



# Fatigue management evaluation manual

For the NSW mining and extractives industry



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## **Acknowledgements**

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# Table of contents

<b>Introduction</b> .....	<b>1</b>
<b>Glossary</b> .....	<b>2</b>
<b>Fatigue management evaluation steps</b>	
Step 1 - Plan the evaluation process .....	1
Step 2 - Conduct the fatigue management evaluation.....	2
Step 3 - Review results and report back .....	3
Step 4 - Develop an action plan .....	4
<b>Fatigue management assessment tools</b>	
Tool A - Fatigue management 'at a glance'	
Tool B - Fatigue management quality assurance	
Tool C - Fatigue management quality assurance suggested questions	
Tool D - Fatigue culture maturity evaluation	
Tool E - Fatigue management evaluation report	
<b>Ongoing fatigue assessment quick tools</b>	
Quick tool F - Fatigue likelihood score (FLS)	
Quick tool G - Individual alertness (subjective assessment)	

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# Introduction

## Overview

What are your fatigue management goals? What do you hope to gain from this evaluation?

Fatigue is a recognised hazard in the mining industry. It is important to identify your goals in relation to evaluating and improving your management of fatigue.

This manual aims to provide mines with guidance on conducting a fatigue management evaluation 'in house' (or at another site within their umbrella company).

The goal is to establish a mine's capacity, culture and approach to managing fatigue, consistent with the endorsed guidance resource; *Fatigue Management Plan – A practical guide to developing and implementing a fatigue management plan for the NSW mining and extractives industry 2009* (FMP guide).

## Structure

The manual is structured like an audit but aims to gauge an organisation's systematic capacity and cultural readiness / maturity. It includes:

Tool A	Fatigue management 'at a glance' - provides information about how fatigue management is perceived by different workers / managers.
Tool B	Fatigue management quality assurance – 'maps' the elements of the fatigue management plan against the FMP guide.
Tool C	Fatigue management quality assurance suggested questions - provides guidance on questions that may be useful during a review of the plan.
Tool D	Fatigue culture maturity evaluation, provides an assessment of, where the mine sits on the maturity continuum.
Tool E	Fatigue management evaluation report template - provides a formatted guide for preparing the final evaluation report.
Quick tools F and G	Ongoing fatigue assessment tools that will help determine likely fatigue levels and potential associated impairments.

These combine with a semi-formal interview component of key personnel which is used to qualify and contextualise responses by using tool C. All the tools are straightforward and can be modified to meet the needs of the mine.

<b>Steps</b>	There are 3 core steps (and 1 recommended step) in the fatigue management evaluation process;	
	Step 1	Plan the fatigue management evaluation process
	Step 2	Conduct the evaluation
	Step 3	Review the results and prepare a report
	Step 4	
	Optional step (recommended)	Develop an action plan (not covered in this manual)
<b>What you will need</b>	You will need: <ul style="list-style-type: none"> <li>• A room in which to review documents and interview workers.</li> <li>• Access to any fatigue management documents (such as policies, plans, procedures or standards etc.)</li> <li>• Access to key personnel covered under the fatigue management process (e.g. manager, shift supervisors, contractor supervisor employee and contractor). Look to have a small but representative cross section of people for this.</li> <li>• Copies of the evaluation tools from this manual.</li> </ul>	

## Glossary

<b>Key personnel</b>	Individuals that have crucial positions (roles) and responsibilities in the management of fatigue.
<b>HSC</b>	Health and Safety Committee. A consultative body that represents the workers on health and safety issues. They advise management on health and safety matters in the workplace.
<b>QA</b>	Quality Assurance. Ensuring that your product or process is of the same quality as the benchmark <sup>1</sup> .
<b>Organisation</b>	The workplace where this document is being implemented. It is likely that this will be a mine or quarry of some sort.
<b>Facilitator</b>	A person who is able to keep things on track without over complicating them. This person should be familiar with leading small groups or meetings.

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<sup>1</sup> In this case, the *Fatigue Management Plan – A practical guide to developing and implementing a fatigue management plan for the NSW mining and extractives industry*, 2009.

# Steps

## Fatigue management evaluation steps



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## Step 1

# Plan the fatigue management evaluation process

### **Fatigue management 'at a glance'**

Distribute the fatigue management "at a glance" tool (email or hard copy) and collect the completed assessments several days before the review.

This saves time and aims to get perceptions that are unbiased by the review process. An honest and candid perception of how fatigue is being managed is crucial and rated responses may be influenced by the review questions and interview process.

The aim is to get a reasonable cross-section of the people who work in the organisation. Try to include responses from management, supervisors, employees, contractors and different work groups (e.g. maintenance, production).

### **Fatigue management quality assurance evaluation**

Identify the person who is responsible for the fatigue management plan or who is most familiar with the mines fatigue management approach.

Arrange a suitable time for the review and provide them with a copy of the QA tool.

When agreeing upon a time, date and venue, bear in mind the need to interview several people on the day. Each interview will take approximately 10 minutes.

The review process will take approximately 4 hours and will require access to several **key** personnel (e.g. supervisors)

### **Fatigue culture maturity evaluation**

Identify a representative group of workers/managers such as the HSC, to complete the 'Fatigue culture maturity evaluation'.

Arrange a suitable time and place for the group to meet.

### **Training**

Provide each member of the group with a copy of the tools and instructions for use (preferably beforehand). Discuss to ensure the process is clearly understood.

The evaluation process should take about 1.5 hours.

## Step 2

# Conduct the evaluation

### **Review fatigue 'at a glance'**

Collect the completed 'at a glance' surveys and then calculate average ratings for each element. It may be useful to analyse responses according to the group to which the respondent belongs i.e. worker, supervisor or manager.

Compare the ratings to the maturity scale included on the reverse side of the tool. Consider:

- Is there a different level of performance for different elements?
- Is there a different perception of performance between workers, supervisors and managers?

### **Conduct the fatigue management quality assurance tool (QA tool)**

Discuss expectations and the scope of the evaluation. Explain that the evaluation is a learning opportunity and not a 'witch hunt'. Questions relating to "who was involved in..." or "who is responsible for..." are not meant to assign blame to individuals but rather to identify shortcomings in the current practice, this should be made clear.

### **Flexible delivery**

Review fatigue management documentation using the QA tool as a guide. The QA tool is broken into several sections and these can be completed in succession or with breaks in between. The 9 sections cover the elements typically necessary in a fatigue management plan. Brief notes can be made on the QA tool but more detailed points are best made on separate pages. Throughout the QA process seek to clarify answers to the questions in the tool. Use the rating guide to help rate each question and element.

### **Verification**

To confirm how fatigue is managed 'day to day' in the organisation, ask a small sample of those who work under the fatigue management conditions, a series of questions. Suggested questions are included in the QA tool. These questions are aimed at verifying consistency, understanding and application of the fatigue management approach.

### **Conduct the fatigue culture maturity evaluation**

Assemble a small group of 4 – 6 people. However ensure the group is large enough to provide some representation and small enough to not get 'bogged' down or 'side-tracked', in unfocussed discussion.

Ideally someone who is fully aware of the mine's current fatigue management practice should facilitate this process. It may be best if the facilitator is not from management, but this is not vital.

Each member of the team should fully read each element and then rate the element. This doesn't mean there cannot be discussion on the ratings. Discussion may clarify some points and make for a more accurate assessment.

Each member of the team puts forward their rating; these are totalled and divided by the number of team members. This average (rounded to nearest whole number) is the rating recorded for the mine's fatigue cultural maturity in that element.

## Step 3

# Review the evaluation results and prepare a report

### **Summarise fatigue management quality assurance ratings**

Provide the site an overview of the results of the Fatigue Management Plan evaluation.

Discuss any areas in which the mine feel they could clarify answers and introduce any added documents to help more accurately rate the site.

### **Review the fatigue management 'at a glance' ratings**

Compare the QA results with the fatigue management 'at a glance' ratings.

Bear in mind that it is possible to have differing ratings for perceptions about how fatigue is managed and what exists or is implemented in a documented framework to manage fatigue. This means that however good a fatigue management plan is (or isn't) may be entirely different to how well people believe that plan works.

### **Review the fatigue culture maturity evaluation results**

The fatigue culture maturity ratings provide a representative view of mine's current level of fatigue management maturity.

The results of the evaluation should combine with the results of the QA tool and the fatigue management 'at a glance' tool to form the basis for future planning.

### **Compile and report upon findings**

Using the template provided to help with the format, write up a report for the mine. This should be a straightforward process and the key should be the findings and recommendations sections.

Aim to be positive in your language but do not 'gloss over' faults where they have been identified. This is an opportunity to discover what is and is not working in the sites management of fatigue, so very little is served by painting a flattering picture that does not reflect reality.

## Step 4

# Develop an action plan

### **Communicate the results of evaluation**

Communicate the findings of the evaluation process to all stakeholders. Inform the stakeholders that an action plan will be developed to progress improvements to the management of fatigue.

### **Have a representative working group to develop the action plan**

If a HSC exists, then have them develop the fatigue management action plan. If there is no representative body then one should be formed to carry out this task. The key is to ensure that fair representation is given to all workers.

### **Detail action and assign these to different people**

The specific activities, measures or initiatives in action plan should be developed to address the recommendations and findings in the report.

Responsibilities should be agreed and assigned to the various roles in the organisation. Timeframes should be agreed upon and should be realistic.

Consideration should be given to any training, resources and authorities needed to carry out these actions within the agreed timeframes.

### **Management to ensure that actions are completed by the nominated dates**

Management should ensure that those with responsibilities are able to carry out their identified actions and in the agreed timeframes.

# Tool **A**

## Fatigue management 'at a glance'



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# Fatigue management 'at a glance'

