.

A calculation of the costs of implementing a control measure should take into account any benefits, e.g. fewer incidents and injuries, equipment failures, potentially improved productivity and other business savings.

In identifying whether a particular expenditure is reasonable in the circumstances, the duty holder must consider:

- > the likelihood and degree of harm of the hazard or risk; and
- > the reduction of the likelihood and/or degree of harm that will result if the control measure is adopted. This is also referred to as the risk reduction.

In considering the risk reduction, at least two estimates of risk should be made; one before the implementation of a control measure and one after. The risk reduction is the difference in risk between the two estimates, summed over the life of the risk control. The risk reduction may also be referred to as the 'safety benefit'.

Often, a simple comparison of these benefits and the costs of the improvement can lead to a decision whether or not to implement the risk control. On other occasions, there may be a need to translate the risk reduction into monetary terms and compare it to the cost of the risk reduction. This is referred to as a cost benefit analysis. The safety benefit component of a predicted reduction in injuries and fatalities is translated into financial terms by applying a Value of Statistical Life (VoSL). Currently there is no standard VoSL in the Australian rail industry although various values have historically been published by government departments. In 2010 RISSB published its Railway Level Crossing Incident Costing Model⁴ which utilises a VoSL of \$6,287,873 (2010 figures).

A challenge in cost benefit analysis is that many of the elements, both in estimation of risk and disbenefit, are subject to uncertainties. In determining what control measures are reasonably practicable, particularly where quantitative methods are used, consideration of the sensitivity of factors to test the robustness of the decision making should be undertaken. The ONRSR recommends the use of a precautionary approach in the face of uncertainty, i.e. assume that precautions should be taken unless there is a compelling case not to take them.

The cost of risk control options, individually and together, may be relevant when deciding which of the available options are reasonably practicable, in a number of ways.

If there are a number of options available for eliminating or minimising a risk that achieve the same level of reduction in likelihood or degree of harm, a duty holder may choose to apply a number of the least costly options. Cheaper, available and suitable options may be used instead of a costlier option that may further minimise the risk or severity of harm, where the cost of the costlier option is grossly disproportionate⁵ to the additional risk reduction it affords.

Choosing a low-cost option that provides less protection simply because it is cheaper is unlikely to ensure safety SFAIRP.

Capacity to pay is not relevant

The question of what is reasonably practicable is to be determined objectively, and not by reference to the duty holder's capacity to pay or other particular circumstances. A duty holder cannot expose people to a lower level of protection simply because it is in a lesser financial position than another duty holder.

If a particular duty holder cannot afford to implement a reasonably practicable risk control, the duty holder should not engage in the activity that gives rise to that hazard or risk.

6. Continuous improvement

An objective of the RSNL is to provide for continuous improvement of the safe carrying out of railway operations. The decisions on what is required to ensure safety SFAIRP should be reviewed when new risk controls become available or costs change to determine whether additional measures are reasonably practicable. Similarly, the actual or the understood likelihood or consequence of an event may change which would require previous decisions

⁴ <http://www.rissb.com.au/safety/railway-level-crossings/tools-and-guidance/>

⁵ At Law, there is no precise 'gross disproportion factor' In making a judgement on gross disproportionality, particular attention is paid to the degree of uncertainty in the assessment of costs and safety benefits, and the range of potential safety consequences. For the purposes of this guideline, it is suggested that the evidence at the Sizewell B Public Inquiry in the UK provides a starting point. Although this evidence was produced some time ago, the ONRSR is not aware of subsequent legal proceedings or public inquiries in Australia or the UK that have countered these views or provided alternatives. In this evidence it has been suggested a gross disproportion factor of up to 3 for workers was applied. For risks to the public, it was suggested that the factor would depend on the level of risk, and where the risks were low (consequence and likelihood) a factor of about 2 was suggested, whereas for higher risks the factor should be about 10. There is no guarantee that a court would adopt the above suggested gross disproportion factors.

to be reviewed. For example, if a new failure mode for an asset is discovered, controls may need to be enhanced to ensure safety SFAIRP.

As railway assets age, newer assets can be developed which more effectively manage the risk associated with the asset. For example, newer passenger rolling stock will typically have traction interlocking on its doors which will prevent the traction system from operating when one or more doors are open. By comparison, older rolling stock may not originally have this control but retrofit may be reasonably practicable.

A duty holder is obliged to implement modern practices where it is reasonably practicable to do so. Existing practices and assets should be compared against relevant modern standards, including those that were not in force when they were commissioned. This should be done across the life-cycle of the asset. Notwithstanding, the ONRSR recognises that older assets may still meet SFAIRP requirements at higher risks than newer ones.

The future planned lifetime of an asset may be a factor in determining whether its operation is still reasonably practicable. When assets age, there may be no obvious transition from 'safe' to 'not safe'. In such cases specific monitoring and review of asset condition may be a reasonably practicable control. Further guidance on this subject can be found in the ONRSR [Asset Management Guideline](#).

