1. Purpose

This procedure defines the requirements for managing fatigue in Seqwater workplaces.

2. Scope

This procedure applies to all Seqwater employees and includes contractors, visitors, clients, apprentices, trainees and volunteers, whilst they are working at or visiting Seqwater sites or property.

3. Definitions

**Fatigue**

Fatigue is mental or physical exhaustion that stops a person from being able to function normally.

**Circadian rhythms**

The internal body clock, the body's natural rhythms that are repeated approximately every 24 hours.

4. Actions

4.1 How does fatigue affect safety?

The safety consequences of fatigue include:

- Decreased alertness
- Slowed reaction time
- Poor hand-eye coordination
- Poor communication
- Higher error rates
- Reduced vigilance
- Reduced decision-making ability
- Poor judgement of performance, especially when assessing risks
- Being easily distracted during complex tasks
- Difficulty responding to emergencies
- Loss of awareness of critical situations
- Inability to remember the sequence of events

4.2 Recognising Fatigue

Some of the signs and symptoms of fatigue include:

- Blurred vision
- Difficulty keeping eyes open
- Head nodding
- Drowsy relaxed feeling
- Irritability
- Not feeling refreshed after sleep (waking tired)
4.3 Causes of fatigue

Fatigue is caused by prolonged periods of physical and/or mental exertion without enough time to rest and recover. Causes of fatigue can result from both features of the work and workplace and from features of a worker’s personal life.

Work related causes

Work-related causes result from:
- Roster design, eg too many consecutive night shifts;
- Aspects of the tasks being undertaken, eg greater workload within standard shifts; and
- Features of the working environment, eg noise or temperature extremes.

Outside of work related causes

Causes of non-work related fatigue include:
- Sleep disruption due to ill family members
- Strenuous activities outside work, such as second jobs
- Sleep disorders
- Inappropriate use of alcohol, prescription and illegal drugs
- Stress associated with financial difficulties or domestic responsibilities.

Roster design

Research has shown that the risk of work-related injuries and illnesses is increased in people working more than 60 hours a week, or working 12 hours or more in a day. Compared with an eight hour shift, accident rates are doubled after 12 hours at work. A 17 per cent increase in accident rates occurs after the fourth day shift. There are also 30 per cent more incidents on the fourth night shift compared with the first.

When determining if roster design is contributing to a fatigue problem consider the following:
- Length of shifts worked;
- Previous hours and days worked - the effects of fatigue are cumulative, workers may have sleep debt due to the length of previous shifts;
- Type of work being performed - pay particular attention to the level of physical and/or mental effort required; and
- Time of the day when the work is being performed - remember that disrupting the body’s circadian rhythms can cause fatigue and affect performance.

The key to managing fatigue successfully is ensuring that workers have sufficient time between shifts. Adults require approximately seven to eight continuous hours of daily sleep.
Workers who consider that roster arrangements are contributing to a fatigue problem should consult with their supervisor or manager.

In 2008, the Queensland government implemented the National Driving Hours Policy. This policy is an example of roster design that has been mandated by government regulation. The Policy as defined by the National Transport Commission does not permit drivers to operate a vehicle for more than 12 hours in any 24 hour period and requires a minimum rest break of 7 hours.

4.4 Managing Fatigue

Fatigue management is a shared responsibility between management and workers as it involves factors both inside and outside of work. Outside of work causes of fatigue need to be addressed by individuals whereas work related causes should be addressed in consultation with the relevant supervisor or manager.

Responsibilities of management:

- Ensure the roster provides for a continuous 7 to 8 hours sleep in each 24 hours;
- Ensure sufficient cover for workers who are on annual or sick leave
- Limit the amount of overtime so that workers do not work longer than 12 hours
- Limit the number of consecutive night shifts required
- Ensure there is a minimum of 12 hours rest between consecutive shifts

Responsibilities of Employees:

- Employees need to ensure they get enough sleep and come to work fresh and alert
- Plan social activities to ensure sufficient sleep before starting work
- Employees must identify instances of fatigue
- Where a fatigue issue exists employees should consult their supervisor / manager

Fatigue and sleep

Sleep is the only effective long-term counter-measure to fatigue. Maintaining sufficient levels of sleep will prevent fatigue. For example, if a person who requires eight hours of sleep only has six hours of sleep, then this person is deprived of two hours of sleep. If this occurs over four consecutive nights, the person will have accumulated an eight hour sleep debt. Sleep debt leads to increased levels of fatigue.