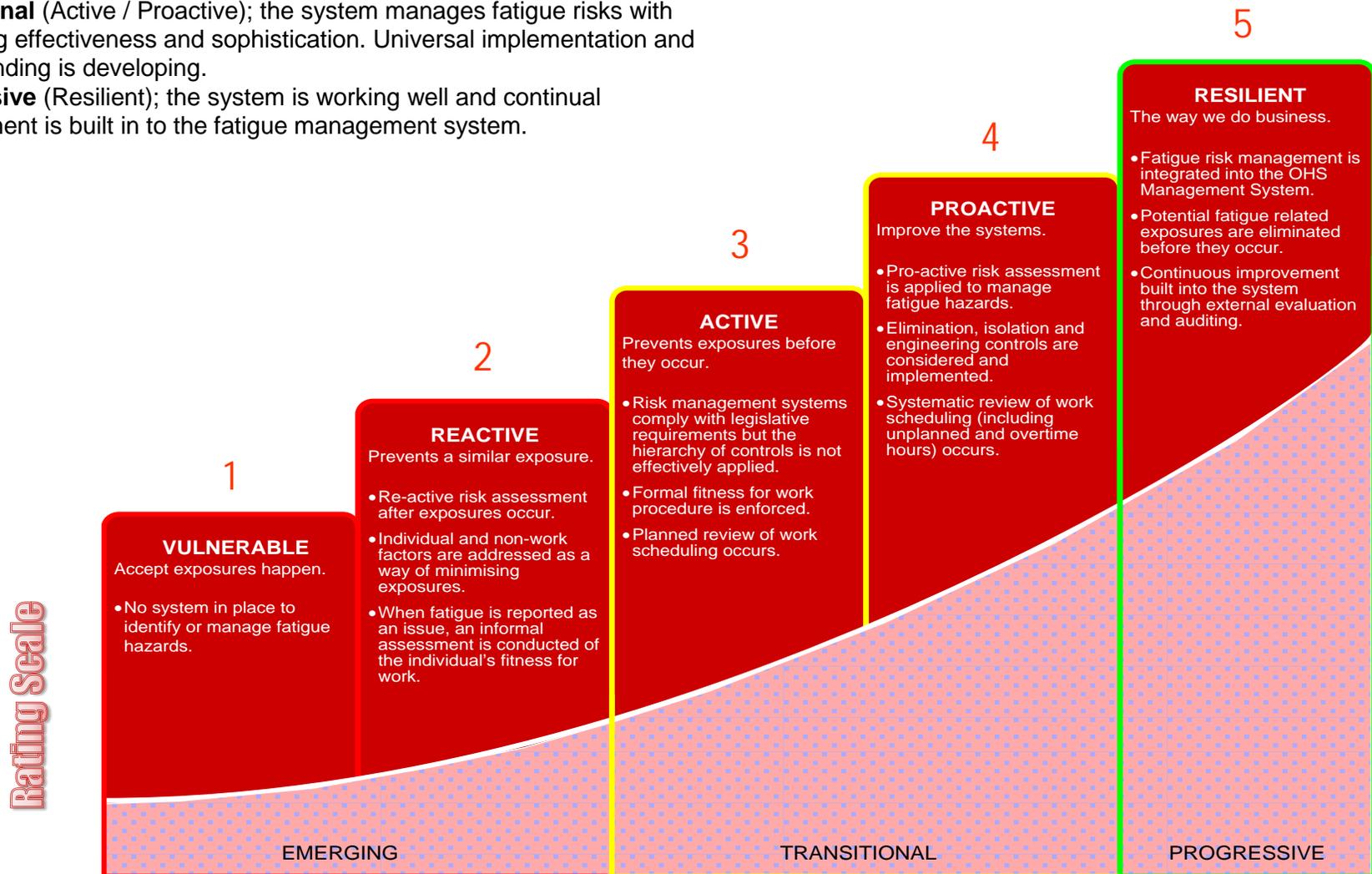


Assessment site:	Participant (section):
	Participant (position):

CONSULTATION, COMMITMENT AND RESPONSIBILITIES	Not begun	Emerging		Transitional		Progressive	Avg.
	0	1	2	3	4	5	
Fatigue management is reflected in the site's health and safety policy or there is a standalone, fatigue management policy.	<input type="checkbox"/>						
The policy has been developed in consultation with employees and contractors and is signed by the most senior appropriate person.	<input type="checkbox"/>						
Fatigue management is seen as a shared responsibility. Everyone has responsibilities attached to their role, under the fatigue management plan.	<input type="checkbox"/>						
Workers are provided training and awareness about the fatigue management plan at induction and then on a periodic refresher basis	<input type="checkbox"/>						
Commitment to fatigue management is demonstrated by having fatigue management procedures (or plan) in place and allocating time, money and training resources.	<input type="checkbox"/>						
RISK MANAGEMENT							
Workers are provided with necessary information about fatigue hazards and controls to enable meaningful participation in fatigue risk management.	<input type="checkbox"/>						
Work-related fatigue risks impacting on the amount and quality of sleep (such as work scheduling and planning) of workers are considered when carrying out fatigue risk management.	<input type="checkbox"/>						
The risk management process considers how mental and physical demands of the job and the work environment contribute/ impact the effects of fatigue.	<input type="checkbox"/>						
Fatigue related risks are controlled according to the "hierarchy of control" and controls are monitored and reviewed for their continued effectiveness.	<input type="checkbox"/>						
The health and safety reporting system allows workers to report themselves or others as fatigued without criticism.	<input type="checkbox"/>						
Fatigue-related information is captured in the incident reporting and investigation process.	<input type="checkbox"/>						
IMPLEMENTATION							
Supervisors identify when fatigue is an issue and initiate immediate planned control measures and record concerns for further review (as required).	<input type="checkbox"/>						
Consideration is given when communicating to those on shift work and contractors to ensure all have been informed on fatigue management issues.	<input type="checkbox"/>						
Unplanned changes to the work schedule (i.e. maintenance, break downs, unexpected shortage of staff) are considered in fatigue risk management planning. for all.	<input type="checkbox"/>						
Planning ensures that safety-critical tasks are not performed at times when fatigue is likely to be higher. If tasks do need to be performed, fatigue related risks have been considered as part of the risk assessment and are reflected in the work instructions and procedures.	<input type="checkbox"/>						
Sites have a system/ methods for monitoring hours of work of workers.	<input type="checkbox"/>						
MONITORING AND REVIEW							
The fatigue management plan and/or procedures are reviewed at regular intervals to ensure the ongoing appropriateness of the controls and management approach	<input type="checkbox"/>						
Review of control measures are undertaken when methods, tasks, equipment, hazards, operations, procedures, rosters or schedules are introduced or the environment changes or there is any indication risks are not being controlled.	<input type="checkbox"/>						

Compare your ratings for each element, against the Culture Maturity Ladder, which is based on the Hudson maturity model<sup>2</sup> below.

- **Emerging** (Vulnerable / Reactive); the fatigue management system isn't effectively managing fatigue risks.
- **Transitional** (Active / Proactive); the system manages fatigue risks with increasing effectiveness and sophistication. Universal implementation and understanding is developing.
- **Progressive** (Resilient); the system is working well and continual improvement is built in to the fatigue management system.



<sup>2</sup> Hudson, P. and Van der Graaf, G. C. 2002: Hearts and Minds: The status after 15 years Research. Society of Petroleum Engineers (SPE 73941) International conference on HSE in Oil and Gas Exploration and production. Kuala Lumpur 20-22 March 2002.

# Tool **B**

## Fatigue management quality assurance (QA)



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# Fatigue management quality assurance

TOOL

B

Mine / Site name:						
Contact:						
Reviewers:					Date:	
<b>Mine (or site) details</b>		Circle the correct answer or one that best represents the MINE (or Site)				
Mine type:	Coal	Metal	Non-Metal	Quarry	Other	
Sub-mine type:	Open Cut		Underground		Processing Plant	
Number of workers (incl. full time contractors):	<10	10-50	50-100	100-500	501-1000	>1000
Does your mine / site have a FMP? (can be an integrated system):	NO		BASIC	ACTIVE	ADVANCED	
Element ranking scale used to rate elements:	Not Started	Vulnerable	Reactive	Active	Proactive	Resilient
	0	1	2	3	4	5
		Emerging		Transitional		progressive

## Fatigue management QA - Rating guidance note

### Stage 1: Emerging - Vulnerable

0. The reviewer is aware that no activity has occurred in this regard
1. The reviewer cannot find much documented evidence, nor can they verify the practice.

**Examples may include;** no recognisable documented elements, employees are by in large unaware of a process.

### Stage 2: Emerging - Reactive

2. The reviewer can find some documented evidence but this is ad hoc and only partially consistent with established practice and guidance material.

**Examples may include;** some elements are substantially documented and others are partially so, employees are unable to explain the process or their role in it.

### Stage 3: Transitional - Active

3. The reviewer can find most of the necessary evidence expected of an organisation meeting their legislated (or stated) obligations. This is confirmed in interviews or by observation. The intent and approach is consistent with the guidance material but implementation not fully achieved.

**Examples may include;** all the elements are in existence and there is documentation for at least a basic plan (policy, consultation, risk management etc.). Several employees can explain their responsibilities and the procedures in the process

### Stage 4: Transitional - Proactive

4. The reviewer can recognise a system and practice that is well planned, fully implemented and maintained.

**Examples may include;** no standard elements of a fatigue management plan appear missing. The plan is comprehensive and well documented. All those asked are aware of the procedures and process involved. All have a clear understanding of their role within the plan. Benchmarking has begun.

### Stage 5: Progressive - Resilient (world leading)

5. The reviewer is unable to identify any shortcomings in the approach undertaken. Monitoring and evaluation review of the plan occur as part of the plan's documented procedure. A documented audit schedule operates and the audit recommendations are built into the plan in a timely manner. Documentation and observed practice are entirely synchronised. Continual improvement is easily demonstrated.

**Examples may include;** the plan is clearly documented, well planned and even innovative. Efforts have been made to draw upon the successes of other industries and learn from their mistakes. The employees and contractors are active participants in the ongoing development and maintenance of the plan.

## Fatigue Policy Element

Policy covering a single issue like fatigue, should be simple, straightforward and about a page in length.

Criteria (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
1. Does the organisation have a fatigue management plan?	YES / NO	<ul style="list-style-type: none"> <li>▪ A document that specifies the management of fatigue.</li> <li>▪ A date of commencement (and possibly a review date).</li> <li>▪ A goal or aim. This could be “we aim to manage fatigue risks...” or “we are committed to reducing the impacts of fatigue...”</li> <li>▪ A statement confirming that consultation was undertaken.</li> <li>▪ A statement indicating who the policy is intending to cover (workers, everyone etc.)</li> <li>▪ A mention of the industry guidance or legislation that the policy aims to reflect.</li> <li>▪ A brief and broad outline of responsibilities for those covered by the policy (Managers will ensure training...etc.).</li> <li>▪ A statement confirming the risk management of the fatigue.</li> <li>▪ A signature by the highest position involved with running the organisations day to day activities*.</li> </ul> <p>* This could be a CEO or GM if it is a corporate issued (and developed) policy or it could be an operations or mine manager at a site level.</p> <p><b>Note:</b> Some policy documents are also co-signed by an employee representative, to indicate that an agreed consultation process occurred in the development of the policy.</p>
2. How is fatigue management reflected in policy? <ul style="list-style-type: none"> <li>• When was this policy developed?</li> <li>• Who was consulted in the development of the policy?</li> <li>• Are roles and responsibilities broadly identified in the policy?</li> <li>• Who was the most senior signatory to the policy?</li> <li>• Is the legislation or guidance that the policy addresses, referenced?</li> <li>• Who is covered under the fatigue management policy?</li> <li>• How are the needs of contractors, young workers and older workers considered in the policy?</li> <li>• How often is this policy reviewed?</li> </ul> <p>To what extent are these elements covered in the fatigue management policy? Refer also to the <b>rating guidance note</b> (previous page).</p>	0 1 2 3 4 5	
<b>NOW rate the POLICY ELEMENT</b>		<b>TOTAL</b>
		<b>MEAN / AVERAGE RATING</b>

## Fatigue Consultation Element

Under WHS laws, the requirement to consult is a fundamental obligation meant to ensure that WHS information is shared with workers so that they are provided with the opportunity to respond and contribute to the WHS issues that affect them.

