



**TASMANIAN MINERALS COUNCIL**  
**FATIGUE RISK MANAGEMENT GUIDE**

**FATIGUE RISK MANAGEMENT FRAMEWORK**

**&**

**TOOLKIT SUGGESTIONS for inclusion in a Site's**  
**FATIGUE RISK MANAGEMENT PLAN**

**&**

**SUGGESTED SITE PLAN STRUCTURE**

# CONTENTS

	PAGE
<b>The Tasmanian Minerals Council Fatigue Risk Management Guideline</b>	
Introduction	3
<b><u>PART ONE Fatigue Risk Management Framework</u></b>	<b>4-5</b>
Vision	
Accountability	
<i>Site Management</i>	
<i>Site Employees</i>	
Deployment	
<hr/>	
<b><u>PART TWO Tool Kit – Education Tools and Management Models</u></b>	
Introduction -Managing Fatigue as a Risk	6
<b><i>Examples – Drew Dawson</i></b>	<b>7-9</b>
2.1 The Diagnostic Modelling Test- <i>Defining the Low Risk Zone</i>	
2.2 The Personal Prior/Sleep Wake Model/Sleep Wake Rules	
2.3 Risk Based Decision Tree	
<hr/>	
2.4 Computer Modelling– <i>rosters/shift patterns</i>	10
<hr/>	
<b><i>Additional Examples – Site suggestions currently supplied</i></b>	
Fatigue Impairment Guidance Notes and Guidelines – <i>Supervisor</i>	12-14
Leader and Self Risk Assessment Guide/Checklist	15-16
Training and Research links	17
<hr/>	
<b><u>PART THREE Site Fatigue Risk Management Plan (a suggestion)</u></b>	
3.1 Introduction – Defining a Fatigue Risk Management Plan	18
3.2 Four Possible Key Elements of a Risk Management Plan	19
3.3 Components of a Risk Management Plan	20-21

The Tasmanian Minerals Council is committed to providing quality services to the minerals industry and its members and has made every attempt to ensure the veracity, currency and reliability of the information contained within this document. However, modifications on existing content and new information about the managing of fatigue may arise after time of publication and therefore may impact on this. The FM Package is a living document and as such the Minerals Council will endeavour to maintain the currency via feedback and continued work with the OHS Committee, but takes no responsibility for this. The document contains provision for modification and addition at the site level in sections two and three.

## INTRODUCTION

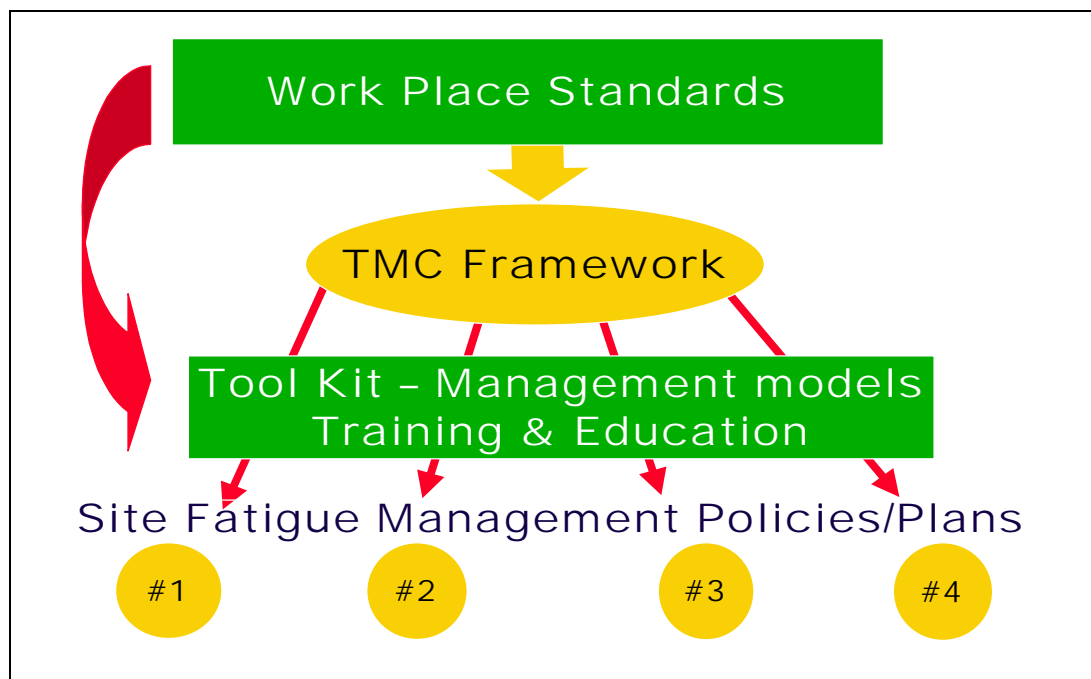
This Guide provides the suggested building blocks for sites and organisations to develop their own Fatigue Risk Management Plan in alignment with the Tasmanian Minerals Council Fatigue Risk Management Framework.

