

Scalability of Fatigue Risk Management Program Requirements

The extent of detail and the degree of risk controls required for the various elements of the fatigue risk management program can be appropriately scaled commensurate with the rail transport operator's assessment of the fatigue-related risks associated with its railway operations.

Below is an example of how a small operator may demonstrate compliance with the requirements of regulation 29 of the National Regulations. It should be noted that the example provides only one means by which the operator may comply, and other alternatives may exist.

When considering fatigue risk management, rail transport operators should be aware they may have obligations under other pieces of legislation, such as work health and safety laws and industrial relations legislation. Rail transport operators may obtain their own independent legal advice or contact the Regulator for advice if clarification is required.

In developing a fatigue risk management program, as with any aspect of the safety management system, rail transport operators should consider their own individual circumstances and tailor their policies, procedures and risk controls to their specific operational environments.

Example Rail Transport Operator Profile

A small operator with relatively few rail safety tasks, operating weekends and public holidays from 10am – 6pm, a single site/office and route, low number of rail safety workers and a flat management structure. Once a year, during school holidays, the railway operates for a full week; including the weekends, this makes for operations occurring for 9 consecutive days. Many of the workers are volunteers, with some casual paid staff.

The operators must manage any risks to safety, so far as is reasonably practicable, and implement controls commensurate to the level of risk. All aspects must be documented in accordance with the safety management system. What follows is a discussion of how the operator may demonstrate compliance with regulation 29 of the National Regulations in establishing or varying its fatigue risk management program.

Considerations for Preparing or Varying a Fatigue Risk Management Program

A rail transport operator's fatigue risk management program must establish and maintain documented procedures to manage, so far as is reasonably practicable, fatigue-related risks. When preparing a fatigue risk management program, a rail transport operator must take into account, and assess, any fatigue-related risks to safety arising from the factors identified in regulation 29(1) of the National Regulations.

The Safety Manager assesses all risks to safety through risk management processes and then considers each element of regulation 29(1) of the National Regulations to ensure that all fatigue-related risks are captured. The Safety Manager determines that some factors are not relevant to operations. For example, the requirements of regulation 29(1)(b) to assess the risks associated with lift-up and lay-back arrangements (as defined in the law) are not applicable, as such work scheduling procedures are not being used. Where a factor is assessed as not relevant, a record of this assessment is kept.

The Safety Manager conducts the assessment in consultation with all relevant workers to ensure that there is broad input and that risks are not overlooked. The Safety Manager's consideration of some of the factors of regulation 29(1) of the National Regulations that are determined as relevant are outlined below:

- (a) *scheduling of work and non-work periods, including time-on-task and rest opportunities in shifts and the total period of time in which work is being carried out:*

Even though operations occur during relatively standard business hours and extended hours of work are not employed, the Safety Manager assesses that extended periods of time-on-task may present some risks. The Safety Manager ensures that the fatigue risk management program includes a work scheduling practice regarding the requirement for scheduling of short rest breaks and a meal break within shifts in order to ensure that workers do not have to maintain sustained attention on a task for longer than 4 hours without a break.

The Safety Manager keeps in mind that some workers arrive early to prepare for the day's operations and that, for those workers, it may be a 10-hour day. The Safety Manager includes a provision in the fatigue risk management program that this be taken into account and that adequate rest periods are provided within such a shift.

- (b) *call-in, on-call and lift-up and lay-back arrangements and extended hours of work, including overtime:*

Workers are sometimes unable to make their rostered shifts for a variety of reasons. The operator employs on-call arrangements to provide for adequate relief, calling in those workers in the local area to work to fill any vacant positions at short notice.

The Safety Manager assesses that, as these workers would not be planning to work, that they may not be adequately rested. The Safety Manager writes a policy to include in the fatigue risk management program to address on-call work, and this is made available to all workers. The policy includes that workers should be provided as much notice as possible, are not obligated to work when called, and should take into account their own fitness to work and whether they are adequately rested before agreeing to the shift. The policy includes that fill-in workers should not be called in for both days in a weekend if it can be avoided.