Criteria (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
3. What consultation occurred in the development of the fatigue management policy? <ul style="list-style-type: none"> <li>• What input did workers have in the process?</li> <li>• What section of the induction is devoted to fatigue hazard awareness?</li> </ul>	0 1 2 3 4 5	<ul style="list-style-type: none"> <li>▪ A statement indicating the nature of consultation that occurred in the development of the document. This can be a simple statement noting who, what and when.</li> <li>▪ There should be some indication as to what work groups were involved in the consultation process. This should be as practical a representative sample of the workplace (of those covered by the plan) as possible. This is often a Health and Safety Representative (HSR) or a Health and Safety committee (HSC). Alternatively, it could be any other consultation arrangement agreed to by the workers and management. This should also include contractors, if it is the intention that they also work under provisions of the plan.</li> <li>▪ Evidence that all work groups have had representation in the consultation process. Look for minutes of a meeting, who attended and who do these people represent?</li> <li>▪ An outline of how ongoing changes to the plan are consulted upon. Is there a formal mechanism or is it added to Ad Hoc?</li> <li>▪ An outline of how promotion and awareness of the plan is ensured (e.g. In house training sessions, induction, intranet, toolbox talks etc.)</li> <li>▪ An outline of the consultation process involved in the risk management fatigue. When did it take place? How often is it re-done?</li> </ul>
4. How is this plan promoted to those that it covers? (Induction, via the intranet???)	0 1 2 3 4 5	
5. What fatigue management awareness training is given to employees?	0 1 2 3 4 5	
6. Who is involved in the risk management (assessment and control) of fatigue risks?	0 1 2 3 4 5	
7. How are stakeholders given the opportunity to provide ongoing input to improve the plan? <ul style="list-style-type: none"> <li>• How is feedback on fatigue management monitored, to ensure changes to the plan are made?</li> </ul>	0 1 2 3 4 5	
<b>NOW rate the ELEMENT</b>		<b>TOTAL</b>
		<b>MEAN / AVERAGE RATING</b>

## Fatigue Roles and Responsibilities Element

Clear responsibilities assigned to the various roles within the organisation are crucial. Having set accountabilities under the plan, helps support those who are required to make decisions or carry out actions. It helps ensure that each role is consistent in the exercise of these responsibilities.

Criteria (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
8. Are there clear responsibilities for each role (including managers) under the fatigue management plan?	0 1 2 3 4 5	<ul style="list-style-type: none"> <li>▪ A section outlining the responsibilities of all those working under the plan, according to their roles within the organisation.</li> <li>▪ That agreed responsibilities are communicated to each role. How does this ensured?</li> <li>▪ These responsibilities should be detailed enough provide clear accountabilities (for fatigue management) of everyone involved. If they are too simple or lack detail then it is likely one person will be left shouldering the most of the responsibilities.</li> <li>▪ These responsibilities should cover all those with obligations under the plan. All workers and others should have identified responsibilities (however great or small) documented. This could be as simple as “comply with the instructions of an authorised person” or “report a fatigue related incident.”</li> <li>▪ These roles are sufficiently authorised and resourced to enable the proper exercise of their responsibilities. No one can be expected to carry out a function if they do not have the capacity to do so. Look for confirmation in the interviews.</li> </ul> <p>That appropriate provisions are made to ensure roles are competently trained to be able to carry out their responsibilities. This would usually involve instruction or training. Look for training records; who attended and when?</p>
9. Who was involved with the assignment of responsibilities to the various roles within the plan? <ul style="list-style-type: none"> <li>▪ How are these responsibilities communicated to them?</li> <li>▪ How do you ensure that all workers have been fairly represented in this process?</li> </ul>	0 1 2 3 4 5	
10. What training has been provided to those with specific responsibilities under the plan (including contractors)?	0 1 2 3 4 5	
11. How are those in the workplace assured of the resources and authority to carry out their responsibilities effectively?	0 1 2 3 4 5	
<b>NOW rate the ELEMENT</b>		<b>TOTAL</b>
		<b>MEAN / AVERAGE RATING</b>

## Risk Management Element

Risk management is a necessary component in all health and safety management plans (or systems). Many of the 'day to day' activities or procedures of a plan will be related to the risk management element.

Criteria (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
12. Show how considerations are given to the following, during the risk assessment and control of fatigue hazards; <ul style="list-style-type: none"> <li>▪ The mental / physical demands of the work</li> <li>▪ Work scheduling (night work)</li> <li>▪ Work scheduling (shift work)</li> <li>▪ Work scheduling (hours worked)</li> <li>▪ Commute times</li> <li>▪ Work environment conditions</li> <li>▪ Individual and non-work factors</li> </ul>	0 1 2 3 4 5	<ul style="list-style-type: none"> <li>▪ That, workers were represented and consulted in the risk assessment of fatigue risks (who and when).</li> <li>▪ That, those involved have an understanding of fatigue risk factors (training records).</li> <li>▪ Considerations in the plan were given to the 7 key risk areas (as outlined in the guidance material*);               <ul style="list-style-type: none"> <li>– The mental and physical demands of the work</li> <li>– Work scheduling (night work)</li> <li>– Work scheduling (shift work)</li> <li>– Work scheduling (hours worked)</li> <li>– Commute times</li> <li>– Work environment conditions</li> <li>– Individual and non-work factors</li> </ul> </li> <li>▪ Details of how each of the 7 key risk areas has been considered (what planning and preparation has been done) in the organisation' assessment of fatigue.</li> <li>▪ Details of how the hierarchy of controls have been applied to each of the 7 key risk areas.</li> <li>▪ Details of site specific risks (FIFO, aging workforce etc.) have been considered and that the procedures managing these issues are outlined.</li> </ul> <p>Procedures or processes are in place that addresses potential fatigue risks as a result of unplanned or emergency works.</p>
13. How are the hierarchy of controls considered when monitoring the ongoing effectiveness of those control?	0 1 2 3 4 5	
14. What considerations are given to risks associated with planned and unplanned (emergency or other) works?	0 1 2 3 4 5	
15. Has current industry data / research (or use of experts) been referred to in the management of fatigue hazards?	0 1 2 3 4 5	
16. Is fatigue an item on the organisation' hazards or risk register?	0 1 2 3 4 5	
17. How is the competence of those involved in the fatigue risk management process verified?	0 1 2 3 4 5	
<b>NOW rate the ELEMENT</b>		
		<b>MEAN / AVERAGE RATING</b>

## Fatigue Management Procedures Element

In order to demonstrate transparency and consistency organisations need to document the management approach they have taken on any given issue. The processes or procedures necessary in a plan will be dependent on the complexity of their approach. Generally the more serious or important the issue being managed, the more procedures and processes that will accompany it. All procedures should be able to be verified. Also, procedures should be developed to reflect legislative obligations or industry standards (or guidance.)

CRITERIA (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
18. What is the procedure for reporting fatigue? (self or other) <ul style="list-style-type: none"> <li>▪ How does this procedure apply to other shifts, workers and sites?</li> </ul>	0 1 2 3 4 5	A statement of maximum hours and minimum rest periods between shifts and a process for managing these. This could be a short and simple statement.  A procedure to assess fatigue levels in individuals (when is this assessment 'triggered'?)
19. What is the procedure for assessing fatigue in workers? (incl. supervisors and management) <ul style="list-style-type: none"> <li>▪ Who conducts this assessment of fatigue?</li> </ul>	0 1 2 3 4 5	A process to be followed when someone is assessed as fatigued. Consideration should be given to who is required to make this assessment and any subsequent decisions stemming from it. (Who and what?)
20. What is the process for managing a fatigued worker? In this process are considerations are given to; <ul style="list-style-type: none"> <li>▪ Cessation of safety critical tasks by a fatigued worker.</li> <li>▪ The provision of onsite or nearby accommodation.</li> <li>▪ The provision of alternative means of transport home at the end of shift.</li> <li>▪ The provision of a rest area for 'napping'.</li> </ul>	0 1 2 3 4 5	A process for verifying the amount of hours worked. This is particularly important for tracking contractor hours of work. This could be a swipe card system or a signed declaration and phone confirmation to a contractor's office to check etc.  A process to identify training requirements (training needs analysis). This is particularly important for those responsible for the risk management process.  A process to identify how fatigue risks, control effectiveness, fatigue reports or incidents are monitored. Who does it, how and when? Is anyone else involved? What is done when something is found to be a problem? Who is this reported to?  A process to control fatigue risks associated with overtime. Who checks?
<b>NOW rate the ELEMENT</b>		<b>SUB TOTAL</b>

## Fatigue Management Procedures Element (cont.)

CRITERIA (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
<p>21. What is the procedure for recording the amount of hours worked by individual workers? (Incl. management)</p> <ul style="list-style-type: none"> <li>▪ What procedure captures the hours worked by contract / casual workers?</li> <li>▪ How does the plan capture workers hours between all sites of the company?</li> <li>▪ How does the overtime procedure (planned or otherwise) control further work hours by already identified high risk workers?</li> </ul>	0 1 2 3 4 5	<ul style="list-style-type: none"> <li>▪ A process to report fatigue. Is there a form? Look for completed copies.</li> <li>▪ A process to investigate fatigue as a contributor in incidents. What questions are asked? How are answers tracked to identify trends?</li> </ul> <p>At times, organisations will develop procedures or entire processes, that are effective in managing as an issue but do so without documenting them.</p> <p>Sometimes these procedures are used widely across the organisation and at other times they may only be used by one or two supervisors. If this appears to be the case, suggest that these informal or ‘Ad Hoc’ actions, be discussed and if found to be effective, formalised and documented.</p>
<p>22. How is fatigue explored as a potential contributor during an incident investigation?</p>	0 1 2 3 4 5	<p>In this way good ideas that are developed can add to the plan. This approach can also assist in a consistent and fair application of actions or decisions.</p>
<p>23. What situation ‘triggers’ whether fatigue is considered as a potential contributor to an incident?</p> <ul style="list-style-type: none"> <li>▪ Who is involved in this determination decision?</li> </ul>	0 1 2 3 4 5	
<p><b>NOW rate the ELEMENT (Include rating from previous page)</b></p>		<p><b>TOTAL (include subtotal)</b></p>
		<p><b>MEAN / AVERAGE RATING</b></p>

## Fatigue Implementation Element

Implementation can be a difficult thing to establish simply by looking at a document (the plan). An interview of key personnel (e.g. supervisors) will assist in identifying shortcomings in the implementation of a plan.

CRITERIA (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
24. How is the plan (and any changes to it) communicated? <ul style="list-style-type: none"> <li>▪ How do management model, the fatigue management procedures and policies for all workers to witness?</li> <li>▪ How are the needs of employees (language, night shift, remote location) considered in this communication approach?</li> </ul>	0 1 2 3 4 5	Focus your search on document references to fatigue and fatigue management. When reviewing the implementation of the plan, look for evidence of the following <b>types</b> of documents (as a minimum); <ul style="list-style-type: none"> <li>▪ Meeting minutes (HSEC or toolbox talks)</li> <li>▪ Training records.</li> <li>▪ Hazard reports.</li> <li>▪ Incident reports.</li> <li>▪ Investigation reports.</li> <li>▪ Risk assessments (SWMS and JSA's)</li> <li>▪ Audit reports.</li> <li>▪ Corrective Action plans.</li> <li>▪ Annual reports.</li> </ul>
25. How does the plan ensure the proper training is given to all those required to work under it? Does this training include; <ul style="list-style-type: none"> <li>▪ The nature of fatigue</li> <li>▪ The warning signals of fatigue</li> <li>▪ Possible effects of fatigue</li> <li>▪ Factors that ↑ or ↓ the likelihood or effects of fatigue</li> <li>▪ Control measures</li> </ul>	0 1 2 3 4 5	
<b>NOW rate the ELEMENT</b>		<b>SUB TOTAL</b>

## Fatigue Implementation Element (cont.)

Implementation can be a difficult thing to establish simply by looking at a document (the plan). An interview of key personnel (e.g. supervisors) will assist in identifying shortcomings in the implementation of a plan.

