



SOUTHERN PORTS

ALBANY BUNBURY ESPERANCE

**FATIGUE MANAGEMENT
PROCEDURE**

DOCUMENT CONTROL

| Version Number | Description | Reviewed by | Approved by | Revision Date | Issue Date |
|----------------|--------------------|----------------|-------------|---------------|------------|
| 01 | New Document | HSE Management | GM HSES | 09/05/2018 | 10/05/2018 |
| 02 | Document Formatted | HSE Management | GM HSES | 16/05/2018 | 16/05/2018 |
| 03 | Appendix D Changed | HSE Management | GM HSES | 18/05/2018 | 18/05/2018 |
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IMPORTANT SUMMARY POINTS

- Fatigue risk assessments ensure fatigue hazards are identified, assessed and controlled.
- A fatigue risk assessments must be completed when:
 - Total hours of work exceed 14 in a single shift;
 - Total hours of work over a 4 week period will exceed an average of 56 per week;
 - Less than 10 hours break is taken between consecutive shifts; and
 - Greater than 1 call-out within a 24 hour period.
- A fatigue risk assessment should be completed for all shift rosters.
- Calculation of working hours must include commute time to and from work.
- Calculation of working hours must include on call periods.
- General Manager approval is required for all work exceeding 14 hours.
- All personnel are required to complete fatigue awareness training periodically.
- All personnel have the responsibility to identify and manage their own fatigue levels.
- All personnel have the authority to stop work if they believe they (or others) are fatigued.

1. PURPOSE

Southern Ports (SP) is committed to the health and safety of all people at all workplaces. The purpose of this procedure is to establish a systematic process to identify and manage work health and safety (WHS) risks associated with fatigue for all SP work places and work activities.

2. SCOPE

This procedure applies to all SP personnel (employees, contractors and visitors).

3. ROLES AND RESPONSIBILITIES

| Role | Responsibilities |
|---|---|
| Management | <ul style="list-style-type: none"> • Utilise a risk assessment process to identify and manage any risks associated with fatigue within their area of responsibility. • Consult with personnel during the identification and management of risks associated with fatigue. • Establish mechanisms to monitor and review controls implemented to manage fatigue within their area of responsibility. • Develop a plan for their area of responsibility to manage fatigue during an emergency. • Monitor fatigue levels of personnel within their area of responsibility. • Ensure personnel are not placing themselves at risk of injury as result of their levels of fatigue. |
| HSES Team | <ul style="list-style-type: none"> • Support Management with the risk assessment process to identify and manage fatigue related risks. • Support Management in developing a plan to manage fatigue related risks during an emergency. • Provide tools for managing the identification of fatigue risk factors. • Provide tools to support individuals identify their current fatigue levels. • Undertake activities to support personnel in identifying and managing non-work related fatigue risk factors. |
| Personnel (includes Contractors and Visitors) | <ul style="list-style-type: none"> • Support Management to identify fatigue risk factors and appropriate controls to manage these risks. • Take responsibility for the management of their own fatigue levels, ensuring they turn up fit for work in a state that enables them to conduct their work in a safe manner. • Notify Management if they believe their ability to safety undertake their duty is impaired due to fatigue. |

4. PROCEDURE

4.1. What is Fatigue?

Fatigue is a state of mental and/or physical exhaustion which reduces a person's ability to perform work safely and effectively. It can occur because of prolonged mental or physical activity, sleep loss and/or disruption of the internal body clock. Fatigue can be caused by factors which may be work related, non-work related or a combination of both and can accumulate over time.

Table 1 provides a summary of common causes of fatigue that may need to be considered during the management of risks associated with fatigue.

Table 1: Common causes of fatigue

| General causes | Work related causes | Non-work related causes |
|--|--|---|
| Inadequate amounts of restorative sleep (less than 7-8 hours). | Poor roster design. | Family responsibilities, including sleep disruptions from young babies or ill family members. |
| Long periods of being awake (more than 17 hours). | Extended hours of work and call-out requirements. | Social, community and sporting obligations. Secondary employment. |
| Sustained mental or physical effort. | Aspect of tasks e.g. greater workload within a standard shift resulting in sustained mental and physical effort, and large amounts of driving. | Inappropriate use of alcohol, medication or illicit drugs. |
| Disruption to internal biological clock. | Inadequate rest breaks or poor roster design (varies with task). | Stress from financial difficulties or personal relationships. |
| Health and emotional issues (e.g. psychosocial). | Work environment (noise and temperature extremes), conflict, uncertainty, change. | Physiological e.g. age, medical or mental health conditions, sleeping disorders |

4.2. What are the Risks?

Fatigue can adversely affect safety at the workplace. Fatigue reduces alertness, which may lead to errors and an increase in incidents and injuries. As fatigue levels rise, there are corresponding physiological, behavioural and emotional changes that may impact on the ability of a person to safely undertake work. The following signs or symptoms may indicate a person is affected by fatigue:

- excessive yawning or falling asleep at work;
- short-term memory problems and an inability to concentrate;
- noticeably reduced capacity to engage in effective interpersonal communication;
- impaired decision-making and judgment;
- reduced hand-eye coordination or slow reflexes;
- other changes in behaviour, for example repeatedly arriving late for work; and

- increased rates of unplanned absence.

A fatigued person may also experience symptoms not obvious to others including:

- feeling drowsy;
- headaches;
- dizziness;
- difficulty concentrating;
- blurred vision or impaired visual perception; and
- the need for extended sleep during days off work.

4.3. Fatigue Risk Assessment

Use the Risk Management Framework to identify, assess and control fatigue related hazards and risks when:

- Total hours of work exceed 14 in a single shift;
- Total hours of work over a 4 week period will exceed an average of 56 per week;
- Less than 10 hours break is taken between consecutive shifts; and
- Greater than 1 call-out within a 24 hour period.