- (d) *physiological factors arising out of work practices affecting rail safety workers, such as the effect on worker alertness and recovery of the time when work is undertaken, the length and frequency of breaks, commuting time, circadian effects, extended wakefulness, chronic sleep loss effects, and sleep inertia:*

Working relatively standard, business hours, circadian effects present few risks and the Safety Manager notes this assessment.

Commuting time, on the other hand, may present risks for this operator. Many of the volunteers travel substantial distances. The time spent travelling to and from work may contribute to fatigue, particularly if the worker is driving.

Additionally commuting time may not provide rest in the same way as time spent at home and may decrease the amount of sleep opportunity. Due to the size of the organisation and the management structure, the Safety Manager speaks directly with those workers who have a long commute and highlights the associated risks, keeping a record of the meeting.

The discussion facilitates a better understanding of the risks and some workers choose to work a slightly shorter day to compensate for the long drive. Others choose to only work one day of the weekend or seek their own accommodation between shifts.

When considering on-call practice, the Safety Manager assesses that sleep inertia may present a risk. This is the physiological state characterised by a decline in motor dexterity and a subjective feeling of grogginess immediately following an abrupt awakening. To avoid the risks of sleep inertia, the Safety Manager includes in the on-call policy that a minimum of 1 hours notice be provided to workers who are called in; this allows for adequate time to 'wake up' and travel to work.

(e) *the kinds of rail safety work being carried out, including:*

- (i) *work that requires significant physical exertion or high cognitive task demand; and*
- (ii) *the degree of monotony or boredom or low cognitive task demand of the work;*

Most of the rail safety tasks undertaken are not highly strenuous. However, there may be a risk of monotony and the Safety Manager assesses that there is a need for some additional rostering rules in the fatigue risk management program to provide more frequent breaks when those tasks are being undertaken.

Additionally, the Safety Manager includes a procedure for the person supervising operations to actively check on and radio-in to those workers regularly to ensure that they are alert.

(f) *the variations in shifts and rest periods that may be required by different rail safety work requirements, including different routes, crew-call practices and predictability of working hours;*

As assessed under part (a), (b) and (d), the Safety Manager includes additional provisions in the fatigue risk management program for those workers who have been called in, those working longer hours and those working monotonous tasks.

(g) *fatigue risks arising from any one-off or occasional circumstances in which rail safety work may be required to be carried out, including in emergencies or under degraded or abnormal conditions, subject to the working hours being dependent on the rail safety workers' indication of their fitness to continue;*

Once every year, the railway operates for nine consecutive days. This is a circumstance that is foreseeable and should be planned for. For this time, the Safety Manager brings on extra staff to ensure that individual workers are not working for more than 6 days in a sequence. The workers are provided with their rosters well in advance to allow them to plan for the period.

Emergency situations are rare, but the Safety Manager considers the risks of substantial problems arising and workers staying on for long shifts in degraded conditions. The Safety Manager considers what steps could be taken in such an event.

The Safety Manager includes in the emergency management plan that, if long shifts have resulted, workers are provided transport home or provided overnight accommodation at the operator's expense.

(h) *relevant developments in research related to fatigue and any technology that may be applied to manage work-related fatigue.*

Available research and guidance published by the National Rail Safety Regulator and the Rail Industry Safety and Standards Board is reviewed to better understand fatigue and its effects.

The Safety Manager also reviews some of the relevant technologies available to assist with fatigue risk management, such as vigilance devices and the use of bio-mathematical models to assist with rostering. For existing operations, given the work procedures and controls already in place, it is considered that the fatigue-related risks are not substantial enough to warrant employing these technologies.

The Safety Manager continually reviews the options and research available and their relevance to the operations.

The Safety Manager understands that any fatigue-related risks to safety must be assessed,

regardless of whether they are listed under regulation 29(1) of the National Regulations or not. The Safety Manager considers that secondary employment presents a risk. Some of the volunteers have full-time employment elsewhere, one with the major state passenger rail company and others in non-rail-related employment.

The Safety Manager considers the situation where a worker completes a full shift, commutes overnight and then works on the railway to be likely. The Safety Manager acknowledges that there is a limit to what can be done and that worker education will be of importance to help with understanding the risks.