Proposed limits on remaining operating life of the asset may be taken into consideration in determining control measures required to ensure safety SFAIRP, but this cannot be used to justify an asset operating at a level incompatible with the risk criteria stated in the duty holder's SMS. A case not to make an improvement based largely on limited future lifetime would only be acceptable where the maximum extent of the future operational life is irrevocably fixed. In cases where the planned lifetime is not irrevocably fixed, an appropriate period of typical life extension should be selected having regard to all relevant matters (which may include industry norms) for the purposes of determining what is reasonably practicable.

7. ALARP vs. SFAIRP

Sometimes the term As Low As Reasonably Practicable (ALARP) is used by the rail industry. Both ALARP and SFAIRP have at their core the concept of 'reasonably practicable'. The ALARP framework was originally developed to assist those with legal obligations for safety to comply with these obligations. The ONRSR considers that those duties to ensure safety SFAIRP and the ALARP framework generally both call for the same tests to be applied. In legal proceedings, the particular term cited in the relevant legislation will be used. While some legislation in Australia cites the term ALARP⁶, in the case of the RSNL the term cited is SFAIRP.

Duty holders should be cautious of using ALARP guidance documents produced by other jurisdictions or for legal frameworks other than the RSNL. Any such guidance should be used only if it supports compliance with the RSNL.

A common feature of ALARP guidance is the so-called 'ALARP triangle'⁷. The triangle, referred to as the tolerability of risk framework, divides levels of risk into three regions – the unacceptable region, the ALARP or tolerability region and the broadly acceptable region (see Figure 1). Each region then has a corresponding set of requirements for a duty holder. Defining such regions is a way of establishing risk criteria and may be helpful for organisational priority setting based on risk.

⁶ For example, the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2009.

⁷ The 1987 Public Inquiry into the proposed Sizewell B nuclear power station in the UK recommended 'guidelines on the tolerable levels of individual and social risk to workers and the public from nuclear power stations'. The Health and Safety Executive subsequently published a discussion document in 1988 titled 'The Tolerability of Risk from Nuclear Power Stations' which described the ALARP principle.

Duty holders are encouraged to establish risk criteria⁸ for the evaluation of safety risk; in particular the ONRSR considers it good practice to establish an upper limit of risk beyond which a duty holder will not accept the risk unless reduced (for major projects the ONRSR specifies this as one of several minimum expectations – see the [Major Projects Guideline](#)). However, it is important to note that risk criteria must not be set such that they diminish obligations set by the RSNL. Specifically, should a duty holder define a ‘broadly acceptable’ region in its criteria, the ONRSR will still expect the duty holder to eliminate or minimise risks assessed as being in this region SFAIRP – in other words a risk cannot be excluded from the requirements of the RSNL merely because it is assessed as being small.