This document will assist management and employees understand and manage the risks associated with fatigue in the workplace within a Duty of Care regulatory regime and as an integral part of a Safety Management System. The Framework and Plan are consistent with the obligations imposed on both employers and employees set out in the Tasmanian Workplace Health and Safety Act 1995. The process outlined is a minimum expectation that should be equaled or bettered where possible and practical to do so.

This document consists of three parts :-

1. The TMC Fatigue Risk Management Framework (**industry agreed position**)
2. Fatigue Risk Management Plan Toolkit (**options on a site by site basis**)
3. Site Fatigue Risk Management Plan Structure (**suggested**)

The model adopted is based on a Global to Local Policy framework suggested by Professor Drew Dawson from the Centre for Sleep Research at the University of South Australia. It considers current knowledge and is subject to change as research and operational information and knowledge changes.



## **PART ONE**

### **Tasmanian Minerals Council FATIGUE RISK MANAGEMENT FRAMEWORK**

#### **I. VISION**

The Tasmanian minerals industry recognises that fatigue is one of many factors important to designing a safe “system of work”. As part of the Tasmanian Mineral Council’s overall commitment to safety, and to support the minerals industry and their employees, customers, the public and other stakeholders who are affected by their actions, the Council is actively working with Industry to minimise the risks associated with fatigue in the workplace.

#### **II. ACCOUNTABILITY**

Fatigue is an issue that affects managers and employees in different ways. Reducing the risks associated with fatigue is a shared responsibility that requires reasonable actions to minimise the risk of fatigue-related accidents and injuries. Therefore:

##### **A. Site Management**

Management will be responsible for minimising the risks associated with work-related fatigue. Accordingly, management teams should ensure that all-relevant sections within that company:

1. Develop an appropriate fatigue risk management plan to identify, assess and manage the risks associated with fatigue. These plans should be developed in conjunction with employees and their representatives. These plans should be reviewed on a regular basis to reflect changes in work and improvements in the methods of fatigue management. Additionally, management should ensure that there is an appropriate reporting process and an accountable executive for each site.
2. Ensure all employees and contractors, for whom fatigue is a potential safety hazard, successfully complete a training program that enables them to:
  - a. Identify the risks associated with fatigue
  - b. Identify and implement appropriate strategies for minimising fatigue-related risk
  - c. Determine whether their behavior is consistent with relevant fatigue management plans.
3. Develop an appropriate management system for:
  - a. Identifying and reporting the risks associated with all reasonably foreseeable work practices,
  - b. Determining compliance with the fatigue management plan,
  - c. Determining the extent to which fatigue may contribute to accidents and injuries within the workplace.
4. Continue to review, monitor and improve fatigue management practices in response to information obtained in sections (1) through (3).

## **B. Site Employees**

Employees and contractors will be responsible for minimising the risks associated with non-work related sources of fatigue. As such, all employees should be responsible for:

1. Ensuring that they understand and execute their responsibilities with respect to appropriate sections of the fatigue risk management plan.
2. Ensuring they successfully complete all relevant training with respect to fatigue management.
3. Utilising their training to identify, report and manage any actual or potential risks likely to be associated with fatigue.
4. Using their allocated time away from work to obtain an amount of sleep sufficient to ensure that the risks of fatigue-related accidents and injuries are minimised consistent with organisational safety requirements. The definition of sufficient sleep will be included in the appropriate fatigue risk management plan.
5. Informing their Supervisor if they have not obtained sufficient sleep.

## **III. DEPLOYMENT**

Industry sites should be responsible for ensuring that appropriate fatigue risk management programs are initiated and maintained in their respective jurisdictions. Reviews should be conducted to ensure that programs are implemented and effective in managing fatigue.

Site management should be responsible for ensuring that work practices do not create inappropriate levels of fatigue for workers and that risk assessments should be carried out where fatigue levels have a possibility of impinging on the safe conduct of work.

Employees and their representatives should be consulted in the formulation, maintenance and review of fatigue risk management programs. Assistance should be provided to employees to ensure they obtain maximum benefit from the program. This may take the form of further education, training or counseling.

Site management should ensure that the results of such reviews are used to provide feedback for comparison against existing fatigue risk management programs, and for these programs to be further modified and improved if deemed appropriate.

This Framework will be reviewed on a regular basis to reflect changes in work and improvements in the methods of fatigue risk management.