CRITERIA (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
26. How does the plan ensure appropriate supervision so that contractors are not carrying out safety critical activities at times of high fatigue risk?	0 1 2 3 4 5	Focus your search on document references to fatigue and fatigue management. When reviewing the implementation of the plan, look for evidence of the following <b>types</b> of documents (as a minimum); <ul style="list-style-type: none"> <li>▪ Meeting minutes (HSEC or toolbox talks)</li> <li>▪ Training records.</li> <li>▪ Hazard reports.</li> <li>▪ Incident reports.</li> <li>▪ Investigation reports.</li> <li>▪ Risk assessments (SWMS and JSA's)</li> <li>▪ Audit reports.</li> <li>▪ Corrective Action plans.</li> </ul> Annual reports.
27. In what ways are supervisors supported if they take measures to control fatigue risks, for those they identify as fatigued?	0 1 2 3 4 5	
28. How does the plan ensure that no one is discriminated on the basis of self reporting fatigue?	0 1 2 3 4 5	
29. How does the employee assistance program support fatigue management?	0 1 2 3 4 5	
<b>NOW rate the ELEMENT (Include rating from previous page)</b>		<b>TOTAL (include subtotal)</b>
		<b>MEAN / AVERAGE RATING</b>

## Fatigue Monitoring Element

Monitoring the continued effectiveness of your planned efforts is not only good practice but is a requirement in the proper exercise of due diligence. Are “our fatigue risk controls working?” or “Is anyone reporting fatigue?” are important inquiries that should be routinely followed to ensure fatigue hazards are being managed.

CRITERIA (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
30. What performance indicators exist in the plan for the management of fatigue?	0 1 2 3 4 5	<ul style="list-style-type: none"> <li>▪ Are leading indicators for fatigue management part of the plan?</li> <li>▪ How many people have self-reported fatigue or are being assessed as fatigued? Is this increasing/decreasing? What actions have been identified to address any issues?</li> <li>▪ Have any fatigue surveys been conducted to identify issues in the workplace?</li> <li>▪ How many incidents indicate fatigue as a potential factor?</li> <li>▪ Has an independent audit been carried out on the plan? What were the results? What recommendations were made?</li> <li>▪ Whether a review has taken place. If so, by whom and when? What, if anything, was the result of the review?</li> <li>▪ What other versions exist of the plan? (This helps demonstrate a continual improvement cycle).</li> </ul> <p>Action plans that show fatigue as an issue that has been considered. Has a timeframe been set or met?</p>
31. How do health assessment results, help identify those at risk of developing the longer term health consequences of fatigue?	0 1 2 3 4 5	
32. Is the sleep opportunity of workers factored into the monitoring of the plan?	0 1 2 3 4 5	
33. What is the audit schedule (internal and/or or external) for the plan? <ul style="list-style-type: none"> <li>▪ How are the audit results documented?</li> <li>▪ How are corrective actions taken in line with the audit results?</li> </ul>	0 1 2 3 4 5	
34. How does the plan ensure that fatigue is identified as it emerges as an issue?	0 1 2 3 4 5	
<b>NOW rate the ELEMENT</b>		<b>TOTAL</b>
		<b>MEAN / AVERAGE RATING</b>

## Fatigue Review Element

Reviews of results, problems found, successes achieved, costs, initiatives etc. are a process that provides management direction to lead changes to a plan or system. This is often done yearly but may (or may not) include all the management plans operating in an organisation (e.g. noise management plan, dust management plan health management plan etc.)

CRITERIA (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
35. Is there a periodic review by management, of the effectiveness and suitability of the fatigue management plan? <ul style="list-style-type: none"> <li>▪ Who is involved in the review process?</li> <li>▪ How are the reviews documented?</li> </ul>	0 1 2 3 4 5	<ul style="list-style-type: none"> <li>▪ Are leading indicators for fatigue management part of the plan?</li> <li>▪ How many people have self-reported fatigue or are being assessed as fatigued? Is this increasing/decreasing? What actions have been identified to address any issues?</li> <li>▪ Have any fatigue surveys been conducted to identify issues in the workplace?</li> <li>▪ How many incidents indicate fatigue as a potential factor?</li> <li>▪ Has an independent audit been carried out on the plan? What were the results? What recommendations were made?</li> <li>▪ Whether a review has taken place. If so, by whom and when? What, if anything, was the result of the review?</li> <li>▪ What other versions exist of the plan? (This helps demonstrate a continual improvement cycle).</li> </ul> <p>Action plans that show fatigue as an issue that has been considered. Has a timeframe been set or met?</p>
36. What procedure determines when a review occurs?	0 1 2 3 4 5	
37. How do the results of reviews lead to documented changes to the plan? (when appropriate)	0 1 2 3 4 5	
38. How do changes to the plan ensure a continual improvement cycle? <ul style="list-style-type: none"> <li>• Who ensures that these changes occur and that they occur within an agreed timeframe?</li> </ul>	0 1 2 3 4 5	
<b>NOW rate the ELEMENT</b>		<b>TOTAL</b>
		<b>MEAN / AVERAGE RATING</b>

## Fatigue Document Control Element

Document control is important in ensuring clarity. It is important that everyone is 'singing from the same songbook'. Without this consistency of document control, then the potential for inappropriate actions or unfair decisions are more likely to occur.

Document control is important also in establishing that the organisation is not sending out mixed messages to the people expected to implement and work under the plan. The process should aim also, to identify (and remove from circulation) out dated or superseded copies of plans or procedures.

CRITERIA (YOU ASK)	Rating / Answer	Evidence / Guidance (LOOK FOR)
39. Who is responsible for the storage and maintenance of the FMP records? <ul style="list-style-type: none"> <li>▪ Are FMP records stored securely, so as to be in accordance with the Privacy and Personal Information Act 1998?</li> <li>▪ How long is fatigue risk assessment documentation maintained?</li> <li>▪ How does the plan ensure ongoing internal auditing to verify the proper security of the records?</li> </ul>	0 1 2 3 4 5	<ul style="list-style-type: none"> <li>▪ What version of the document is being followed?</li> <li>▪ Where does this version reside?</li> <li>▪ Who is responsible for ensuring that only the current version of the plan is being referenced?</li> <li>▪ Where are fatigue related documents (containing potentially sensitive information) kept? Who has access to them?</li> <li>▪ Are there any older copies (of procedures or policies) in circulation on the site?</li> <li>▪ How are new versions promoted to users?</li> <li>▪ Is data from fatigue reports, breaches of procedure etc. being analysed for trends?</li> <li>▪ If the data is being analysed what actions have been taken from the conclusions drawn?</li> </ul> <p>This may help head off a potential fatigue management problem, before it becomes a serious incident.</p>
40. Is there a procedure for the ongoing analysis of records and data to ensure improvements to the plan?	0 1 2 3 4 5	
41. What analysis procedure of records data, is performed to identify trends?	0 1 2 3 4 5	
<b>NOW rate the ELEMENT</b>		<b>TOTAL</b>
		<b>MEAN / AVERAGE RATING</b>

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# Fatigue management quality assurance (QA) - suggested questions

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# Fatigue management QA

## Suggested questions

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The “suggested questions” represent a starting point, to the sorts of questions that may be useful during the QA review. Feel free to ask follow-up questions, to clarify answers given.

The aim of this process is to discover what the key roles know of how fatigue is being managed on this site. The process should also aim to determine if there is a formal procedure which is part of a plan or an informal process operating. It may help by indicating that there is no procedure or process at all and this information can be useful when a review of the current fatigue management plan occurs.

Differences in what is written down in a fatigue management plan and what people actually know or do, when managing fatigue, should be noted and reported upon. In order to maintain ‘fairness’, there needs to be consistency in how people are treated when they are fatigued or at risk of developing it.

The response to situations which arise when workers report fatigue or the risks associated with fatigue should be explored. If this response is not documented (and understood) then supervisors and managers may be inconsistent in their actions, may not act appropriately, in a timely manner or perhaps not at all.

# Managers

1. What do you know of fatigue and how it is managed here on site?
2. Are you aware if your site has a fatigue management policy?
3. Broadly, what is in it?
4. Does your site have a fatigue management plan (FMP)?
5. Who was involved in its development?
6. What responsibilities do you have under this fatigue management plan?
7. How is fatigue assessed in individuals (including managers and supervisors) at this site?
8. What guides the process that is followed when someone is assessed as fatigued?
9. How does the plan ensure that individuals are not unfairly blamed for self-reporting their fatigue?
10. What factors were considered in the risk assessment of fatigue hazards in the FMP?
11. What controls are you aware of that exist as a result of the risk assessment process?
12. Who was involved in the risk assessment of fatigue at this site?
13. What training or understanding do you expect those involved in this process, to have?
14. How do you ensure that the FMP (or policy) is promoted and understood by those it covers?
15. How does the plan ensure that contractors are sufficiently represented and supervised in their management of fatigue?
16. How do you monitor the progress / success / effectiveness of the fatigue management plan?
17. How is fatigue identified as a potential contributing factor in the incident reporting process?

# Supervisors

1. What do you know of fatigue and how it is managed here on site?
2. Are you aware if your site has a fatigue management policy?
3. Does your site have a fatigue management plan (FMP)?
4. Who was involved in its development?
5. What responsibilities do you have under this fatigue management plan?
6. How is fatigue assessed in individuals at this site?
7. Have you ever assessed anyone as being fatigued?
8. What guides the process that is followed when someone is assessed as fatigued?
9. How does the plan ensure that a consistent approach is adopted for those that report or are assessed as fatigued?
10. How are you assured of management support when you make a decision regarding fatigue management reporting or assessment?
11. Were you involved in the risk assessment of fatigue at this site?
12. What controls are you aware of that exist as a result of the risk assessment process?
13. What training or understanding do you have to be able to contribute to this process?
14. How do you ensure that the FMP (or policy) is promoted and understood by those it covers, particularly contractors?
15. How does the plan ensure that contractors are sufficiently represented and supervised in their management of fatigue?
16. What monitoring of the progress / success / effectiveness of the fatigue management plan are you aware of?
17. From your knowledge, how often has fatigue been identified as a potential contributing factor in an incident report?

# Workers (including contractors)

1. What do you know of how fatigue is managed here on site?
2. Are you aware if the site has a fatigue management policy or plan?
3. Were you involved in its development?
4. What responsibilities do you have under this fatigue management plan?
5. What training has the organisation given you regarding fatigue management?
6. How is fatigue assessed in individuals at this site?
7. Have you ever been assessed as being fatigued?
8. Are you aware of anyone having been assessed as fatigued?
9. What happens when someone is assessed as fatigued?
10. Have you ever self-reported as being fatigued? What actions were followed in this case?
11. How can you be assured of 'fairness' if you self-report as being fatigued?
12. Have you ever been asked to be involved in the risk assessment of fatigue at this site?
13. Are you aware of any risk controls for fatigue?
14. What training or understanding do you have to be able to contribute to the risk assessment process?
15. Do you feel that contractors get the same level of support when reporting fatigue or being assessed under the plan, as employees of the organisation?
16. How does this support or expectation differ?
17. Do you feel contractor fatigue is being managed effectively?
18. What is the biggest issue surrounding fatigue at this site?
19. Is this issue being managed well or at all?