When undertaking the risk assessment, it is important for Management to ensure relevant personnel are consulted at each step of the process. This encourages everyone to work together to identify fatigue risk factors and implement effective control measures. Consultation also helps to raise awareness about the risks associated with fatigue. An extract from the *Guide for Managing the Risk of Fatigue at Work (Safe Work Australia)* is included in Appendix A for further information contributing factors, risk levels and risk controls that should be considered in the fatigue risk assessment. The HSES team shall provide support to Management completing fatigue risk assessments upon request. Template fatigue risk assessment tools has been provided in Appendix B, Appendix C and Appendix D.

The fatigue risk assessment process involves the following steps:

4.3.1. Fatigue Risk Factors

Common factors that may contribute to fatigue include:

- Work schedules which limit the time personnel can physically and mentally recover from work. This may include personnel who undertake shift work, night work, work extended hours or are not able to take regular breaks;
- Job demands, particularly work that requires extended periods of work that is physically or mentally demanding;
- Sleep, including the length of sleep time, the quality of sleep and the time since sleep;
- Environmental conditions, such as exposure to heat, cold, vibration or noise, can make personnel tire quicker and may impair performance; and
- Non-work related factors, such as a person's lifestyle, family responsibilities or health may all increase the risk of fatigue.

Methods that management may utilise to identify whether there are any of the above risk factors affecting their personnel include:

- consulting with personnel;
- examining work practices and systems of work;

- examining human resource records and data such as timesheets, TOIL balances and overtime payments;
- incident data and the findings of incident investigations; and
- seeking advice and information from the HSES Team or other relevant departments.

4.3.2. Inherent Risk Assessment

Once Management has identified the risk factors which may cause fatigue, an assessment of the risk is undertaken to consider:

- where, which and how many personnel are likely to be at risk of becoming fatigued;
- how often fatigue is likely to occur;
- the degree of harm which may result from fatigue;
- whether existing control measures are effective;
- what action should be taken to control the risk of fatigue; and
- how urgently action to control the risk needs to be taken.

When assessing risks, contributors to fatigue should not be considered in isolation. For example, job demands, hours of work and environmental conditions may all increase the risk of fatigue in the workplace. The risks of injury from fatigue may increase if personnel work long daily hours in a physically or mentally demanding job.

4.3.3. Risk Controls

The best way to control the health and safety risks arising from fatigue is to eliminate the factors identified as causing fatigue at the source. If elimination is not reasonably practicable, the risks must be minimised. The determination of the most effective controls to manage the risks associated with fatigue should always be identified in consultation with personnel where possible.

Examples of control measures for fatigue risks which can be built into the work scheduling may include:

- designing working hours and rosters to allow for good sleep opportunity and enough recovery time between work days or shifts for travelling, eating, washing and sleeping;
- ensuring personnel have and take adequate and regular breaks to rest, eat and rehydrate;
- avoiding scheduling high-risk work during low body clock periods (i.e. between 2am and 6am);
- establishing plans to manage workload change caused by machinery breakdowns or planned and unplanned absences;
- managing overtime, shift swapping and on-call duties;
- implementing processes to manage accrued leave balances and requests for leave;
- considering future rosters and schedules when approving request for leave or shift swaps, and ensuring leave is reflected in rosters; and
- considering alternative options to face-to-face meetings, for example teleconferencing or video conferencing so personnel are not required to spend time travelling to meetings.

4.3.4. Residual Risk Assessment

Re-assess whether the risks of injury from fatigue are adequately controlled. If a fatigue risk assessment identifies that fatigue is a High or Extreme residual risk for either a workgroup (shift

system) or an individual consult the People and Organisation Team to determined appropriate action(s). The General Manager’s approval is required for all work exceeding 16 hours.

4.3.5. Monitor and Review Control Measures

Review risk control measures to ensure they are working as planned.

4.3.6. Work Scheduling

Table 2 provides a framework for Management to plan and allocate working hours.

Table 2: Working hour’s framework

| Working Hours | Expectations |
|---|--|
| Up to 14 hours | <ul style="list-style-type: none"> Personnel to assesses their fitness for work Management approval for shift rosters / task allocation |
| 14 to 16 hours (only in emergencies where safety of others or property is threatened) | <ul style="list-style-type: none"> Personnel and Management to complete a formal risk assessment General Manager approval for any extension of work beyond 14 hours Prior to travelling home, Management and personnel to re-assess fitness. Transportation home may be provided. |
| More than 16 hours (Only in extreme emergencies where safety of others or property is threatened) | <ul style="list-style-type: none"> It is recommended that no personnel be permitted to work more than 16 hours in a 24-hour period. General Manager approval for any extension of work beyond 16 hours |
| Short Breaks | <ul style="list-style-type: none"> In general continuous periods of active work should not exceed 5 hours without a scheduled break. |
| Total hours of work | <ul style="list-style-type: none"> It is recommended that the total hours worked by a person should not exceed an average of 56 hours per week over a four-week period. Work arrangements and rosters should be monitored and appropriate controls developed to ensure that persons are not working excessive hours in any seven-day period. |
| Break between consecutive shifts | <ul style="list-style-type: none"> If personnel are required to return to work prior to completion of a 10-hour break between shifts, a formal risk assessment should be completed. |

Working hours shall be calculated on the basis of total hours worked ‘door to door’ (including breaks). This means that working hours are counted from the moment a person leaves their accommodation (primary place of residence or hotel) to the moment they return. This also applies if a person is working from their accommodation (i.e. working from home or on-call). This framework is provided as a guide only, the unique circumstances of each individual situation will need to be considered.