The amount of sleep required by a person varies, with seven to eight hours of daily sleep considered the average for an adult. People who continually get less sleep than is necessary for them will accumulate a sleep debt.
Review work load / commitments

Employees experiencing fatigue that has been attributed to work load or commitments should consult with their supervisor or manager to review workloads / task allocation. The possibility of task rotation could be investigated where practicable.

Breaks

Time spent away from the work environment allows workers to recover from fatigue and improve performance, vigilance, safety and efficiency. For this reason breaks should be taken during work shifts, and should not be traded for an early finish time.

Consider the following when deciding on the length and frequency of breaks within a shift:

- Type of work being performed - the greater the physical and/or mental effort required, the longer the total break time required per shift; and
- Length of shifts worked - the longer the shift the longer the total break time required per shift.

Shift Workers

Shift workers as a group tend to get significantly less sleep than those who work equivalent hours that do not intrude on the typical sleep period (11pm - 7am). For night shift workers, sleep during the day is usually of poor quality due to circadian disruptions and environmental factors such as daylight, traffic and household noise.

It is important for shift workers to get as close to the average amount of required daily sleep (or rest in bed) as possible. The quality of day sleep will not be the same as night sleep. Day sleep is lighter than night sleep, and is more likely to be disturbed by noise. Planning is required to ensure that conditions for day sleep are as favourable as possible. The following tips may help you avoid unwanted disruptions while trying to sleep during the day:

- Blinds or curtains with backing will reduce the light level in bedrooms during the day, consider using heavy curtains and sound insulation on doors and windows to also reduce noise levels
- Cool conditions can help in getting to sleep and staying asleep
- Inform relatives and friends of your work schedule and sleep times to avoid unwanted disruptions
- Use an answering machine, or turn the phone down to help minimise disturbances
- Develop ways of ‘unwinding’ after the afternoon or night shift, e.g. take a walk or watch some television
- Take a shower or a relaxing bath before going to bed
- Go through all of the normal rituals of going to bed as you would before a normal sleeping night
- Avoid having a television in the bedroom
- Don’t get upset if you can’t sleep straight away. Reading the paper or listening to music may help, but remember that rest in itself is important
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- Be cautious with the use of sleeping tablets, which may appear useful in the short-term, but can actually be quite harmful to health in the long-term.

Tips for eating and drinking

Food and drink consumed before going to bed can affect sleep quality. This is because the digestive system is controlled by circadian rhythms and has its own regular rhythm of activity and rest. Digestion slows down at night irrespective of bodily activity. The timing of meals and the quality of foods eaten can affect sleep, and may lead to digestive complaints such as heartburn, constipation and indigestion. As a result, heavy or fatty food eaten at night is difficult to digest.

Shift workers should be aware of the following tips:

When to eat and drink:
- Wherever possible, keep to daytime eating patterns.
- When working a night shift try having two meals at regular times and a light meal in the middle of the night shift.
- Consider having the largest daily meal during the day.
- Do not have a big meal or drink too much liquid before sleeping.
- Eat a meal before 1am as the effects of digesting a meal can decrease alertness in the second part of the night shift. It is better to eat before becoming fatigued at night.

What to eat and drink:
- Alcohol lowers the quality of sleep and overloads the bladder. It is recommended that alcohol is not consumed in the last few hours prior to sleeping.
- Avoid drinks which contain caffeine (such as tea, coffee or cola) in the last few hours prior to sleeping.
- Eat light, healthy food that is easy to digest.

Driving

Driving while tired is a major killer on the roads. Fatigue slows your reaction time and affects your scanning ability and information processing skills. Workers should be aware of the effects of fatigue when driving to or from work. Some precautions include:
- Avoid driving when you are tired.
- Share the drive with other people.
- Try not to drive in the hours when you would ordinarily be asleep (especially midnight to dawn).

Commuting

Excessive hours spent travelling to and from work can extend the effective length of a shift, reduce the time available for sleep and recovery between shifts, and may have significant effects on fatigue levels. When combined with work-related fatigue, driving to and from work can be hazardous.
5. Responsibilities

- The Workplace Health and Safety Officer is responsible for the maintenance / ownership of this procedure.
- It is the responsibility of all staff to identify fatigue and seek appropriate solutions.

6. Associated Documents


- Department of Employment and Industrial Relations, Queensland, Workplace Health and Safety. Fatigue.  

- Workplace Health and Safety Act 1995 (LEG-00003)

- National Transport Commission Australia. Safety and Compliance.  

7. Verification

Compliance with this procedure may be verified by internal audit.