However, to manage this risk, the Safety Manager consults with the workforce and agreement is reached that workers with any substantial secondary employment will provide their rosters for the fortnight ahead. The Safety Manager documents this agreement in a policy and ensures that work scheduling practices take into account the other employment so that unreasonable hours of work are not being scheduled.

Managing Risks Associated with Hours of Work

The fatigue risk management program must include specified work scheduling practices and procedures that provide for safe hours of work and safe periods of time between shifts (regulation 29(2)(a) and (b) of the National Regulations). When considering whether hours of work and periods of time between shifts are 'safe', rail transport operators must be satisfied that the effect of implementing those hours or periods is sufficient to manage risks arising from fatigue so far as is reasonably practicable.

Having assessed the fatigue-related risks and taking into account fatigue research on acceptable limits, the Safety Manager documents some parameters within which rostering should occur.

Some of the principles are:

- Length of shift must not exceed 10 hours
- In the event of an emergency, the length of shift must not exceed 12 hours, assuming the rail safety worker has indicated their fitness to continue, and transport home or accommodation after the shift will be provided.
- A minimum 10-minute break must be provided at least every 4 hours; those with monotonous

tasks and those brought in through on-call arrangements at least every 3 hours.

- There should be at least a 12 hour interval between shifts regardless of whether work was done on the railway or with another employer.
- No more than 7 consecutive days should be worked regardless of whether work was done on the railway or with another employer; 5 days if night work (work between 10pm and 6am) was undertaken in that sequence of shifts.
- At least 36 hours off work should be provided between a sequence of shifts.
- No worker will be called in for two consecutive shifts.

Rostering staff are instructed to take into account other employment and individual preferences, particularly accounting for those with longer commutes who have nominated certain arrangements.

Work scheduling practices are developed to provide parameters to support scheduling or rostering. For example, where the work scheduling practice states that a shift must not exceed 10 hours, a worker may only be scheduled for 8 hours to retain some flexibility in the event of unforeseen delays.

The once a year circumstance when operations occur on 9 consecutive days has its own set of rostering principles and is planned well in advance.

What is planned or rostered may vary for a variety of reasons during the course of operations. The Safety Manager understands that shift-swapping and on-call working can impact fatigue-related risk. Those persons supervising operations are made aware of the risks and to monitor this, a process is set up for rostering staff to monitor and review changes to rosters and analyse how actual hours worked compare with what is planned.

The Safety Manager continually reviews the results on the planned vs. actual analysis to ensure that adequate relief is available, that any breaches are identified and resultant risks managed and that the fatigue risk management program is continuously improved.

Education and Information

The fatigue risk management program must include the provision of appropriate education and information in relation to the identification and management of fatigue risks that are relevant to the rail safety work being undertaken (regulation 29(2)(c) of the National Regulations).

The organisation develops a 'fatigue policy' to outline its objectives regarding fatigue management. It includes the provision for workers who self-identify that they are fatigued to be able to speak up without repercussion. The fatigue policy includes details on how the organisation will manage on-call working and take into account secondary employment.

The Safety Manager ensures that an education briefing occurs every six months and that the fatigue policy is provided to all employees. The briefing aims to prepare workers with the knowledge to prepare for shifts and manage any risks that may arise.

Education and information is made appropriate to the tasks being undertaken and is designed to ensure that workers are made aware of their obligations under the law and, importantly, under the fatigue risk management program, including any processes and procedures relevant to the tasks being undertaken. Topics related to the effects of fatigue on performance, the nature and risks associated with on-call working and the various types of tasks, risks associated with other employment and sleep hygiene are also covered.

Rail safety workers are made aware of the effects of fatigue in order to self-identify their own fatigue and identify fatigue in their co-workers. This knowledge empowers the workers to speak up when they are legitimately fatigued and utilise the provision in the fatigue policy to self-report. The education briefing on fatigue risk management is incorporated with other related issues, including health and fitness and drug and alcohol management.

Staff responsible for rostering are given additional training to ensure that they are fully aware of the fatigue risk management program and the work scheduling practices documented within it. Rostering staff are made aware of resources on good practice fatigue management and have various materials, such as guidance, available to them.

Further information

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