4.3.7. Shift Work and Rosters

Consideration should be given to implementing additional specific control measures when planning work schedules and rosters for specific work arrangements, including shift and night work, seasonal, emergencies and on-call arrangements. These may include:

- structuring shifts and designing work plans so work demands are highest towards the middle of the shift and decrease towards the end;
- avoiding morning shifts starting before 5am where possible;
- avoiding split shifts or if there is no alternative to split shifts consider their timing, for instance whether they are likely to disrupt sleep;
- setting shift rosters ahead of time and avoiding last-minute changes, to allow personnel to plan leisure time;
- allocating shift and night personnel consecutive days off to allow for at least two full nights' sleep;
- overlapping consecutive shifts to allow enough time for communication at shift handovers;
- minimising overtime allocation after afternoon or night shifts;
- keeping sequential night shifts to a minimum. If sequential night shifts do need to occur, it is best to group them together in the overall roster cycle, and use a forward rotational shift cycle (mornings – afternoons – evenings – mornings);
- developing plans to manage the risks associated with fatigue during an emergency; and
- providing information to shift personnel including tips for prevention of fatigue.

Additional guidance on shift design is available from the Guide for Managing the Risk of Fatigue at Work (Safe Work Australia). Template fatigue risk assessment tools has been provided in Appendix B and Appendix C.

4.3.8. Job Demands

Control measures to prevent or minimise the risk of fatigue associated with job demands can include:

- ensuring fit-for-purpose plant, machinery and equipment is used at the workplace (e.g. ergonomic furniture, lifting equipment);
- redesigning the job to limit periods of excessive mental or physical demands;
- considering job rotation to limit a build-up of mental and physical fatigue;
- developing contingency plans for potential situations where personnel may have to unexpectedly work longer hours, more shifts or a long sequence of shifts; and
- planning for expected changes in work flow including anticipated peaks and troughs throughout the year.

4.3.9. Environmental Conditions

Control measures to prevent or minimise the risk of fatigue associated with environment conditions can include:

- avoid working during periods of extreme temperature or minimise exposure time through job rotation;
- provide a cool area where personnel can take a rest break and rehydrate in hot work environments;
- consider installing ventilation and mechanical cooling devices in hot, small and enclosed spaces;
- provide adequate facilities for rest and meal breaks;
- install adjustable, low-vibration seats in machinery and vehicles and provide low vibration hand held equipment;

- consider the provision of Personal Project Equipment (PPE) such as cool vests; and
- provide and maintain a workplace which is well lit, safe and secure.

4.3.10. Non-Work Related Factors

Personnel have a duty to take reasonable care for their health and safety and this includes enough sleep so they can arrive fit for work. The HSES Team undertake a range of activities to support personnel and manage non-work related factors that may impact on fatigue. These activities include:

- consulting personnel about factors impacting on their personal fatigue levels;
- providing education and awareness to personnel on the risks associated with fatigue, how it relates to their work activities and strategies to manage their personal fatigue risks; and
- establishing health and wellbeing programs to address risk factors associated with fatigue.
- Employee who undertake work outside SP must ensure it does not conflict or adversely affect the performance of their duties, including being able to undertake their duties without an increased risk of fatigue.

4.4. Call-outs

Should a person be required to attend call-outs of a volume or duration that prevents their ability to obtain sufficient rest prior to the next shift (e.g. 10 hours as per section 4.3.6), their Management should discuss with the person whether they require a later commencement time for their next shift to allow sufficient time to rest.

Due consideration should be given by the person requesting the call-out as to the real requirement for the work to be completed prior to the commencement of the next shift. Consideration should be given to whether there is:

- a health or safety risk to people, plant, property or the environment;
- a legislative requirement for the call-out; and
- a risk to workplace/personnel if this work is not undertaken before the following shift.

4.5. Emergencies

The nature of SP business may expose personnel to the effects of emergency situations and as such, Management may be required to plan for the fatigue risks associated with managing these events. SP Emergency Management Plans provide a framework for identifying, assessing and controlling fatigue risks during an emergency.

4.6. Driving and Travel

Fatigue slows a driver's reaction time and affects their scanning ability and information processing skills. Driving between the hours of midnight to dawn is especially dangerous, and night shift personnel should consider these increased dangers when driving or operating machinery during these times. Personnel driving vehicles to and from work shall:

- complete a Journey Management Plan (if journey is greater than 200km)
- plan any driving or travel well in advance;
- plan the journey in accordance with the working hours framework in Table 2
- avoid driving for more than 8-10 hours in any one day;
- ensure adequate sleep the night before a long journey (minimum 10 hours);
- share driving where possible;
- take a rest break from driving of at least 10 minutes every two hours; and

- if concerned about the fatigue risks, consider arranging an alternative method of transport and/or accommodation.

Where work duration reaches 14 hours (including travel time), a person may be provided with transport for the return journey to their home, or provided with a suitable place for sleep or rest prior to driving home.

The Code of Practice (WA) Working Hours provide the following tips to manage fatigue when driving for long periods e.g. between Ports:

- avoid driving when you are tired;
- avoid using the heater as it can make you feel drowsy. In cool conditions direct warmth to your feet, and open the window a little to allow fresh air on your face; and
- keep your mind active by listening to the radio while driving;

It is important to note that these methods only have an effect for approximately 15 minutes.

5. TRAINING

Fatigue awareness training shall be provided to all personnel in accordance with the HSES Training Needs Analysis. This training shall be refreshed periodically. The training will provide all personnel with the knowledge required to understand fatigue causes and symptoms and the ability to conduct a self-assessment of their individual fatigue risk and fitness for work.

6. MONITORING AND AUDIT

The application of this procedure shall be periodically audited in accordance with the HSES Internal Audit Schedule. In addition, Management will utilise software applications with mathematical algorithms (where practicable) to assist in determining the fatigue risk potential when scheduling work (e.g. FAID Quantum).

7. RECORD KEEPING

All records associated with this procedure shall be retained, archived and disposed of in accordance with the *Western Australian State Archives General Retention and Disposal Schedule for Administrative Records*.