# Fatigue culture maturity evaluation

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# Fatigue culture maturity evaluation

## Instructions for use

The fatigue management evaluation sheets contain rating criteria in the form of 'tracking' statements. These statements look at 5 different maturity positions around each of 6 fatigue culture elements.

These elements include;

1. Fatigue Management Policy, Commitment and Roles and Responsibilities
2. Fatigue Management Consultation and Participation
3. Fatigue Risk Management
4. Fatigue Management Training and Competence
5. Fatigue Management Supervision
6. Fatigue Management Evaluation and Review

The 'tracking' statements are rated from 1 to 5. Select the 5 highest scoring statements that best reflect PCBU's capacity or approach in that element.

Each group of statements represent a growing maturity in the element. Read the whole of the element before selecting the 5 that best represent the PCBU's performance.

Statements within each group address different aspects of the element. Try to select statements that cover the full range of factors. Select only those statements that accurately reflect the PCBU's performance but select the 5 highest ratings, of those applicable.

The 5 ratings are totalled and divided by 5 to give an average, from 1 to 5. This is the PCBU's rating, for this fatigue culture element.

The completed evaluation will provide an assessment of the PCBU's fatigue cultural maturity across the six key elements above.

## Rating table

Rating	TRACKING DESCRIPTOR
1	The PCBU is at an emerging stage of their maturity. They may be characterised as vulnerable in this element
2	The PCBU is still at an emerging stage and while advancing they may be considered reactive in this element
3	The PCBU is in a transitional stage of their maturity. They are likely to be characterised as active in this element
4	The PCBU can be seen to be at the latter stages of transitional maturity. They may be characterised as being proactive in this element
5	The PCBU is considered to be progressive in their maturity. Organisations operating at this level are generally demonstrating best practice management of fatigue

The aim of the culture maturity evaluation tool is to assist PCBU's consolidate activities and actions that consolidate their current level of fatigue management maturity before attempting to progress to the next level.

As each of the elements is separately rated, it is also possible that different maturity levels will be attributed to the various elements. For example, a PCBU may assess their maturity in the '*Fatigue management consultation and participation*' element, at the emerging level (1 or 2) and at the same time assess their '*Fatigue risk management*' element as transitional (3 or 4).

What does this all mean? It could be that workers lack the required understanding or training to be able to participate in a meaningful way in the fatigue risk management process.

If PCBU's find themselves at different levels it is suggested that they identify opportunities to progress those levels that are 'lagging'. In this way, a PCBU's fatigue management maturity foundation is clear and uniform before attempting to progress to the next level of maturity.

For further guidance refer to the Health Indices Fact Sheet '*Fatigue management*'.

FATIGUE CULTURE MATURITY ELEMENTS		Rating
1.	Fatigue Management Policy, Commitment and Roles and Responsibilities	
2.	Fatigue Management Consultation and Participation	
3.	Fatigue Risk Management	
4.	Fatigue Management Training and Competence	
5.	Fatigue Management Supervision	
6.	Fatigue Management Evaluation and Review	

Not started	Vulnerable	Reactive	Active	Proactive	Resilient
0	1	2	3	4	5
	Emerging		Transitional		Progressive
	At this level fatigue management is characterised by individual responsibility under a 'fit for work' policy. To develop a compliant approach, raise awareness of the 7 hazard factors listed in the FMP guide and apply a risk management approach to fatigue management. PCBU's should concentrate on consultation, awareness training and a policy of shared responsibility.		At this level the shared responsibility towards fatigue management is acknowledged. To consolidate performance at this level, focus on a 'just culture' and a consistent and fair supervisory response to managing workers who report fatigue. PCBU's could concentrate on monitoring actual hours of work and exploring the possible contribution of fatigue to incidents. These could be used as lead performance indicators.		This level is characterised by a fully resourced shared approach to fatigue management. To consolidate performance at this level, concentrate on implementing a continual improvement strategy including a review of fatigue lead performance indicators Consider identifying benchmarking partners to drive continual improvement.

## FATIGUE MANAGEMENT POLICY, COMMITMENT and ROLES & RESPONSIBILITIES

- Does the organisation have a written fatigue management policy?
- How is commitment to managing fatigue demonstrated?
- Are roles and Responsibilities for managing fatigue clearly communicated at all levels?

Read **all** statements before beginning. Check the **5 highest** rated statements which best reflect your PCBU's capacity in this element. You should try to include statements that talk about the existence of a policy, how fatigue is to be managed, the allocation of responsibilities and resources around fatigue management.

Add these up and divide your total by **5** (to get an **average**). This **average** indicates your PCBU's maturity in this element.

Maturity	Criteria	Rating
<b>Emerging</b> A focus towards implementing a compliant approach by addressing individual responsibility for 'fit for work'.	There is no clear policy position for managing fatigue.	0
	Fatigue is addressed in the OHS policy, under 'fit for work' provisions.	1
	There is an expectation that all workers will obtain enough sleep during breaks and be fit for work. Implementation is ad hoc.	1
	There is no common understanding on what needs to be done to manage fatigue or whose responsibility it is.	1
	Responsibility for fatigue management typically rests with the Health and or RTW coordinator (1) Responsibilities within the line management structure are ad hoc and not systematically outlined (2).	1-2
	There is a tailored 'fit for work' program which addresses fatigue and lifestyle.	2
<b>Transitional</b> An acknowledgement of a shared responsibility and risk management approach to fatigue management.	There is a clear policy position for managing fatigue at an organisational level (2) which may or may not recognise a shared responsibility towards fatigue management (3).	2-3
	The policy considers risks in its rostering and 'fit for work' planning.	3
	The policy includes a 'safe home' statement.	3
	The policy covers all PCBU's and their workers but may not clearly define and document specific responsibilities to their roles.	4
	The policy commits to resourcing for lifestyle education and awareness and for raising risk awareness at an organisation and individual level.	4
<b>Progressive</b> This stage is characterised by a commitment to fully resourcing a joint approach to fatigue management. Continual improvement is the goal.	There is a stand-alone fatigue management policy which commits to shared responsibility (4), continual improvement (5).	4-5
	The policy commits to a risk management and a 'just culture' and provides confidence when reporting incidents, insufficient sleep or individual concerns.	5
	The safe home policy inclusion is understood to reflect a corporate, community and individual concern and commitment.	5
	The policy commits to ensuring that there is resources and opportunity for supervisory / management skills training in fatigue monitoring.	5
	Roles and responsibilities towards improved fatigue management are clear, demonstrated across all PCBU and workers.	5

## FATIGUE MANAGEMENT CONSULTATION and PARTICIPATION

- Who was consulted with, in the development of the fatigue management plan?
- How is continued participation of fatigue management ensured?

Read **all** statements before beginning. Check the **5 highest** rated statements which best reflect your PCBU's capacity in this element. You should try to include statements about how consultation occurs, information or training provided to assist, groups involved, the range of issues covered and participation in evaluation.

Divide your total by **5** (to get an average).

This average indicates your PCBU's maturity in this element.

Maturity	Criteria	Rating
<p style="text-align: center;"><b>Emerging</b></p> <p>A focus towards implementing a compliant approach by addressing individual responsibility for 'fit for work'.</p>	Consultation on fatigue is done in an ad hoc / informal manner.	0
	Fatigue management policy and procedures were developed at head office (corporate level) or by management representative (site level) without consultation or participation by workers.	1
	Workers do not have a sufficient understanding of fatigue to enable meaningful consultation.	1
	Workers are not given fatigue specific information (awareness, risks etc.) to enable them to consult or participate in any meaningful way, in the development and implementation of the fatigue policy and procedures.	1
	There is some worker representation in the consultation process on fatigue.	2
	Consultation on fatigue management is limited to policy and does not include the development of evaluation and monitoring procedures in plan.	2
<p style="text-align: center;"><b>Transitional</b></p> <p>An acknowledgement of a shared responsibility and risk management approach to fatigue management.</p>	Consultation on improved fatigue management has been documented (2) and some consultation can be demonstrated on policy and roster development. (3).	2-3
	An understanding of the causes and consequences of fatigue has been provided and enables a broad cross section of stakeholders to participate in the process.	3
	Work groups potentially exposed to fatigue are consulted in a systematic manner.	3
	Fatigue risk management training has been provided to some workers and managers and enables meaningful contribution to the ongoing development and maintenance of the plan.	4
	The processes that exist to evaluate and monitor the performance of the plan allow for stakeholder participation.	4
<p style="text-align: center;"><b>Progressive</b></p> <p>This stage is characterised by a commitment to fully resourcing a joint approach to fatigue management. Continual improvement is the goal.</p>	The Fatigue management plan has grown from careful and considered consultation (4) which has included all vested stakeholders, in an ongoing and meaningful way, this is easily demonstrated (5).	4-5
	Worker and managers have a good understanding of fatigue management and consultation is carried out by a number of informed and trained personnel, led by senior management.	5
	All relevant work groups are consulted when fatigue risks are identified, controls are implemented, work procedures change or following an incident.	5
	A mature, just culture exists to encourage ongoing participation in improved fatigue management.	5
	Clearly defined and enacted shared responsibilities enable all work groups to participate in evaluating and monitoring.	5

## FATIGUE RISK MANAGEMENT

- Are procedures / processes implemented in the plan that ensures that all fatigue hazard factors are identified and all associated risks are appropriately assessed?
- Are procedures / processes implemented in the plan that ensures that all fatigue risks are eliminated and or controlled according to their level of risk?
- Does the fatigue management plan ensure lead indicators are used to monitor and evaluate the success of approach?

Read **all** statements before beginning. Check the **5 highest** rated statements that best reflect your PCBU's capacity in this element. You should try to include statements that cover the 3 dot points above.

Divide your total by **5** (to get an average).

This average indicates your PCBU'S maturity in this element.

Maturity	Criteria	Rating
<b>Emerging</b> A focus towards implementing a compliant approach by addressing individual responsibility for 'fit for work'.	Fatigue risks are not recognised as an issue that requires separate planning to manage.	0
	The PCBU's consider fatigue management to be an individual worker responsibility under 'fit for work' provisions.	1
	Some fatigue factors have been identified in the PCBU's hazard identification process.	1
	Some of the risks associated with fatigue have been assessed. This has been done using a standard risk matrix.	1
	Fatigue management controls centre on 'fit for work' programs and advice about getting enough sleep outside work, aimed at workers.	2
	Evaluation of the fatigue management is not considered in light of possible contributing factors or its role in incidents.	2
<b>Transitional</b> An acknowledgement of a shared responsibility and risk management approach to fatigue management.	Fatigue is a hazard register item, with its own risk factors.	3
	Fatigue risk assessments consider working arrangements not just individual factors.	3
	Fatigue risks are controlled by combinations of several layers. These include (but are not limited to) shift analysis and redesign (if necessary), awareness training and support to enable individuals to maximise the sleep opportunities.	3
	Fatigue risk controls are monitored and evaluated for their continued effectiveness.	4
	Any substantial change in roster or working conditions, personnel and/or plant, which could impact on the development of fatigue, triggers a review of risks and suitability of controls.	4
<b>Progressive</b> This stage is characterised by a commitment to fully resourcing a joint approach to fatigue management. Continual improvement is the goal.	All fatigue hazards are identified (4) and the appropriate controls are implemented between all PCBU's (5).	4-5
	The multi-factorial nature of fatigue is recognised and understood by all. This is reflected in the assessment of fatigue risks.	5
	Several layers of fatigue risk controls operate and include roster design and bio-mathematical analysis, individual reporting and monitoring of fatigue, procedural structure to identify fatigue onset behaviour and errors.	5
	Regular monitoring and evaluation of fatigue risk controls ensures continued best practice.	5
	Review of the PCBU's fatigue risk management performance, considers both lead and lag indicators and makes comparisons with other industries to identify opportunities for improved outcomes.	5

## FATIGUE MANAGEMENT TRAINING and COMPETENCE

- Are fatigue awareness training needs identified?
- How is the competency of those involved with the organisations fatigue management planning and development established?
- How is a common understanding and level of knowledge on fatigue management maintained amongst all PCBU's?