## PART TWO

### FATIGUE RISK MANAGEMENT PLAN TOOLKIT

#### **Introduction**

This Toolkit is intended to provide possible application models and educative and research materials that can be used at an organisational and site level to assist manage the risks associated with fatigue.

The toolkit in this package consists of a collection of some of the current fatigue management tools that are at their formative stages. In particular there is an emphasis on tools provided by Professor Drew Dawson from the Centre of Sleep Research, but it is recognised that these are not the only tools available or in use. As with the current issue on how to manage fatigue, current thinking will evolve and some fatigue management tools will become outdated, others will be modified and new ones will be developed. This toolkit provides some of the current options available and will be updated as appropriate.

Sites are encouraged to add their own suggestions in accordance with the principles of the Fatigue Risk Management Statement.

Feedback on the application of any of these, or other toolkit options that might be available, is welcome by the TMC. Comments and suggestions can be forwarded to -

Jennifer Phillips  
Tasmanian Minerals Council  
Email [tasminerals@southcom.com.au](mailto:tasminerals@southcom.com.au)

## **DEPLOYMENT TOOLS AND MANAGEMENT MODELS**

**Section 2.1-2.3 provides a suggested model to diagnose and assess a fatigue risk profile.**

It includes a test to establish a starting point for management to define a low risk zone; a model for employees to self assess based on prior sleep for a 48 period; and a Decision Tree to establish risk mitigation processes.

### **2.1 THE DIAGNOSTIC MODEL TEST**

(courtesy of Prof. Drew Dawson, Centre for Sleep Research)

## **Defining the Low-Risk Zone**

**Work-related** fatigue is unlikely to be a problem in a work place for employees whose schedule or roster involves

1. No more than 48 hours worked per week
2. No shift more than 12 hours in duration
3. No break between work periods less than 12 hours
4. No more than 12 hours of 'night work' per 7 day period  
[i.e. total weekly hours worked between 2100h-0900h]
5. At least one break of 36 hours per 7 day period

**If any of the above are not true a Fatigue Risk Management Plan is probably required**

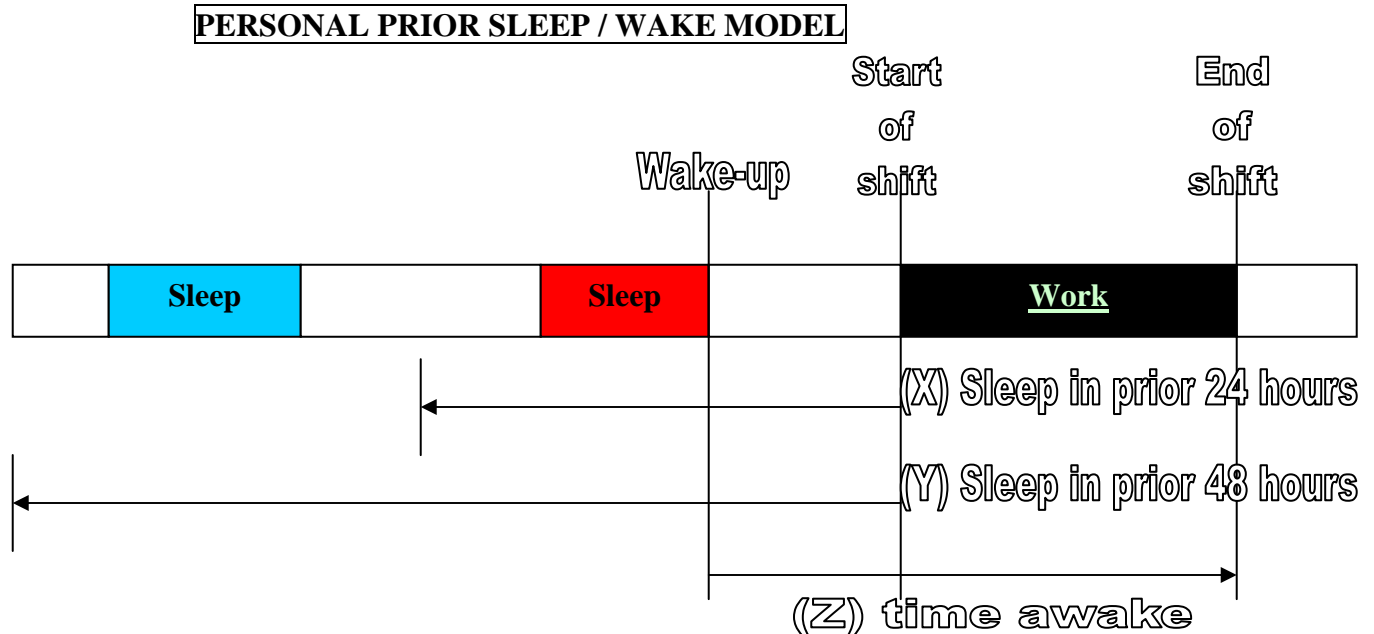
## 2.2 THE PERSONAL PRIOR SLEEP / WAKE MODEL

(courtesy of Prof. Drew Dawson, Centre for Sleep Research)

This model can be used by any employee to self-assess whether fatigue may be an issue for that individual at the workplace.