8. REFERENCES

8.1. Legislation and Other Requirements

| Description | Status | Location |
|---|--------|---|
| <i>Guide for Managing the Risk of Fatigue at Work</i> (Safe Work Australia) | Active | http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/guide-fatigue-at-work |
| <i>OSH Act 1984 (WA)</i> | Active | www.legislation.wa.gov.au |
| <i>Mine Safety and Inspection Act 1986 (WA)</i> | Active | www.legislation.wa.gov.au |
| <i>Western Australian State Archives General Retention and Disposal Schedule for Administrative Records</i> . | Active | www.sro.wa.gov.au |

8.2. Supporting Procedures

| Description | Status | Location |
|--------------------------------------|--------|----------|
| Risk Management Framework | Active | MyPort |
| Business Travel procedure | Active | MyPort |
| Emergency Management Plans (various) | Active | MyPort |

8.3. Supporting Documents, Forms and Templates

| Description | Status | Location |
|------------------------------|--------|------------------|
| Journey Management Plan | Active | MyPort |
| SP Record Keeping Plan | Active | MyPort |
| HSES Training Needs Analysis | Active | Internal to HSES |
| HSES Internal Audit Schedule | Active | Internal to HSES |


9. DEFINITIONS



| Term | Definitions |
|--------------------------|---|
| Circadian rhythms | Humans are programmed to sleep during the night hours and be awake during the day hours. The term ‘circadian rhythms’ refers to this natural sleep/wake cycle that occurs over the period of a day, which does not generally adjust easily to shiftwork. The low point in the circadian alertness and performance cycle is at night, and as a result the risk of incidents occurring due to impaired alertness and performance is at its highest between 3am and 5am. |
| Fatigue | A state of impaired physical and/or mental performance and lowered alertness resulting from inadequate restorative sleep that can impair a person’s fitness for work. Job factors that can increase or decrease the effects of fatigue on performance include task length, the complexity of the task (i.e. monotonous, simple tasks may increase the effects of fatigue) and the individual’s motivation to complete the task. |
| Fit for work | A person is in a state (physical, mental and emotional) that enables them to perform assigned tasks safely, competently and in a manner that does not threaten or compromise the safety or health of themselves or others. |
| Fitness for Work Program | A program that establishes and implements initiatives to address potential risk factors that may cause the impairment of a person. This includes initiatives such as alcohol and drug monitoring, along with stress and fatigue management strategies. |
| Hazard | A situation that has the potential to harm a person and/or the environment and/or damage property. |
| Incident | An event or circumstance that could have or did lead to unintended and/or unnecessary harm to a person and/or loss or damage or adverse consequences. This definition of an incident includes near miss events. |




| Term | Definitions |
|------------------|---|
| Management | <p>Management are responsible for managing a functional area of the business including the personnel within the relevant functional area. This includes, but is not limited to, Management, Superintendents and Project Management. Management is also considered as personnel or a person, however Management may have additional responsibilities for implementation of the Safety Management System as well as any additional responsibilities as an Officer of the business.</p> <p>Management can also be a person with day-to-day Line Supervision responsibilities for personnel within a functional area of the business. This may include, but is not limited to, Officers, Leading Hands, Coordinators and Supervisors. Management with Line Supervision responsibilities are also considered as personnel or a person, but has additional responsibilities for the implementation of the SP Safety Management System as identified in the OHS Management Plan.</p> |
| Risk | <p>Risk is the likelihood and consequence of injury or harm occurring when exposed to a hazard.</p> |
| Risk control | <p>Means taking action to eliminate health and safety risks so far as is reasonably practicable, and if that is not possible, minimising the risks so far as is reasonably practicable. Eliminating a hazard will also eliminate any risks associated with that hazard.</p> |
| Personnel/Person | <p>A person who carries out work in any capacity for SP, including work as:</p> <ul style="list-style-type: none"> • a worker; • a contractor or subcontractor; • a worker of a contractor or subcontractor; • a worker of a labour hire company who has been assigned to work at SP; • an apprentice or trainee; • a visitor; and • a student gaining work experience. |
| Workplace | <p>A place where work is carried out by SP and includes any place where a person goes, or is likely to be, while at work. This includes a vehicle, vessel or other mobile structure.</p> |


APPENDIX A – FATIGUE RISK CONTROLS

The following table is an extract from the *Guide for Managing the Risk of Fatigue at Work* (Safe Work Australia). It provides additional guidance and support on the identification of risk controls that may be utilised when managing risks associated with fatigue.

| Step 1: Hazard identification | Step 2: Risk Assessment | Step 3 Risk Control | | | | | | | | | | | | | | | |
|---|--|---|----------------------------|-------------------------|-------------------------------|-------------------|--|-----------------|------------------|--|--|------------------|------------------|----------------------------|--|--|---|
| Identify potential hazards and risks at the workplace. Examples of some factors that contribute to fatigue are listed below. Consider these factors in the context of your specific workplace or industry. | To assist risk assessment, a general level of risk for each hazard is indicated along arrow guides. In assessing risk, consider interaction between hazard factors that could influence the level of risk. Also take into account specific workplace/industry circumstances that may influence it. | Where a hazard is assessed as medium/higher risk, consider implementing control measures, such as those outlined in section 2 of this code. | | | | | | | | | | | | | | | |
| Factors that contribute to fatigue | General risk indicator for factors that contribute to fatigue | Control measures | | | | | | | | | | | | | | | |
| <p>Work scheduling and planning hours</p> <ul style="list-style-type: none"> ▪ Average weekly hours (other than Commuting) ▪ Total hours over a three month period (other than Commuting) ▪ Daily work hours ▪ Daily work hours and work-related travel, including commute by plane, vessel or vehicle ▪ Scheduling of work | <div style="text-align: center;">  </div> <table border="0" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%; text-align: center;">48 hours (working week)</td> <td style="width: 33%; text-align: center;">56 hours (working week)</td> </tr> <tr> <td style="text-align: center;">35-40 hours (working week)</td> <td style="text-align: center;">624 working hours</td> <td></td> </tr> <tr> <td style="text-align: center;">9 working hours</td> <td style="text-align: center;">12 working hours</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">10 working hours</td> <td style="text-align: center;">13 working hours</td> </tr> <tr> <td style="text-align: center;">Regular, predictable hours</td> <td colspan="2" style="text-align: center;">Irregular and unpredictable hours, short notice of schedule, extended overtime, on-call across shift cycle</td> </tr> </table> | | 48 hours (working week) | 56 hours (working week) | 35-40 hours (working week) | 624 working hours | | 9 working hours | 12 working hours | | | 10 working hours | 13 working hours | Regular, predictable hours | Irregular and unpredictable hours, short notice of schedule, extended overtime, on-call across shift cycle | | <p>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</p> <ul style="list-style-type: none"> ▪ Scheduling safety critical work outside low body clock periods (i.e. between 2am and 6am) ▪ Structure shifts and work plans so that demands are highest towards the middle of the shift and decrease towards the end ▪ Use forward rotation roster systems (day-evening-night) ▪ Designing working hours and rosters to provide for adequate sleep opportunity (considering time for eating, washing, personal commitments etc.) ▪ Monitor actual time worked against the allocated roster and identify if excessive hours are being worked |
| | 48 hours (working week) | 56 hours (working week) | | | | | | | | | | | | | | | |
| 35-40 hours (working week) | 624 working hours | | | | | | | | | | | | | | | | |
| 9 working hours | 12 working hours | | | | | | | | | | | | | | | | |
| | 10 working hours | 13 working hours | | | | | | | | | | | | | | | |
| Regular, predictable hours | Irregular and unpredictable hours, short notice of schedule, extended overtime, on-call across shift cycle | | | | | | | | | | | | | | | | |