Read **all** statements before beginning. Check the **5 highest** rated statements that best reflect your PCBU's capacity in this element. You should try to include statements that cover the 3 dot points above.

Divide your total by **5** (to get an average).

This average indicates your PCBU'S maturity in this element.

Maturity	Criteria	Rating
<p style="text-align: center;"><b>Emerging</b></p> <p>A focus towards implementing a compliant approach by addressing individual responsibility for 'fit for work'.</p>	Fatigue awareness and education is not covered in the PCBU's induction.	0
	Little fatigue specific training is carried out to enable improved fatigue management.	1
	Understanding and competence is not verified to ensure that all can effectively carry out their assigned responsibilities towards fatigue management.	1
	No systematic training needs analysis or records exist to evaluate competence for those participating in the fatigue management plan.	1
	Some workers and supervisors have received fatigue management training.	2
	Training needs are identified on an ad hoc basis.	2
<p style="text-align: center;"><b>Transitional</b></p> <p>An acknowledgement of a shared responsibility and risk management approach to fatigue management.</p>	Fatigue awareness and education is covered in the PCBU's induction and is dealt with separately from 'fit for work' provisions.	3
	Fatigue training is given to most workers, some supervisors but few managers. There is a reasonable understanding and competence at some levels and verification of this is possible.	3
	Most workers, supervisors and managers have had some training and feel able to carry out their assigned responsibilities towards fatigue management.	3
	Training needs are identified and monitored to ensure a high level of competence and understanding of good fatigue management principles.	4
	The PCBU's reviews the fatigue management capacity of their managers, supervisor and workers and addresses training or knowledge gaps with appropriate resourcing.	4
<p style="text-align: center;"><b>Progressive</b></p> <p>This stage is characterised by a commitment to fully resourcing a joint approach to fatigue management. Continual improvement is the goal.</p>	A solid understanding of fatigue and related issues exists at all levels (4) and for all groups of contractors (5), as a result of ongoing education and awareness programs specifically developed for them.	4-5
	Training programs are regularly 'rolled out' to refresh awareness and update the PCBU's on the latest approaches to fatigue management.	5
	Those in control of the PCBU's activities have undergone fatigue awareness education to help ensure they are able to meet their due diligence obligations.	5
	The approach of other industries are examined to ensure the continued fatigue management training needs of the PCBU's are met and that this approach reflects current 'best practice'.	5
	Leading indicators linked to training are developed and implemented as a result of previous performance data. Continual improvement of fatigue management performance is the goal.	5

## FATIGUE MANAGEMENT SUPERVISION

- How is the appropriate level of supervisor knowledge on fatigue ensured?
- How are supervisors supported in their decisions regarding fatigue management?
- How does the 'system' assist in the development of 'no blame' and fair, fatigue reporting culture?

Read **all** statements before beginning. Check the **5 highest** rated statements that best reflect your PCBU's capacity in this element. You should try to include statements that cover the 3 dot points above.

Divide your total by **5** (to get an average).

This average indicates your PCBU'S maturity in this element.

Maturity	Criteria	Rating
<b>Emerging</b>		
<p>A focus towards implementing a compliant approach by addressing individual responsibility for 'fit for work'.</p>	Supervisors are not supported or sufficiently competent to be able to carry out their functions regarding fatigue.	0
	Ad hoc arrangements or poor planning does not allow for an adequate supervision of fatigue risks.	1
	Levels of supervision are rarely reflective of the PCBU's fatigue risks.	1
	Supervision related to fatigue occurs but is not coordinated between PCBU's.	1
	There are procedures but few tools and support structures to enable appropriate supervisory function regarding fatigue.	2
	Recognition of the issue exists but the culture is not sufficiently mature enough to clearly support supervisors in their capacity to manage fatigue appropriately in those they supervise.	2
<b>Transitional</b>		
<p>An acknowledgement of a shared responsibility and risk management approach to fatigue management.</p>	Support for supervisor fatigue management action is detailed in a procedural process (3) but there is an inconsistent application of the procedure (2).	2-3
	Supervision is consistent with the levels of fatigue risk assessed.	3
	PCBU'S seek to consult to ensure supervision is competent and procedures are uniformly applied.	3
	A detailed support structure within the plan exists with tools, training and monitoring that enables competent supervision for all work groups including contractors.	4
	A 'just' system enables supervisors to make crucial decisions with support from management and this is consistent with across all work group supervisors.	4
<b>Progressive</b>		
<p>This stage is characterised by a commitment to fully resourcing a joint approach to fatigue management. Continual improvement is the goal.</p>	Fatigue assessment and reporting procedures are systematic (4), with clear and demonstrated support from management (5). The plan functions effectively.	4-5
	Coordinated risk assessments between work groups including contractors enable the most appropriate supervision levels for all activities within the scope of work and across all parts of the operation.	5
	Information sharing and common fatigue management training and education ensures a clear understanding on the best and most consistent means to manage fatigue.	5
	A comprehensive, systematic approach to fatigue management which includes tools, assessments, trend data and training, ensures that supervisors have at their disposal, agreed best practice examples to support their function.	5
	World leading supervision of fatigue is reflected across all aspects of the operation. This level of maturity is extended to other contractors who participate in concert without fear of recrimination in a 'just' health and safety culture managing fatigue for the benefit of all.	5

## FATIGUE MANAGEMENT EVALUATION and REVIEW

- What lead and lag indicators exist to enable continual improvement in the fatigue management culture?
- How are workers perceptions on the implementation and effectiveness of fatigue management, gathered?
- Is health screening data used for monitoring and evaluating the plan?
- Is the plan reviewed with the results driving improved fatigue management maturity?

Read **all** statements before beginning. Check the **5 highest** rated statements that best reflect your PCBU's capacity in this element. You should try to include statements that cover the 4 dot points above. Divide your total by **5** (to get an average). This average indicates your PCBU's maturity in this element.

Maturity	Criteria	Rating
<p style="text-align: center;"><b>Emerging</b></p> <p>A focus towards implementing a compliant approach by addressing individual responsibility for 'fit for work'.</p>	No documented evaluation or monitoring of the organisations capacity to manage fatigue is available.	0
	Evaluation and monitoring of the fatigue management plan is ad hoc and reactive and not easily demonstrated.	1
	Implementation and effectiveness of the plan, is perceived very differently throughout the operation.	1
	Pre-employment health assessments are carried out but no specific fatigue risk factors are considered.	1
	The effectiveness of the fatigue management plan is evaluated using limited data streams and is carried out at a corporate or head office level.	2
	There is limited feedback given to workers and other PCBU'S, on the results of any evaluations or reviews of the plan.	2
<p style="text-align: center;"><b>Transitional</b></p> <p>An acknowledgement of a shared responsibility and risk management approach to fatigue management.</p>	An emerging systematic approach to the evaluation of the PCBU's fatigue management plan can be demonstrated (2). Monitoring of the plan involves the use of some lead and lag indicators (3).	2-3
	Worker surveys on their understanding of the plan and perception of its effectiveness are used to identify improvement opportunities.	3
	Multiple data streams are used to inform management on the ongoing effectiveness of the plan.	3
	Yearly performance reviews include information on the progress of the fatigue management plan. This information is shared in consultation with other contractors to help with future planning.	4
	Health screening for potential fatigue related problems is offered to those identified as higher risk workers as a result of working arrangements, volunteered medical factors (sleep apnoea, depression, diabetes etc.).	4
<p style="text-align: center;"><b>Progressive</b></p> <p>This stage is characterised by a commitment to fully resourcing a joint approach to fatigue management. Continual improvement is the goal.</p>	Perceptions on the fatigue management capacity of the organisation are strongly aligned amongst the managers and workers, indicating a maturing culture.	4
	Comprehensive monitoring of hours worked, start times, sleep opportunity, fatigue symptoms, fatigue related errors, and fatigue incidents (including near misses) is evaluated against other best practice operations.	5
	Individual participation and health screening data enables a balanced, progressive and tailored (not one size fits all) response from the PCBU's. This ensures a continual improvement of a fatigue management culture.	5
	Systematic reviews which include periodic fatigue auditing and timely correctives actions ensure the PCBU's approach always reflects the current best practice.	5
	All stakeholders participate in the sharing of review findings and are given the opportunity for input into the future improvement planning.	5

# Fatigue management evaluation report template

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(Template)

(Insert your logo or company name)

# Fatigue management evaluation report

TO (Insert name and title of appropriate manager that this is going to)

cc (Insert name of person who requested you undertake evaluation)  
(Insert name and title of your superior)

FROM (Insert your name and title)

DATE (Insert date of the report)

SUBJECT (Insert location and title and date of evaluation)

# Table of Contents

1. Executive summary.....	X
1.1 Purpose.....	X
1.2 Data sources.....	X
1.3 Highlights at (insert site name).....	X
2. Introduction.....	X
3. Scope.....	X
4. Methodology.....	X
5. Results.....	X
5.1 Fatigue Management QA tool.....	X
5.2 Fatigue Management ‘at a glance’.....	X
5.3 Fatigue culture maturity evaluation results.....	X
5.3.1 Fatigue Management Policy, Commitment and Roles and Responsibilities....	X
5.3.2 Fatigue Management Consultation and Participation.....	X
5.3.3 Fatigue Risk Management.....	X
5.3.4 Fatigue Management Training and Competence.....	X
5.3.5 Fatigue Management Supervision.....	X
5.3.6 Fatigue Management Evaluation and Review.....	X
5.3.7 Overall results for fatigue maturity evaluation.....	X
6. Recommendations.....	X
6.1 Fatigue management plan elements (quality assurance tool).....	X
6.2 Fatigue management culture maturity elements.....	X

List of Appendices (to include)

Appendix A: Fatigue culture maturity elements

Appendix B: Fatigue culture maturity elements – Guidance notes

Appendix C: Fatigue management Quality Assurance tool

Appendix D: Evaluation rating scale and rating guide

Appendix E: Fatigue management ‘at a glance’ tool

Appendix F: Health indices (factsheet) – Fatigue management<sup>3</sup>

**Note:** Manually update table of contents with page numbers once the report is completed.

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<sup>3</sup> [http://www.resources.nsw.gov.au/\\_data/assets/pdf\\_file/0011/403688/OUT11-4266-Health-Indices-Factsheet-No-4-Fatigue.pdf](http://www.resources.nsw.gov.au/_data/assets/pdf_file/0011/403688/OUT11-4266-Health-Indices-Factsheet-No-4-Fatigue.pdf)

# 1. Executive summary

## 1.1 Purpose

This report represents the results of the fatigue management plan evaluation within (insert site name), with next steps to build on the findings of this review by developing a continual improvement plan. By evaluating fatigue management implementation at (insert site name), decisions about how to improve fatigue management can be made and the implementation of agreed strategies can occur on the basis of accurate information so that improvements can be targeted more effectively.