### Step One

Determine the amounts of prior sleep and wakefulness (suggested model below)



Fatigue is unlikely to be a problem when X, Y and Z are above the task and/or occupationally defined thresholds.

### Step Two

#### **Sleep and Wake Rules**

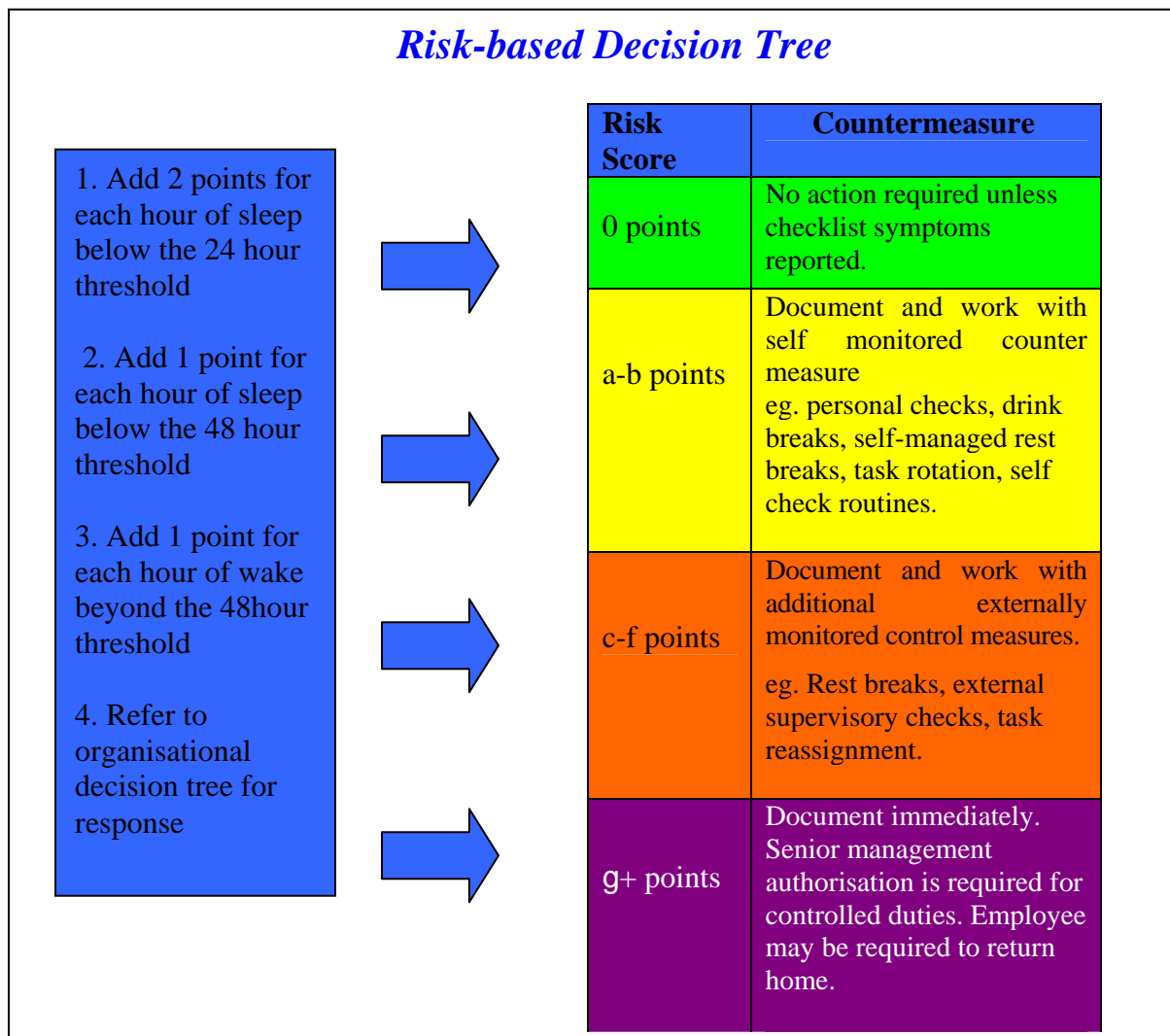
- **(Sufficient sleep)** – Must obtain X hours sleep in the 24 hours prior, and Y hours sleep in the 48 hours prior to commencing work
- **(Excessive wake)** – The period from wake-up to the end of shift (Z) should not exceed the amount of sleep (Y) obtained in the 48 hours prior to commencing the shift
- **(Risk mitigation)** – Non compliance indicates that fatigue may be a potential problem and the individual should calculate a risk score and notify their line manager and the organization should engage in an auditable fatigue risk reduction process