| Factors that contribute to fatigue | General risk indicator for factors that contribute to fatigue | Control measures |
|--|---|--|
| <p>Shift work</p> <ul style="list-style-type: none"> ▪ Length of shift (other than Commuting) ▪ Time of Shift ▪ Speed and direction of shift ▪ Split shifts and variable shifts |  <p>10 hours 13 hours</p> <p>Day Shift Afternoon shift Night shift</p> <p>Forward rotation (morning/afternoon/night) Backward rotation (night / evening / morning) Slower rotation (i.e. weekly / 3-4 weekly rotation)</p> <p>13 hour period</p> | <p>Additional control measures should be implemented for special work arrangements and include:</p> <ul style="list-style-type: none"> ▪ Considering sleep opportunity and recovery in instances where personnel are required to work on-call after a normal shift or on days off ▪ Avoiding quick shift changeovers such as finishing at 11am and starting again at 7am ▪ Using forward rotation roster systems (day-evening-night) ▪ Allocating shift and night personnel consecutive days off to allow for at least two full nights rest including some weekends |
| <p>Night work</p> <ul style="list-style-type: none"> ▪ Shift end (for those working 12 hours or more between 6pm and 6am) ▪ Sequential night shifts |  <p>After 6pm and before 6am</p> <p>8 hours 10 hours 12 hours</p> <p>6 or more 8 hour shifts 5 or more 10 hour shifts 4 or more 12 hour shifts</p> | <p>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</p> <ul style="list-style-type: none"> ▪ Planning into work schedules enough personnel and other resources to do the job without placing excessive demands on personnel ▪ Keeping sequential night shifts to a minimum ▪ Avoiding overtime allocations after afternoon or night shifts |

| Factors that contribute to fatigue | General risk indicator for factors that contribute to fatigue | | Control measures |
|---|--|---|---|
| Breaks |  | | <p>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</p> <ul style="list-style-type: none"> Ensuring personnel have and take adequate and regular breaks so that they can rest, eat and rehydrate Including rest periods in the work schedule and allowing time for controlled sleeping and napping if necessary Designing working hours and rosters to allow for good quality sleep and enough recovery time between work days or shifts for travelling, eating, washing and sleeping |
| <ul style="list-style-type: none"> Period of non-working following a sequence of night shifts Frequency of breaks during work Recovery time/sleep opportunity between work periods | <p>48 hours</p> <p>Adequate and regular breaks</p> <p>Adequate time for sleep, travel, meals, etc.</p> | <p>Less than 48 hours</p> <p>Infrequent or no breaks</p> <p>Inadequate time for sleep, travel, meals etc.</p> | |
| Job demands |  | | <p>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</p> <ul style="list-style-type: none"> Install fit for purpose plant machinery and equipment for use at the workplace Redesign jobs to limit periods of excessive mental or physical demands Introduce job rotation to limit build-up of mental and physical fatigue |
| <ul style="list-style-type: none"> Repetition (physical and/or mental) Physical Mental | <p>Varying task demands</p> <p>Minimal physically demanding work</p> | <p>Highly repetitive work and or high concentration work, with high demands over an extended period of time</p> <p>Highly physically demanding work that results in muscle fatigue</p> | |
| Environmental conditions |  | | <p>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</p> <ul style="list-style-type: none"> Avoid working during periods of extreme temperature Install heating devices in cold work environments or provide access to cooled areas Install fit for purpose machinery (low noise) Install cooling devices in hot work environments like truck cabins and ensure shelters for shade are available in hot work environments Install adjustable, low vibration seats in appropriate machinery and vehicles and provide low vibration hand held equipment Taking reasonable steps to ensure the workplace and surroundings are well lit, safe and secure |
| <ul style="list-style-type: none"> Exposure to hazardous substances and atmospheric contaminants Exposure to noise Exposure to extreme temperatures Exposure to vibration | <p>Hazardous substances, low risk calculated using relevant exposure standard</p> <p>- exposure for short duration</p> <p>- low noise levels</p> <p>Short period of exposure</p> <p>Short period of exposure</p> | <p>For hazardous substances, high risk calculated using relevant exposure standard</p> <p>- exposure for long duration</p> <p>- high noise levels</p> <p>Long period of exposure</p> <p>Long period of exposure</p> | |