## 1.2 Data sources

Data was collected using a mine site survey 'Fatigue management at a glance', the 'Fatigue management plan quality assurance' tool and the 'Fatigue culture maturity evaluation'. The data collection tools provide both quantitative and qualitative data.

The assessment portion of the evaluation primarily made use of the Fatigue management quality assurance tool. This was developed to look specifically at an organisations fatigue management plan and its capacity to address the fatigue issues in a manner consistent with an agreed industry approach. The evaluation was supported by interviews of key personnel (Tool C) regarding the 'day to day' practice of fatigue management as per the plan. The interviews confirmed the scoring of the evaluation tool.

Finally, the 'Fatigue management 'at a glance' survey results and the determination of the fatigue evaluation working party of the PCBU's 'fatigue cultural maturity' was used to make comment on the level of implementation of the fatigue management plan and effectiveness of fatigue management processes.

(Insert details of numbers of, who was interviewed and who was involved in the Fatigue culture maturity evaluation).

## 1.3 Highlights at (insert site name)

(Insert a short statement of the overall capacity of the plan to manage fatigue in terms of strengths identified by each assessment tool).

Identify key opportunities for improvement.

E.g. This 'Plan' is however;

- Not uniformly implemented;
- Has not been fully consulted;
- Poorly understood by key personnel and contractors (as evidenced by interviews and 'Fatigue management at a glance' survey results);
- Is being hampered by level of fatigue culture maturity;
- Is outdated (several uncontrolled copies),
- Contains procedures that have been superseded by current practice (references to different maximum working hours)
- Lacks demonstrated rigour in the risk management of fatigue hazards onsite.
- Included a training portion in a 2002 copy but not the current version. This should be reconsidered.

## 2. Introduction

This assessment provides an overview of the site's progress in implementing a Fatigue management plan. The fatigue management plan evaluation examination of the (insert site name) capacity to manage fatigue in line with the approach advocated in the industry endorsed guidance material 'Fatigue Management Plan: A practical guide to developing and implementing a fatigue management plan for the NSW mining and extractives industry'.

## 3. Scope

The evaluation took place on (insert date) and was carried out by (insert details of who was involved in what aspects of the evaluation).

The 'Fatigue management plan quality assurance' evaluation looked at all the relevant documentation that existed regarding (insert site name) fatigue management plan. This information was sourced from the intranet and current policies.

(Insert any other specific details of data collection activities e.g. an interview process added further clarification on the implementation, participation in and awareness of the current plan).

The evaluation also involved the collection and analysis of responses to the 'Fatigue management at a glance' tool. (Insert number) surveys were distributed and (Insert number) completed and returned. The intent was to achieve as broad a cross section of responses as possible. Those personnel surveyed in this manner included;

Insert positions e.g.

- # Manager
- # Supervisors
- # Operators
- # Maintenance (fitters)
- And so on.....

The final 'data point' in the evaluation is the inclusion of the information provided by the 'Fatigue culture maturity evaluation' process. The fatigue culture perspective provided a view on the level of progression of (insert site name) along the culture maturity continuum and helped develop an understanding of (insert site name) capacity to maintain an ongoing commitment to fatigue management.

At the outset the evaluation involved (Insert the names, titles etc. of those involved in the document review portion). Together they reviewed the procedural documentation and discussed element ratings.

## 4. Methodology

The evaluation utilised several other data collection tools to provide a broad perspective on implementation. The evaluation team consisted of *(Insert the names, titles etc. of those involved in the document review portion)*. *(Insert names)* were involved in the document review and element ratings and *(insert names)* were involved in the fatigue culture maturity evaluation.

The assessment tool included;

- The 'Fatigue management at a glance', Tool A. This was filled out by a cross section of those that work at *(insert site name)*. This site survey tool captured a broad sample of both positions/roles (*e.g. from general manager to secretary*) and worker types (*e.g. Operators, process workers, maintenance workers, contractors, inexperienced workers etc.*). The ratings given by the various roles and worker types helped determine strengths and weaknesses in the fatigue planning approach and application.
- The 'Fatigue management plan quality assurance tool', Tool B. This tool provided a 'map' of *(insert site name)* approach to fatigue management measured against the endorsed industry guidance material and covered all the relevant elements of the Fatigue Management Plan. The tool provides a rating scale for each element with scoring guidelines and a comprehensive list of evidence to support the rating.
- The 'Fatigue culture maturity evaluation', Tool D – This was tool was used by *the working group (e.g. HSC)*. The aim of the evaluation was to generate discussion and common position as to where *(insert site name)* 'sits' with respect to fatigue management maturity. The assessment results provide a guide to future actions required to achieve effective implementation of the fatigue management plan.

**Note:** The health indices fact sheet<sup>4</sup> on fatigue was used to provide further guidance when looking at recommendations on good practices activities which form part of *(insert site name)* Fatigue Management Plan. It also provided further rating information to assist the scoring process.

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<sup>4</sup> [http://www.resources.nsw.gov.au/\\_data/assets/pdf\\_file/0011/403688/OUT11-4266-Health-Indices-Factsheet-No-4-Fatigue.pdf](http://www.resources.nsw.gov.au/_data/assets/pdf_file/0011/403688/OUT11-4266-Health-Indices-Factsheet-No-4-Fatigue.pdf)

## 5. Results

The findings are grouped according to stages of development:

- Progressive;
- Transitional; and
- Emerging.

Broadly these represent the level of fatigue management maturity. These stages can be characterised as follows:

- **Emerging** (Vulnerable to Reactive)  
There is a focus on implementing a compliant approach through information sharing, hazard identification and risk assessment.
- **Transitional** (Active to Proactive)  
There is a focus on monitoring activities and stakeholder engagement together with the implementation of a combination of controls.
- **Progressive** (Resilient)  
There is a focus on fatigue management system integration. This stage is characterised by implementation of higher order controls and regular reviews of the system's success. Ongoing learning and continual improvement is the goal.

### 5.1 Fatigue Management QA tool

#### Rating Summary

Each of the eight (8) elements (and sub-elements) of the fatigue management plan were rated and the mean results were as follows;

Fatigue Management Plan QA tool elements	Mean rating (out of 5)
1. Policy	e.g. 2.8 (3)
2. Consultation	
3. Roles and Responsibilities	
4. Risk Management	
5. Management Procedures and Processes	
6. Implementation	
7. Monitoring and Review	
8. Records Management	

\* Figures in brackets are ratings rounded to nearest whole number

(Insert any informative qualitative information from interviews).

(Insert relevant description of performance level).

### **Progressive**

At this stage the elements of (insert site name) fatigue management plan that can be considered progressive are:

Specific elements that appear to have been considered but not fully developed are:

### **Transitional**

At this stage the elements of (insert site name) fatigue management plan that can be considered transitional are:

Specific elements that appear to have been considered but not fully developed are:

### **Emerging**

At this stage the elements of (insert site name) fatigue management plan that can be considered emerging are:

Specific elements that appear to have been considered but not fully developed are:

## 5.2 Fatigue management 'at a glance'

Means for each of the (4) four elements (and sub-elements) of the combined 'Fatigue management at a glance' survey ratings were collated and are recorded below.

### **Scoring Summary**

<b>Fatigue management 'at a glance' elements</b>	<b>Mean rating (out of 5)</b>
1. Consultation, commitment and responsibilities	
2. Fatigue risk management	
3. Implementation	
4. Monitoring and review	

(Insert number of surveys completed and highlight the notable responses. Identify any differences in how the various positions rated each section).

## 5.3 Fatigue culture maturity evaluation results

The culture maturity evaluation tool provides an assessment of (insert site name) level of fatigue management maturity and indicates future activities and actions that may help consolidate (insert site name) current level of fatigue management maturity before attempting to progress to the next level.

The rating is based on the selection of (5) five 'tracking' statements for each element which best describe site's performance on this element. Mean ratings for each of the (6) elements are recorded below.

<b>Fatigue culture maturity elements</b>	<b>Mean rating (out of 5)</b>
1. Fatigue Management Policy, Commitment and Roles and Responsibilities	
2. Fatigue Management Consultation and Participation	
3. Fatigue Risk Management	
4. Fatigue Management Training and Competence	
5. Fatigue Management Supervision	
6. Fatigue Management Evaluation and Review	

(Insert the description from the list below which best describes the level of maturity for element each. Delete the descriptions that do not apply, from the report).

### 5.3.1 Fatigue Management Policy, Commitment and Roles and Responsibilities

1. The site is at an emerging level of maturity for policy and commitment and may be characterised as vulnerable in this element.
2. The site is at an emerging level of maturity for policy and commitment and while advancing may be considered reactive in this element.
3. The site is at a transitional level of maturity for policy and commitment and may be characterised as active in this element.
4. The site is at the latter stages of transitional maturity for policy and commitment and may be characterised as proactive in this element.
5. The site is at a progressive level of maturity for policy and commitment and may be characterised as demonstrating best practice in this element.

(Insert detail to support this decision)

### **5.3.2 Fatigue Management Consultation and Participation**

1. The site is at an emerging level of maturity for consultation and participation may be characterised as vulnerable in this element.
2. The site is at an emerging level of maturity for consultation and participation and while advancing may be considered reactive in this element.
3. The site is at a transitional level of maturity for consultation and participation and is characterised as active in this element.
4. The site is at the latter stages of transitional maturity for consultation and participation and may be characterised as proactive in this element.
5. The site is at a progressive level of maturity for consultation and participation and may be characterised as demonstrating best practice in this element.

(Insert detail to support this decision)

### **5.3.3 Fatigue Risk Management**

1. The site is at an emerging level of maturity for fatigue risk management and may be characterised as vulnerable in this element.
2. The site is at an emerging level of maturity for fatigue risk management and while advancing may be considered reactive in this element.
3. The site is at a transitional level of maturity for fatigue risk management and is characterised as active in this element.
4. The site is at the latter stages of transitional maturity for fatigue risk management and may be characterised as proactive in this element.
5. The site is at a progressive level of maturity for fatigue risk management and may be characterised as demonstrating best practice in this element.

(Insert detail to support this decision)

### **5.3.4 Fatigue Management Training and Competence**

1. The site is at an emerging level of maturity for fatigue management training and competence and may be characterised as vulnerable in this element.
2. The site is at an emerging level of maturity for fatigue management training and competence and while advancing may be considered reactive in this element.
3. The site is at a transitional level of maturity for fatigue management training and competence and is characterised as active in this element.
4. The site is at the latter stages of transitional maturity for fatigue management training and competence and may be characterised as proactive in this element.
5. The site is at a progressive level of maturity for fatigue management training and competence and may be characterised as demonstrating best practice in this element.