- e.g. 'X' may be required to be equal to or greater than 5  
 'Y' may be required to be equal to or greater than 12  
 'Z' may therefore be required to be less than or equal to 12 ('Y')

### Step Three

If either the sufficient sleep or excessive wake criteria are broken, fatigue may be a potential problem and the individual **MUST** notify their line manager. An auditable risk-based decision tree process should then be undertaken, and risk mitigation measures should be considered.

### 2.3 Risk Based Decision Tree



The amount of required sleep and wakefulness (X<Y and Z) should be agreed at the site level.

The risk score range (0 to g+) should also be agreed at the site level.

## 2.4 COMPUTER MODELLING SOFTWARE (FAID -A Current Example )

InterDynamics “Fatigue Audit InterDyne” (FAID) software was developed in collaboration with the Centre for Sleep Research at the University of South Australia ([www.unisa.edu.au/sleep/](http://www.unisa.edu.au/sleep/)), headed by Professor Drew Dawson.

The fatigue modelling computer program predicts the effects of disordered sleep resulting from shiftwork. The program has been designed against a body of data collected around the world and in the course of the Centre's research. It predicts work-related fatigue by taking into account the duration and timing of work periods, work history, and the biological components of sleep.

Using hours of work as input, the program enables the assessment of current rostering practices and provides accurate information to employees and employers on the potential impact of specific roster changes.

This program is available through InterDynamics. For more information about the program and how to access it, please visit <http://faid.interdynamics.com/>

## 2.5 SITE BASED FATIGUE MANAGEMENT SUGGESTIONS

There is provision for users to add their own site based fatigue management tools to broaden the application of this Guide. The Framework is based on a risk management and shared responsibility approach. Sites are encouraged to add material and resources that supports this.

---

## **FATIGUE IMPAIRMENT GUIDANCE NOTES – Supervisor**

\*\*(courtesy of Osborne Mines, Placer Dome Asia Pacific. Two-time MINEX award winner)

These Fatigue Impairment Guidance Notes are designed as a framework for a step-by-step process for making decisions about fatigue impairment and the most appropriate supervisory response. These guidelines should not be seen as a definitive measure, but rather as a guide to conversation.

### **Step 1**

The first step is to formalise what you have noticed about the person's functioning or behaviour. While most of us have an intuitive sense for when a person is tired, this simple checklist asks us to take specific notice of some of the known symptoms of fatigue. It is worthwhile going through the checklist and checking the appropriate boxes.

If the person exhibits three or more of the typical symptoms of fatigue, or very marked symptoms in any one or two areas, proceed to Step 2.

### **Step 2**

The second step is to estimate the degree of risk associated with what you have observed. Risk depends on the likelihood and severity of the consequences of the person's functioning / behaviour. There will be many factors that will influence your estimate of risk for this person in his / her situation.

Having gained a sense of the level of risk involved, you must ask the question, "Is this an acceptable level of risk?"

If you conclude that the risk is beyond an acceptable level, proceed to Step 3.

### **Step 3**

The third step is to engage the individual in conversation about his/her symptoms. It is important for you to clearly state what you have observed and your estimate of the risk involved, and the reasons for your estimate of the risk involved. Has the person an explanation for what you have observed? An explanation does not discount what you have observed, but may put it in another context, or offer a reason for why they are not functioning normally. For example, the person may not have eaten for 8 hours, have low blood sugar levels and be exhibiting symptoms consistent with fatigue.

The explanation may offer some answers to the next set of questions. Remember the purpose of asking these questions is to encourage the individual to take responsibility for their functioning and to think about the reasons behind their fatigue-related risk. Potential reasons for fatigue related risk lie in inadequate sleep, inappropriate work in harsh conditions, inadequate breaks, inadequate nutrition or hydration, and/or a high level of personal stress. It is also worth asking the question about the individual's fatigue management strategies, i.e. how do they go about preventing fatigue related risk? This question suggests the person has a role to play in thinking about their work and in preventing fatigue risk.