| Factors that contribute to fatigue | General risk indicator for factors that contribute to fatigue | Control measures | | |
|--|--|--|---|---|
| Individual and lifestyle |  | <p>The most appropriate control measures should be implemented for the identified risk factor. Control measures may include:</p> | | |
| <ul style="list-style-type: none"> ▪ Sleep (amount and quality) ▪ Health and wellbeing ▪ Social life ▪ Family responsibilities ▪ Other work commitments (for example having a second job) | <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Night sleep 8 hours sleep in 24 hours</p> <p>Adequate time to fulfil family responsibilities</p> <p>No other work commitments</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Day sleep 6 hours sleep in 24 hours</p> <p>Poor diet Recent illness/injury</p> <p>Influence of alcohol drugs or amount of sleep</p> <p>Inadequate time to fulfil family responsibilities</p> <p>Additional work commitments (second job)</p> </td> </tr> </table> | <p>Night sleep 8 hours sleep in 24 hours</p> <p>Adequate time to fulfil family responsibilities</p> <p>No other work commitments</p> | <p>Day sleep 6 hours sleep in 24 hours</p> <p>Poor diet Recent illness/injury</p> <p>Influence of alcohol drugs or amount of sleep</p> <p>Inadequate time to fulfil family responsibilities</p> <p>Additional work commitments (second job)</p> | <ul style="list-style-type: none"> ▪ Consulting with personnel and designing shift rosters that enable personnel to meet work and personal commitments ▪ Developing a fitness for work policy and consider implementing health and fitness programs |
| <p>Night sleep 8 hours sleep in 24 hours</p> <p>Adequate time to fulfil family responsibilities</p> <p>No other work commitments</p> | <p>Day sleep 6 hours sleep in 24 hours</p> <p>Poor diet Recent illness/injury</p> <p>Influence of alcohol drugs or amount of sleep</p> <p>Inadequate time to fulfil family responsibilities</p> <p>Additional work commitments (second job)</p> | | | |

APPENDIX B – FATIGUE RISK ASSESSMENT (SHIFT ROSTERS)

Instructions

- Identify and separately assess each of the different shift rosters used on your site.
- Mark each box according to the appropriate conditions at your site.
- Note the following points:
- **RED QUESTIONS** – the questions indicated in red are of extremely high importance in managing fatigue on your site. If you have marked 'No' for any of the red questions then the onset of fatigue issues is very likely and corrective action should be taken as soon as possible to address the specific areas of concern. Red questions carry a weighting of 3; that is each 'No' answer is worth 3 points.
- **YELLOW QUESTIONS** – the questions indicated in yellow are of moderate to high potential for fatigue issues to occur if the conditions are not addressed. If you have marked 'No' for any of the yellow questions, there should be further analysis and review of current systems. Yellow questions carry a weighting of 2.
- **BLUE QUESTIONS** – the questions indicated in blue are of low fatigue potential. If you have marked 'No' for any of the blue questions, a review of the conditions should occur subsequent to Red and Yellow questions being addressed. Blue questions carry a weighting of 1.

This guidance may assist Management to identify areas that require either corrective action or continual active management and those that would benefit from a review and monitoring process. The score system provides a general overview of the fatigue issues in a work place and may also provide a means to enable comparisons to be made between workplaces under similar and/or different situations/conditions. It is important to note that this assessment is to be used as a guide only. Not all relevant factors may have been included to suit local conditions.

| Site name: | Shift type: | Date: | | | |
|--|-------------|-------|----|----|-----|
| Shift System Design/Structure | | | NA | No | Yes |
| 1. Does the roster include four or fewer consecutive 12-hour night shifts (for community based operations)? | | | | | |
| 2. Does the roster include five or fewer consecutive 8-hour night shifts (for community based operations)? | | | | | |
| 3. Does the roster include eight or fewer consecutive 12-hour night shifts (for 'fly in/fly out' fully catered remote operations)? | | | | | |
| 4. Does the roster provide opportunity for 6 or more hours of continuous sleep in a 24-hour period (bearing in mind travel, meals etc.)? | | | | | |
| 5. Is there a cap on overtime (i.e. no more than 2 hours at the end of a shift for consecutive overtime shifts)? | | | | | |
| 6. Does the early (or day) shift start between 6:00am and 7:00am? | | | | | |
| 7. Does the roster include three or fewer consecutive 12-hour night shifts (for community based operations)? | | | | | |
| 8. Does the roster include four or fewer consecutive 8-hour night shifts (for community based operations)? | | | | | |
| 9. Does the roster include seven or fewer consecutive 12-hour night shifts (for 'fly in/fly out' fully catered remote operations)? | | | | | |
| 10. Does the roster provide opportunity for 7 or more hours of continuous sleep in a 24-hour period (bearing in mind travel, meals etc.)? | | | | | |
| 11. Does the rostered-on period rotate forward (day to afternoon to night, or day to night shift)? | | | | | |
| 12. Do 12-hour shifts have 2 or more long breaks (of sufficient length to have a meal; i.e. 20-30 minutes)? | | | | | |
| 13. Do 8-hour shifts have 1 or more long breaks (of sufficient length to have a meal; i.e. 20-30 minutes)? | | | | | |
| 14. Is the average working time for each 7-day period, including overtime, less than or equal to 48 hours? | | | | | |
| 15. Are variable start times within set limits allowed for work areas (e.g. the team can start any time between 6:30 and 7:00 am)? | | | | | |
| 16. Is there a scheduled educational/training shift (E-day) of up to 8 hours built into the roster? | | | | | |
| 17. After a period of night shift, is there at least 36 hours off before the next work period, providing opportunity for two sleep periods? | | | | | |
| 18. Do the number of rest days increase with increasing number of workdays, particularly for night work: e.g. 5 workdays/2 rest-days, or 7 workdays/3 rest-days, etc.? | | | | | |
| 19. Does the shift roster allow for at least one free weekend in four on average? | | | | | |
| 20. Has a participative approach involving personnel been used to develop shift arrangements? | | | | | |
| 21. Has independent expert advice regarding shift system design and community impact been used to develop shift arrangements? | | | | | |
| Score | | | | | |