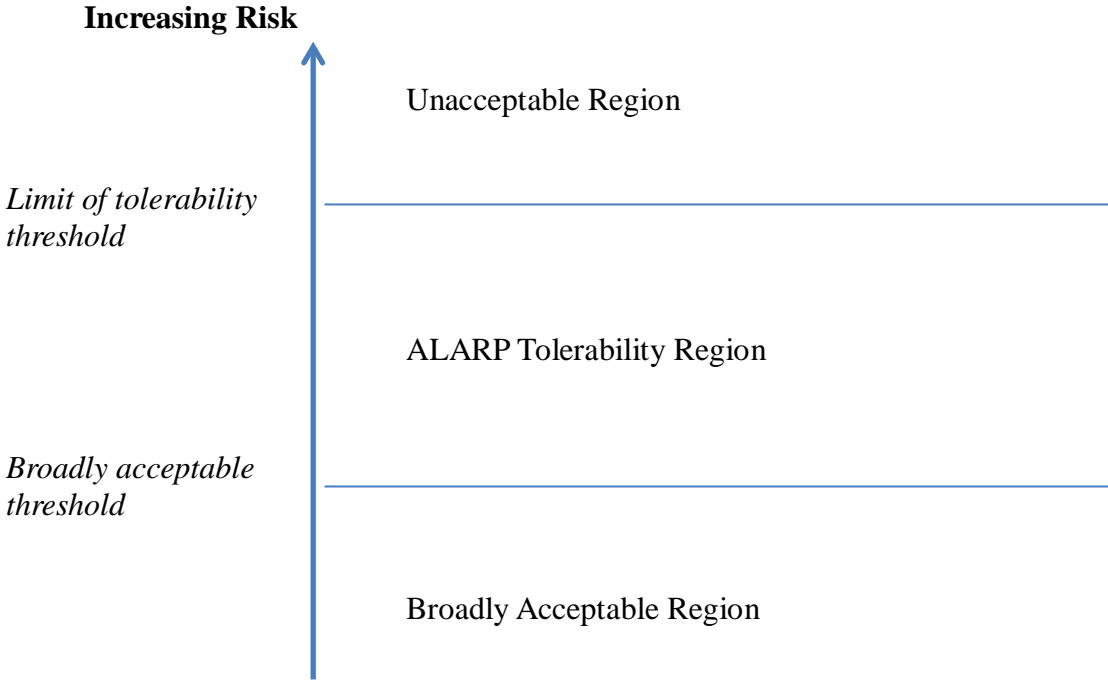


Figure 1: Simplification and Adaptation of the ALARP framework

8.Reverse SFAIRP

Duty holders may on occasion wish to remove a risk control that they believe to be no longer reasonably practicable. The ONRSR acknowledges there may be very specific, albeit limited, occasions when it may be shown that an existing control is no longer necessary to ensure safety SFAIRP. These include:

- > where the cost of maintaining the control has substantially increased (however in this instance, it may be reasonably practicable to introduce a new control rather than accept an increase in residual risk);
- > the risk reduction provided by the control has reduced due to the risk reduction achieved by other controls;
- > where a risk control interacts adversely with another risk control; or

⁸ Risk criteria should be developed to match the nature of the risk being evaluated. AS 31010 (Risk management – Risk assessment techniques) provides guidance on developing risk criteria.

- > it can be shown that the introduction of the control was not necessary to ensure safety SFAIRP in the first place.
- > Any argument to remove risk controls should be subject to comprehensive risk assessment undertaken before the removal has taken place.
- > Examples of circumstances where ONRSR would not consider it appropriate to remove a control include:
 - > where the residual risk is no longer eliminated or minimised SFAIRP;
 - > transferring resources from areas, activities or exposed groups with lower risk to those experiencing higher risk. The RSNL requires every risk to be eliminated or minimised SFAIRP, and it is not acceptable to do less than this simply because the risk is even higher elsewhere;
 - > where one duty holder (e.g. the rolling stock operator) relaxes risk controls at the expense of another (e.g. the rail infrastructure manager) without documented risk transfer through an appropriate instrument (e.g. an Interface Agreement);
 - > where changes result in a level of risk to the public, passengers or workforce which the duty holder's SMS rates as intolerable; or
 - > where a control is removed to reduce operational costs or increase operating profit without consideration of whether the control is reasonably practicable.

These are just some examples. There may be other situations where it is inappropriate to remove a control.

Appendix A - The operation of reasonably practicable – an example

ABC Rail Pty Ltd operates a high-speed, overnight freight transport service. Each night the freight must be loaded and unloaded at different terminals. The type of freight varies and the weight and configuration must be re-checked with each load. This is time-consuming and the loading equipment is somewhat unreliable and requires skilled workers to manually calculate the weight in some instances.

In this case, the rail transport operator:

- > consults its workers to assist in identifying the hazards and risks associated with the work, which are the personal injuries from loading and unloading unknown volumes of freight.
- > identifies the potential risk to safety of the railway operations, which are personal injuries from a derailment caused by an imbalanced load. The risk is assessed, taking into account previous incident history and the reliability of the current controls, and this risk is considered to be high.
- > considered stopping the activity to fully eliminate the risk. This was not considered a realistic option as the loading, unloading and transportation of freight is integral to the rail transport operator's core business of freight delivery.
- > determines the legal requirements under the RSNL and National Regulations (e.g. for training and instruction, and engineering control requirements) and obtains information from relevant standards and machinery suppliers about the various mechanical and other ways of minimising the likelihood or consequence of an incident.
- > the option of automating the loading process with newer computer-based technology that does not require manually calculated load weights and limits, allows loaders and unloaders to stay a safer distance away from the loading/ unloading operation and includes a cut-off to stop the operation if a worker comes too close to the moving operation is considered. Another option considered includes retrofitting scales to identify the weight of a load and the combined weight with the rolling stock.
- > identifies which of the options are available and suitable for use in the circumstances and the degree to which they will individually or together eliminate or if that is not possible minimise the risks SFAIRP.
- > considers whether particular risk controls may introduce other hazards or increase other risks.

Having identified what can reasonably be done, weighed up the likelihood and consequence, how far a control may minimise the risk and calculated the costs and benefits of the options available, ABC Rail decides to purchase the new computer-based technology computerised equipment.

Although the new equipment is more expensive than retrofitting the existing system, it provides significant safety benefits and also increases efficiency. Given the cost of the option compared with the risk reduction predicted from the new system, the costs are considered unlikely to be grossly disproportionate to the risk.

ABC Rail installs the new equipment according to the manufacturer's instructions and provides its workers with relevant training on the safe operation and maintenance. The effectiveness of the risk controls are reviewed after one month in consultation with workers.