#### **Step 4**

Having observed symptoms of fatigue, formed a view of the risk involved, gained an understanding of the person's own understanding of the situation and their functioning, it is time to make a decision about whether you are prepared to allow the situation to go unchecked. Your decision should be based on your estimate of the risk involved. The critical aspect is what needs to happen to minimise the risk to an acceptable level? Potential steps for intervention are to instruct the individual to take a short break, to do a different task, or if you form the view that the risk is high and that they are so fatigued no break or different task will make a difference to their fatigue risk, then get them off site. It would not be appropriate to allow a person this fatigued to drive home.

Follow-up questions for supervisors involve strategies to prevent this from happening again. Has the person a history of fatigue related impairment or incidents? What action do you need to take? Do disciplinary actions apply? Is the person demonstrating an inability to manage fatigue? Do they need some additional information on fatigue management or referral to the EAP? Do you need to involve someone else in the decision? These questions will be shaped to a significant degree by local policy and procedures, and supervisors should act within the local approach to managing fatigue.

#### **Section 2**

Refer to Suggested Fatigue Impairment Supervisors Guidelines for Action Checklist -next page

# FATIGUE IMPAIRMENT

## SUPERVISOR'S GUIDELINES

YES                      NO

**STEP 1. OBSERVATION** (What can be observed about this person's functioning/behaviour?)

Is there a significant change in the person's behaviour? .....  YES                       NO  
 In what area has there been a change? \_\_\_\_\_

**Physical Symptoms**

- 1. Eyes bloodshot .....  YES                       NO
- 2. Slower movements .....  YES                       NO
- 3. Poor co-ordination .....  YES                       NO
- 4. Slower than normal response time e.g. response to radio contact .....  YES                       NO

**Cognitive Functioning**

- 1. Distracted from task .....  YES                       NO
- 2. Poor concentration/lapses in concentration .....  YES                       NO
- 3. Doesn't complete tasks .....  YES                       NO
- 4. Short-term memory loss (forgets instructions) .....  YES                       NO
- 5. Nodding-off momentarily .....  YES                       NO
- 6. Fixed gaze and/or reports blurred vision .....  YES                       NO

**Emotion/Motivation**

- 1. Seems depressed .....  YES                       NO
- 2. Irritable .....  YES                       NO
- 3. Doesn't care anymore .....  YES                       NO
- 4. Easily frustrated with tasks .....  YES                       NO

**If 3 or more indicators of fatigue are present, proceed to STEP 2.**

**STEP 2. RISK**

- 1. Has a fatigue-related incident occurred? .....
- 2. Has the person (self-report/ by another person) been identified as at fatigue risk? .....
- 3. Is there a risk associated with the person's functioning/behaviour? .....  
 (i.e. risk to self, others or equipment)
- 3a. If Yes, What is the level of risk? .....  High    Moderate    Low  
 (your best estimate)

**If you form the view that the risk is unacceptable proceed to Step 3.**

**STEP 3. CONVERSATION**

**Insight/Understanding**

1. What is the person's explanation of what you have observed? .....

**Sleep**

- 2. How many hours since they last slept? ..... \_\_\_\_\_ hours
- 3. How long did they sleep? ..... \_\_\_\_\_ hours
- 4. Have they experienced a recent change in their sleeping habits? .....  YES                       NO
- 5. Is there a reason/s for not enough sleep or poor sleep? .....

**Work**

- 6. What tasks have they been working on this shift? .....
- 7. Are those tasks "high-risk" for fatigue? e.g. repetitious or in hot conditions .....  YES                       NO
- 8. If Yes, How long have they been working on that task? ..... \_\_\_\_\_ hours

**Breaks**

- 10. When did they last have a break in shift? ..... \_\_\_\_\_ hours
- 11. How long was that break? ..... \_\_\_\_\_ hours

**Fatigue Management**

- 12. When did they last drink some water or eat something? (i.e. dehydrated or hungry?) ..... \_\_\_\_\_ hours
- 13. What do they usually do to prevent fatigue? .....

**Step 4. A decision is now required on whether intervention is needed or not**

**STEP 4. SUPERVISOR ACTION**

- 1. What is the level of risk associated with this person's continuing without intervention? .....
- 2. If that risk is unacceptable, what steps need be taken to minimise the immediate risk?
  - a. Task rotation option .....  YES                       NO
  - b. Short break option .....  YES                       NO
  - c. Go home option (sick leave to apply) .....  YES                       NO
- 3. Has this person been associated with previous fatigue issues? .....  YES                       NO
- 4. Follow-up procedures:
  - First occasion – deal with it informally, but record incident .....  YES                       NO
  - Incident report completed .....  YES                       NO
  - Disciplinary procedures .....  YES                       NO
  - \_\_\_\_\_
  - Training in fatigue management recommended .....  YES                       NO
  - Referral to EAP .....  YES                       NO