| Employee Fitness for Work | NA | No | Yes |
|--|-----------|-----------|------------|
| 22. Is there a policy and procedures for requiring personnel to present and remain in a fit state for duty including not being impaired by alcohol or drug use? | | | |
| 23. Are criteria for fitness for work available through detailed position descriptions? | | | |
| 24. Do medical checks include consideration of sleep disorders and other conditions that might impact on an individual's ability to cope with fatigue (eg. diabetes, over weight, etc.)? | | | |
| 25. Are individual needs and preferences, particularly for older personnel (>40-50) and long-term shift personnel, considered? | | | |
| 26. Are women given the opportunity to move from night shift to permanent day shift for the duration of their pregnancy, with medical advice? | | | |
| Score | | | |
| Monitoring & Controlling Potential for Fatigue | NA | No | Yes |
| 27. Has a culture been created whereby operators are free to stop work and report to management when fatigued? | | | |
| 28. Is a minimum of 3 days notice given of a temporary shift roster change? | | | |
| 29. Is a minimum of 4 weeks notice given of a permanent roster change? | | | |
| 30. Is there a system to encourage self-reporting of fatigue or effects of medication on fatigue (confidential)? | | | |
| 31. Has management been trained to recognise fatigue? ¹ | | | |
| 32. Are personnel encouraged to take short breaks if fatigued? | | | |
| 33. Has consideration been given to the availability of alternative non-safety critical jobs, to cater for fatigue self reporting. | | | |
| 34. Is discretion allowed regarding the timing of breaks? | | | |
| 35. Where the site provides meals, is a healthy, low fat and low calorie food option provided at each mealtime? | | | |
| 36. Have fatigue-modelling algorithms or other methodologies been used to identify high potential risk activities or roles, and controls reviewed accordingly? | | | |
| 37. Has the use of devices (fatigue monitors) that can assess fitness for duty, or be installed in machinery to monitor driver or operator performance, been considered and documented? | | | |
| Score | | | |

¹ It is assumed that there is some form of competency assessment for all training provided.

| Activities Carried Out During Rostered & Overtime Hours | NA | No | Yes |
|---|----|----|-----|
| 38. Are working hours of individuals monitored, and recorded where practicable? | | | |
| 39. Are shifts customised according to personnel activity using risk management: e.g. shift lengths are reduced where sustained heavy ² physical work, repetitive work or taxing mental work is involved? | | | |
| 40. Is heavy, demanding or safety sensitive work scheduled at the first part of shifts, when personnel are most alert or at peak performance ³ ? | | | |
| 41. Are conditions that assist people to remain alert in place (eg. temperature, airflow, noise, lighting and ergonomics are controlled)? | | | |
| 42. Is accident/incident performance monitored for fatigue issues and documented? | | | |
| 43. Does work beyond 14 hours from shift commencement only occur after first assessing fitness for duty ⁴ ? | | | |
| 44. Is frequent task rotation (multi-skilling) practiced during shifts (eg. change-over every 2-3 hours) to minimise boredom, vary physical workload, and reduce critical monitoring (mentally demanding) tasks – done to the maximum degree as limited by available tasks? | | | |
| 45. Is transport home provided after more than 14 hours of work? | | | |
| 46. If working alone is required, is a means of ready communication provided and are there regular management visits? | | | |
| 47. Are hours worked regular and predictable (i.e. irregular emergency or on-call, call-out and unplanned overtime is minimal)? | | | |
| 48. Does the shift roster make it easy for personnel to track or plan ahead? | | | |
| 49. Do personnel have ready access to water and caffeine? | | | |
| 50. Do personnel have ready access to meal areas and to facilities to heat meals during meal breaks, particularly during evening and night shifts? | | | |
| Score | | | |
| Activities Carried Out During Non-Rostered Hours | NA | No | Yes |
| 51. When people return from extended leave (>5 days), are they scheduled for day/afternoon shift where possible (i.e. not night shift)? | | | |
| 52. Do shift systems take into account sufficient extra time for commuting to and from site, for either local-community based and/or 'fly in/fly out' operations? | | | |
| 53. Have employees with a second job for pay (moonlighting/double jobbing), or a heavy domestic workload (eg. farming, single parent), been identified and counselled regarding fatigue management? | | | |
| 54. Where sleeping accommodation is not provided, is some assistance and advice provided such that it is conducive to good sleep? | | | |
| 55. Where sleeping accommodation is provided, are the conditions conducive to good sleep (e.g. air conditioner or fan for hot climate, in-room toilet, etc.)? | | | |
| 56. Is consideration given to the partner's roster when assigning shifts? | | | |
| 57. Are childcare facilities available to facilitate shift-personnel sleep? | | | |
| Score | | | |

² Light work: Sitting or standing to control machines; hand and arm work assembly or sorting of light materials.

Heavy work: Pick and shovel work, continuous manual work, and carrying loads up stairs.

³ According to circadian rhythm, people are most alert at morning or early evening hours.

⁴ As determined by management not directly involved in the situation, who has had appropriate training in identifying fatigue factors.

| Programs to Improve Awareness & Provide Support | NA | No | Yes |
|--|-----------|-----------|------------|
| 58. Is a confidential employee assistance program (EAP) provided for counselling to help minimise fatigue and adapt to shift work? | | | |
| 59. Is appropriate and ongoing training on shiftwork and fatigue provided for people in leadership positions? | | | |
| 60. Does the educational material cover: - adjusting to shift work; | | | |
| - the effects of, and managing fatigue; | | | |
| - the effects of alcohol and other drugs; | | | |
| - lifestyle factors; | | | |
| - potential workplace hazards (eg. effects of dust and noise); and | | | |
| - company policy and standards requirements? | | | |
| 61. Is educational material on shiftwork and fatigue provided for personnel as induction material? | | | |
| 62. Is educational material on shiftwork and fatigue provided for personnel as ongoing-training material? | | | |
| 63. Is the information provided as written material (e.g. pamphlets), and as an on-site presentation to reinforce the provided material? | | | |
| 64. Is awareness training for the above refreshed annually? | | | |
| 65. Is a healthier life-style promotion program provided? | | | |
| 66. Does the healthier life-style program cover training on: - the need to maintain a reasonable body weight and level of fitness; | | | |
| - the need to manage sleep and rest when assigned to shift work; | | | |
| - the range of exercise facilities available; | | | |
| - the need to avoid excessive drinking of alcohol; | | | |
| - basic nutrition to enable healthy eating options to be chosen? | | | |
| Score | | | |