(Insert detail to support this decision)

### 5.3.5 Fatigue Management Supervision

1. The site is at an emerging level of maturity for fatigue management supervision and may be characterised as vulnerable in this element.
2. The site is at an emerging level of maturity for fatigue management supervision and while advancing may be considered reactive in this element.
3. The site is at a transitional level of maturity for fatigue management supervision and is characterised as active in this element.
4. The site is at the latter stages of transitional maturity for fatigue management supervision and may be characterised as proactive in this element.
5. The site is at a progressive level of maturity for fatigue management supervision and may be characterised as demonstrating best practice in this element.

(Insert detail to support this decision)

### 5.3.6 Fatigue Management Evaluation and Review

1. The site is at an emerging level of maturity for fatigue management evaluation and review and may be characterised as vulnerable in this element.
2. The site is at an emerging level of maturity for fatigue management evaluation and review and while advancing may be considered reactive in this element.
3. The site is at a transitional level of maturity for fatigue management evaluation and review and is characterised as active in this element.
4. The site is at the latter stages of transitional maturity for fatigue management evaluation and review and may be characterised as proactive in this element.
5. The site is at a progressive level of maturity for fatigue management evaluation and review and may be characterised as demonstrating best practice in this element.

(Insert detail to support this decision)

### 5.3.7 Overall results for fatigue maturity evaluation

#### Progressive (5)

The elements of (insert site name) fatigue management maturity elements that can be considered progressive are:

Specific 'tracking' statements identified as representative of (insert site name) fatigue management maturity are:

#### Transitional (3 – 4)

The elements of (insert site name) fatigue management maturity that can be considered transitional are:

Specific 'tracking' statements identified as representative of (insert site name) fatigue management maturity are:

#### Emerging (1 – 2)

The elements of (insert site name) fatigue management maturity that can be considered emerging are:

Specific 'tracking' statements identified as representative of (insert site name) fatigue management maturity are:

## 6. Recommendations

### 6.1 Fatigue management plan elements (Quality assurance tool)

(Insert relevant recommendations based on the rating and stage fatigue management system development).

E.g. Emerging

#### **Review, develop and formally document fatigue management procedures**

Notwithstanding the existence of a fatigue management plan at (insert site name) a fair amount of work remains to be done before this can be should centre considered consistent with a desired industry approach. (Insert site name) would benefit from further consultation and planning. These steps need to be undertaken so as to accurately establish the necessary procedural components still required to be developed and formalised into documented procedures. Crucial too, is the need to develop a considered and appropriate risk management process. This should be undertaken in consultation with representatives of affected workers.

E.g. Transitional

#### **Ensure implementation of fatigue monitoring procedures and risk controls**

Consideration should be given as to how the Fatigue Management Plan is able to ensure that effective monitoring of the plan occurs. There is a lack of formal processes which identify system weaknesses through examining incident data, hazard reporting and fatigue assessment survey results. Without this the management team cannot be assured that the plan is adequately addressing (insert site name) fatigue management objectives. Similar concerns are held for plan's capacity to ensure a rigorous review process.

E.g. Progressive

#### **Ensure a continual improvement strategy is in place to consolidate performance**

To ensure continued improvement lead performance indicators need to be identified and a baseline established for benchmarking purposes. (Insert site name) would benefit from identifying benchmarking partners to help drive continual improvement.

### 6.2 Fatigue management culture maturity elements

(Insert a statement of comparison between the level of fatigue management system development and fatigue culture maturity).

Generally a good system cannot perform to its optimum if the culture within which it operates does not support the effective implementation of the system.

(Insert a statement of comparative maturity between elements).

A lower maturity rating in one of the six elements may indicate a need to consolidate activities in this element before attempting to advance in another element. Of course there can be 'healthy' cultures at each level of these elements (Fletcher – Integrated Safety Support 2012)

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# Quick Tools

These quick tools can be used day-to-day to help with the ongoing risk management of fatigue in the workplace.

## Fatigue assessment quick tools



Trade &  
Investment  
Mine Safety

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# Fatigue likelihood score (FLS)

## Have I had enough sleep?

The following table looks at assessing sleep obtained in the last 24 and 48 hours and at the amount of time an individual has been awake before commencing a shift or at any time until they sleep next.

- Step 1:** For every hour of sleep less than 5hrs (in a 24hr period), add 4 points (e.g. 5 hours = 0 points, 4 hours sleep = 4 points and so on...) Mark score A in table below.
- Step 2:** For every hour of sleep less than 12hrs (in a 48hr period), add 2 points (e.g. 12 hours = 0 points, 11 hours = 2 points and so on...) Mark score B in table below.

**Estimating the likely Fatigue impairment at the start of a shift.** For each hour awake, greater than the number of hours slept in the last 48 hours, add 1 point, call this C. (Write this figure in field C below.) **Add Scores A+B+C and this will equal likely fatigue impairment score, at the start of shift.**

**Note:** This figure may not contribute much (if at all) to fatigue likelihood score, since many people wake and then soon leave for work. However if there is a considerable time delay between waking and starting work then this figure will likely be a significant contributor to the total score.

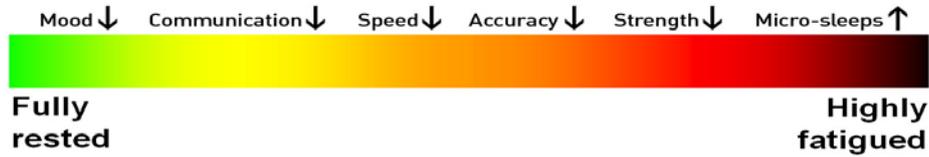
**Estimating the likely Fatigue impairment by shift end:** For each hour awake, greater than the number of hours slept in the last 48 hours, add 1 point, call this D. **Add Scores A+B+D and this will equal the likely fatigue impairment score, by shift end.**

A: Prior 24 hours sleep								
<b>Sleep:</b>	0 Hours	1 Hours	2 Hours	3 Hours	4 Hours	5 Hours	5> Hours	<b>A</b>
<b>Points:</b>	20 Points	16 Points	12 Points	8 Points	4 Points	0 Points	0 Points	?
B: Prior 48 hours sleep								
<b>Sleep:</b>	<7 Hours	8 Hours	9 Hours	10 Hours	11 Hours	12 Hours	12> Hours	<b>B</b>
<b>Points:</b>	10 Points	8 Points	6 Points	4 Points	2 Points	0 Points	0 Points	?
C: Fatigue Impairment Likelihood at shift start								
Number of hours awake at start								<b>? = C</b>
<b>Total: A+B+C= Fatigue Impairment Likelihood at start of shift</b>								
D: Fatigue Impairment Likelihood by shift end								
Number of hours awake at end								<b>? = D</b>
<b>Total: A+B+D= Fatigue Impairment Likelihood by end of shift</b>								

Source: Dawson and McCulloch, Sleep Medicine Review, 2005

# Fatigue and impairments

The continuum below indicates the cumulative impairments that are likely, as a result of increasing fatigue.



Source: Fletcher – Integrated Safety Support 2012

The **table below** compares the fatigue likelihood score from the table on the previous page and aims to estimate the potential negative effects of fatigue impairment.

## Potential Impairment

What type of impairment has been predicted from your FLS score?

12	<ul style="list-style-type: none"> <li>• Struggling to stay focused on any task.</li> <li>• Difficulty staying awake at times.</li> <li>• Micro-sleeps likely.</li> </ul>
10	<ul style="list-style-type: none"> <li>• Clear loss of motivation.</li> <li>• Significant loss of situational awareness.</li> <li>• Task performance impaired.</li> </ul>
8	<ul style="list-style-type: none"> <li>• Clear evidence of behavioural impairment.</li> <li>• Difficulty sustaining attention on simple tasks.</li> </ul>
6	<ul style="list-style-type: none"> <li>• Difficulty concentrating.</li> <li>• Occasional lapses of attention.</li> <li>• Poor judgement on complex task.</li> </ul>
4	<ul style="list-style-type: none"> <li>• Difficulty in maintaining extended concentration for complex tasks.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Slowed cognition.</li> <li>• Occasional minor fatigue behaviours.</li> <li>• Minor mood changes observable.</li> </ul>
0	<ul style="list-style-type: none"> <li>• Not fully alert but able to perform tasks safely.</li> <li>• Few external signs of fatigue.</li> </ul>

## Was it a good sleep?

Hours of work and adequate hours of sleep aren't the whole picture. Other things you need to consider which affect alertness are:

- Did I have a poor quality sleep?
- Do I have a medical or emotional issue that affects quality of sleep?

If you answered yes to either of these you could still be fatigued even if you had enough hours of sleep compared to how long you have been awake.

# Individual alertness (subjective assessment)

## How alert am I?

The assessment below is a subjective self-assessment of alertness. It is based on the Samn-Perelli Alertness Checklist<sup>5</sup> and includes some suggestions on control triggers. This assessment could be used to help predict potential impairment as the shift progresses.

It could be useful in deciding:

- when extra supervision might be needed;
- what behaviours to look for;
- an individual's potential capacity when planning safety critical tasks; and
- an individual's capacity to commute home.
- risks from impairments to individuals on call out (emergencies or breakdowns etc.)

1	Fully Alert
2	Very lively
3	Okay
4	A little tired
5	Moderately Tired
6	Extremely Tired
7	Completely Exhausted

### **Consider:**

What do I have to do at work?

- Is the work demanding?
- Is the work monotonous?
- Is the work environment too hot, cold, humid or noisy?

**Suggestion:** If you answered **yes** to any of these and you assessed your alertness to be a 5, 6 or 7, talk to your supervisor and report this.

<sup>5</sup> Samn SW, Perelli LP. Estimating aircrew fatigue: a technique with application to airlift operations: Brooks AFB, USAF School of Aerospace Medicine; 1982. Report No.: SAM-TR-82-

## Example control responses

The following table provides some example control responses using the previous tables' rating criteria.

Samn-Perelli Fatigue Checklist <sup>6</sup>	Risk level	Controls (suggested examples only)
1 - 3	low	<ul style="list-style-type: none"> <li>No specific controls necessary (except in the presence of other indicators i.e. symptoms, errors or incidents).</li> </ul>
4 - 5	moderate	<ul style="list-style-type: none"> <li>Prior sleep/wake and behavioural assessment</li> <li>Individual controls such as work break</li> <li>Increase supervision or team-based monitoring</li> </ul>
6	high	<ul style="list-style-type: none"> <li>Document with shift supervisor</li> <li>Prior sleep/wake and behavioural assessment</li> <li>Individual controls such as work break</li> <li>Task re-assignment</li> <li>Team-based controls</li> <li>Support napping and safe-home policies.</li> </ul>
7	extreme	<ul style="list-style-type: none"> <li>Intolerable risk - no individual rostered beyond this threshold.</li> <li>Any proposed exceptions to be escalated to the group management for approval.</li> </ul>

**Note:** The above tools cannot provide **definitive** measurements of fatigue levels or a precise prediction of fatigue and so an overreliance on these to make accurate decisions would be inappropriate, without considering other factors and individual differences.

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<sup>6</sup> Samn S.W, Perelli L.P Estimating aircrew fatigue: a technique with application to airlift operations: Brooks AFB, USAF School of Aerospace Medicine; 1982. Report No.: SAM-TR-82-