Name of employee: \_\_\_\_\_ Name of Supervisor \_\_\_\_\_ Date \_\_\_\_\_



## SUPERVISOR FATIGUE MANAGEMENT - RISK ASSESSMENT GUIDE

**This guide is intended to be a tool for supervisors. Where tasks are deemed ‘high risk’, this should be completed by either the Supervisor / Superintendent / Manager / General Manager following discussions with the person being called out or remaining on site.**

Name of person involved:				Date:
Output Team:				MRU:
Call out time:				Expected call out duration:
Reason for call out / remaining on site:				
Normal work roster:	Continuous shift	π	Day work	π
	Continuous day shift	π	Other	π
Hours since shift completed:	_____ hours		<b>Ideally a break of 10 hours</b>	
Hours of sleep in the past 24 hours:	_____ hours		<b>Ideally 6 hours or more</b>	
Physical nature of tasks during last shift:	High physical component	π	Less / no physical component	π
	Mentally demanding / problem solving	π	Routine tasks	π
Physical work conditions explained?	Yes	π	No	π
Does the person feel capable of returning to / continuing work?	Yes	π	No	π
Alcohol & Other Drugs policy compliance?	Yes	π	No	π
Any medical condition that will impact fatigue?	Yes	π	No	π
	_____			
Signs and symptoms: <i>Observations during discussions</i>	Co-operative	π	Irritable / angry	π
	Calm	π	Tired	π
	In control	π	Frustrated	π
What is your Risk rating? <i>Circle</i>	Low	Medium	High	Critical
<b>Assessment:</b> Fit for duty?	Yes	π	No	π
Justification:				
<b>Note fatigue controls in place? Eg. Monitoring</b>				
Signed by either <b>CL/Supt/Mgr/GM</b>	<b>Date:</b>			

Distribution - Copy to be maintained by the supervisor.

## **Suggested TRAINING AND RESEARCH MATERIAL**

### **Compiled as resources come to hand**

- 1). ANTA (Australian National Training Authority) competency based fatigue management training (including a Train-the-Trainer component) see [www.humantra.com](http://www.humantra.com)
- 2). MARCSTA Shiftwork and Lifestyle training
- 3). MIRMgate – The **M**inerals **I**ndustry **R**isk **M**anagement **G**ateway is a website that provides access to a useful database of information related to hazard and risk management in mining, minerals processing and quarrying industries. MIRMgate uses information technology known as metadata to locate resources and provides a single doorway to relevant individual websites. Browsing the MIRMgate database can be by Hazard (e.g. noise), by Task (e.g. exploration), or by Subject (e.g. Mine safety). Fatigue is one such subject covered. [www.mirmgate.com](http://www.mirmgate.com)
- 4). "Work Design, Fatigue and Sleep – A resource document for the minerals industry", 2004 – A commissioned report for the Minerals Council of Australia by the Centre for Sleep Research, University of South Australia.
- 5)....
- 6)...

## PART THREE

### SITE FATIGUE RISK MANAGEMENT PLAN (a suggestion)

This suggested Plan structure is predicated on a mutual obligation model, and is provided to assist management and employees develop, understand and manage the risks associated with fatigue in the workplace.

#### 3.1 DEFINING A FATIGUE RISK MANAGEMENT PLAN

The employer should implement an appropriate Safety Management Plan to minimise the risks associated with fatigue. The Fatigue Risk Management Plan should be scientifically based and legally compliant, reportable and auditable, and appropriate to the operator resource/risk profile which has been determined through agreement and review.

#### CONTEXT

Good fatigue risk management is about regulating, measuring and managing the opportunity to obtain sufficient sleep rather than prescribing the hours that an individual works.

**OH&S based approach.** Fatigue is an identifiable hazard and is to be managed using the pre-existing OH&S framework.

**Performance based approach.** Onus is on the organisation to prove they are doing the right thing, not regulators to catch them doing the wrong thing.

**Risk-based approach.** The goal is to reduce the risks associated with fatigue not just reduce fatigue.

#### FATIGUE RISK MANAGEMENT IS A SHARED RESPONSIBILITY

The first step is to create a shared responsibility model under the legislated OH&S requirement to ensure a 'safe system of work'.

**MANAGEMENT** - The employer is responsible for providing staff with a shift system that does not require excessive periods of wakefulness and permits sufficient opportunity to rest and recover. In determining this, the employer must acknowledge normal non-work activities and responsibilities of the employee.

**EMPLOYEE** - The employee is responsible for using their allocated time away from work to obtain an amount of sleep sufficient to reasonably manage the risks of fatigue related accidents and injuries. If this has not been possible, as a condition of employment, the employee must notify their supervisor that they may have had insufficient sleep.