APPENDIX C – FATIGUE RISK ASSESSMENT (INDIVIDUALS)

| Work Team: | | | | | Date: | | | |
|------------|------|--|---------------------------------|------------------------------------|-------------------------------|-------------------------------------|-------------------------|---------------------------------|
| No. | Name | Less than 10 hrs rest b/n shifts (Y/N) | Feeling excessively tired (Y/N) | Feeling excessively stressed (Y/N) | Serious personal issues (Y/N) | Medication w/ fatigue effects (Y/N) | BAC reading >0.00 (Y/N) | If all (N) responses OK to work |
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Note: If any of the questions above return a yes (Y) response consult the People and Organisation team to determined appropriate action.

APPENDIX D – FATIGUE ASSESSMENT TOOL

For use when:

- Persons report they are fatigued
- Management or peers observe signs of fatigue or have concerns that a person is fatigued
- Other situations where there may be a fatigue risk, for example:
 - First night or day shift where there has been an extended commute;
 - After hours call outs; etc

Management shall discuss with the person and complete assessment together.

| Circle the most appropriate risk category for each question listed below | | Low Risk | Medium Risk | High Risk |
|--|--|-----------------------------------|--------------------------------------|------------------------------------|
| 1. | How many hours sleep have you had in the last 24 hours? | 7 or more | 5 to <7 | Less than 5 |
| 2. | How many hours sleep have you had in the last 48 hours? | 14 or more | 12 - <14 | Less than 12 |
| 3. | A) By the end of your shift, how many hours will you have been awake? A _____ B) How many hours sleep have you had in the last 48 hours? B _____ <div style="text-align: right;">A - B = _____</div> | A - B is 0 or negative | A - B is equal to 1 or 2 | A - B is 3 or more |
| 4. | Do you feel alert? Rating Description 1 <i>Feeling active, alert or wide awake</i> 2 <i>Functioning at a good level, but not at peak, able to concentrate</i> 3 <i>OK, but not fully alert</i> 4 <i>A bit groggy, hard to concentrate</i> 5 <i>Sleepy, groggy, would like to lie down</i> | 1 - 2 | 3 | 4 - 5 |
| 5. | How many alcoholic drinks did you have before your sleep? Male _____ Female _____ | 0 - 4 0 - 2 | 5 - 6 3 - 4 | 7 or more 5 or more |
| 6. | Are you on any medication or other substances that could cause drowsiness or cause you to be unfit for work? | No | | Yes |
| 7. | Do you have any stress, health problems or other personal problems that are significantly affecting your concentration and/ or sleep? | No | | Yes |
| Score the responses as instructed: | | Number of Low Risk boxes selected | Number of Medium Risk boxes selected | Number of High Risk boxes selected |
| Step 1: Add up the number of answers circled in each risk category | | _____ | _____ | _____ |
| Step 2: Multiply this number by the multiplier number to get a Risk Score for each risk category | Multiplier | x 0 | x 1 | x 2 |
| | Risk Scores | 0 | | |
| Step 3: Add your Risk Scores together and use this number to follow the Recommended Action listed on the following page | | Total Risk Score | | |

| Level of Risk | Recommended Action |
|---|--|
| <p>Low Risk Total Score = 0 - 2 AND Person is</p> <ul style="list-style-type: none"> ▪ Alert ▪ Normal eye blinks (less than 1 second) ▪ Coordinated body movements ▪ Tolerant of others | <ul style="list-style-type: none"> ▪ Continue to monitor. ▪ Remind person about fatigue and alertness management strategies (interaction with others, coffee, exercise, cold air on face, etc). |
| <p>Medium Risk Total Score = 3 - 7 OR The person reports they are fatigued and/or are showing some of the following signs:</p> <ul style="list-style-type: none"> ▪ Irritable/impatient ▪ Longer eyelid closure (1-2 seconds) ▪ Wandering thoughts ▪ Rubs eyes or face ▪ Facial contortions ▪ Restless movements ▪ Yawning | <p>As above plus:</p> <ul style="list-style-type: none"> ▪ Discuss possible reasons for fatigue ▪ Rotate tasks ▪ Encourage the use of alertness strategies ▪ Provide opportunity for a short breaks/brief nap of no more than 15 minutes. ▪ Have personnel work together (if possible). ▪ Remove from safety sensitive work. ▪ Assess fitness for work before you allow person to return to work. ▪ Schedule regular supervision for remainder of shift. |
| <p>High Risk Total Score = 8 - 14 OR The person reports they are significantly fatigued and/or may be showing the following serious signs:</p> <ul style="list-style-type: none"> ▪ Quiet and withdrawn ▪ Long eyelid closure (2 or more seconds) ▪ Fixed staring ▪ Frequent yawning ▪ Micro sleeps | <p>Immediately prevent person from working and discuss the possible causes and action required.</p> <ul style="list-style-type: none"> ▪ Determine if the person can be placed on alternate duties for the remainder of shift and managed at work. ▪ If unable to be managed on alternate duties, send the person home (provide transportation) and report incident in INX. |

I have had a one-on-one discussion with management and have responded honestly to all questions. I agree to follow the controls listed below to manage any identified fatigue issues:

Action Taken:

- No action required – person to report any further fatigue issues to management.
- Controls implemented as detailed below:

- Person placed on the following alternate duties for the remainder of shift:
- Person sent home and reported in INX. Transport arrangements _____

Personnel/Contractor Name: _____ Management Name: _____

Personnel/Contractor Signature: _____ Management Signature: _____

Date: _____ Time: _____