### **3.2 FOUR POSSIBLE ELEMENTS OF A FATIGUE RISK MANAGEMENT PLAN**

- 1.** There should be a written Fatigue Risk Management Plan with defined responsibilities and actions for all 'reasonably foreseeable' situations and an accountable executive.
- 2.** Provision of a competency-based training and education program to ensure that
  - (a). All relevant employees are aware of the organisational fatigue management plan and the risks associated with fatigue for their workplace
  - (b). All relevant employees can identify and manage fatigue-related risk within themselves not sure about these words
  - (c). All employees who are responsible for decisions that impact on the length of wakefulness and/or the opportunity to obtain sufficient sleep know their responsibilities and understand how to develop appropriate risk mitigation strategies.
- 3.** An auditable, quantitative methodology for ensuring that employees
  - (a). Are aware of their responsibilities in respect to fatigue
  - (b). Have been appropriately trained and are competent to make decisions consistent with the fatigue risk management plan
  - (c). Have obtained sufficient sleep to work safely.
  - (d). Are not working after excessive prior wakefulness.
- 4.** There should be an auditable process to monitor the management of fatigue related risk and test compliance to ensure the issue is being managed appropriately.

**INSERT TOOL KIT HERE**

### **3.3 A FATIGUE RISK MANAGEMENT PLAN SHOULD COVER :-**

#### **1. Accountability & Consultation**

Accountability should be established through a committee or pre-existing OHS structure that ensures a consultative process to work to identify, manage and reduce the risks associated with fatigue. A site fatigue risk management plan that is developed, monitored and regularly reviewed is the objective.

#### **2. Information**

It should be a requirement that all employees are familiar with and understand the site's fatigue risk management plan. Copies of the plan should be readily accessible.

#### **2. Training & Education**

All existing employees must undergo a fatigue risk management training programme and satisfactorily complete the required assessments. All new employees must undergo this training within an acceptable period of time after commencing employment.

#### **3. Risk Analysis and Mitigation**

Fatigue risk analyses of work schedules should be undertaken. The methodology employed should be auditable, quantitative and evidence-based and undertaken by a relevant and appropriately trained person. A three-pronged approach using ongoing, prospective and retrospective analysis and action is desirable.

Where there are proposed changes to work practices that may potentially impact on fatigue-related risk, the site committee should engage in prospective fatigue risk analysis. A suggested procedure for implementing risk analysis and mitigation is:-

##### **A). Ongoing**

- a) Identify and group employees based on estimated levels of fatigue-related risk using a quantitative analysis of roster data. Undertaken on a regular basis.
- b) Develop a risk mitigation plan with the goal of developing strategies for reducing the risk of fatigue-related incidents and accidents for at risk individuals. (top #%)
- c) Report regularly to management identifying the 'at risk' employees, the risk reduction strategies and performance-to-date on achieving goals from previous reports

##### **B). Prospective**

- a) Consider the potential impact on fatigue related risk of changes to rosters, staffing levels, operating parameters and changed labour agreements
- b) Include a quantitative analysis of proposed changes using an agreed 'evidence-based' methodology
- c) Report to management and other relevant parties according to legislative requirements

##### **C). Retrospective**

- a) Conduct an appropriate form of post-implementation surveillance to ensure that the prospective analysis of the impact on the risk of a fatigue related incident or accident was representative of the actual changes that took place.

Risk mitigation procedures should be determined through consultation on a site by site basis. Examples could be

- late start – additional sleep time
- early finish
- counter measures such as drink breaks / rest breaks
- alternate tasks
- sick leave

## **5. Incident Reporting**

Organisations should implement a credible reporting process whereby employees can identify occasions where

- a) they failed to obtain sufficient sleep as defined by the organisation's Fatigue Risk Management Plan
- b) on the basis of observed and/or self reported symptoms, they believe they are experiencing a level of incompatibility with operating in a safe and reasonable manner
- c) they believe fatigue may have played a contributory role in an actual or near-miss accident or incident

There should be an appropriate and established mechanism and methodology for reporting, investigating and acting on fatigue related incidents.

An hours of work profile should be included for retrospective reporting of an incident or accident.

## **6. Intervention**

People who are consistently unfit for work and unable to complete the task required of a given job as a result of fatigue, will be dealt with fairly, consistent with other work performance issues. For employees, this may include disciplinary action. For contractors and visitors, this will result in discussions with the site representative and/or contractor Principal and may lead to removal from site.

The employer should recognise that there will be times when people are fatigued as a result of life events (such as illness of a family member or bereavement). It is not the purpose of this plan to provide for disciplinary action in these circumstances.