

FATIGUE MANAGEMENT PROGRAM

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THE PERSON IN CHARGE OF THE ACTIVITY IS RESPONSIBLE FOR APPLYING THIS PROCEDURE

LIST OF VERSIONS

	Date	Section	Page(s)	Purpose of modification
1	May 14th, 2009			Original
2	May 29th, 2012	11	16	
3	September 12th, 2017	6	15	Review
4	April 14, 2023			Adjustment SOP format/logo

DEFINITIONS APPLICABLE TO THIS DOCUMENT

Fatigue	Fatigue can either be work or non-work related or a combination of both. It is a state of impaired mental and/or physical performance and lowered alertness arising as a result or combination of hard physical and mental work, health and psychosocial factors or inadequate restorative sleep.
Sleep Deprivation	Sleep deprivation can occur as a result of a total night's sleep lost (actual) or when some sleep is lost each night over a period of nights (partial). A change in the circadian rhythm (body clock) of sleep can result in a form of partial sleep deprivation (gap) due to the low quality of sleep obtained. Both actual and partial sleep deprivation result in reduced levels of alertness and performance, both physical and mental.
Sleep Dept/ Deficit	A sleep debt arises when an individual does not achieve adequate restorative sleep and it can accumulate over a number of days of inadequate sleep. Sleep debt is often seen in shift workers due to the timing of their sleep periods. Night shift and early shift workers (shift start before 6 a.m.) have reduced quality and quantity of sleep. Recovery from sleep loss is not immediate and a number of full nights' sleep may be required for an individual to return to normal levels of physiological functioning
Sleep Opportunity	The sleep opportunity is the time available for sleep in a 24-hour period. Work time and commute time are not available for sleep and are therefore not included in the sleep opportunity. Within the sleep opportunity an individual may sleep, eat, socialize, relax and carry out activities associated with the home or family responsibilities. The balance between these activities will determine the amount of sleep an individual attains. The combined work and commute times primarily determine the duration of the sleep opportunity and the type of work determines whether the sleep opportunity is regular or irregular, predictable or unpredictable.
Working Time Arrangement	The Working Time Arrangement refers to the design of work arrangements and the management of work hours, including overtime, work and meal breaks and the scheduling of work tasks. No single working time arrangement will suit all the stakeholders of an organization at all times. A working time arrangement should best reflect the needs of the employees and the organization.

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PURPOSE

The purpose of this document is:

- To identify and assess the fatigue related risks for the working environment including site and external factors.
- To implement a process for controlling the fatigue related risks and their potential impact on the health and wellbeing of personnel.
- To provide all personnel at all levels of the organization with information on personal risk. Management of fatigue and guidelines for recognizing fatigue and managing fatigue related risks at work.

SCOPE

This program applies to the total Rosebel Gold Mines Operations and activities and includes all employees, contract employees and contractors.

DESCRIPTION OF THE ACTION

1 RESPONSIBILITY

1.1 Site Management

- Review, approve and provide visible support for implementation.
- Ensure that a site specific fatigue management program is developed based on a risk assessment. Identify the scope of application and resources required for implementation and maintenance of this standard.
- Implement the required actions of this Significant Risk Control Standard by providing necessary equipment, training and resources.
- Monitor the implementation and application and report progress through the Health & Safety Department and audit processes.
- Ensure the responsibility for implementation of the Significant Risk Control Standard is included in personal performance program.
- Participate in site risk assessments.
- Ensure consistent application of the standard and regulatory requirements.
- Train employees in the causes and management of fatigue.

1.2 Supervisor

- Supervisors have a responsibility to monitor for the signs and symptoms of fatigue in their coworkers and team members. This is particularly important in times of high stress, high job demands and crisis situations. As individuals often have an impaired judgment of their own state of fatigue, supervisors and team leaders have the ultimate responsibility for monitoring their team (Refer to Appendix C, Fatigue Impairment and Intervention).
- Identify, assess and monitor fatigue risks in their area of control and where appropriate carry out corrective actions.
- Ensure all employees and contractors have access to relevant training, information and assistance with regard to fatigue and fatigue risks.
- Ensure Nap Zappers are worn by all haul truck operators in all shift.

1.3 All employees and contractors

- Comply with the site Fatigue Management Program.
- All employees are to attend work “fit for work”. This requires that employees make lifestyle choices that enable their fitness for duties including having sufficient sleep and recovery to complete their work duties safely and responsibly and managing any personal, commuting, medical or health issue that may impact on their fitness for work.
- Identify, monitor and report fatigue related issues.
- Report to their immediate supervisor any fatigue risk situation in themselves or in that of a co-worker. Discretion is necessary when reporting concerns about another person.
- Attend the fatigue training and education sessions and apply the knowledge where appropriate.
- Nap zapper must be checked prior to start of each shift.

2 PERSONAL PROTECTIVE EQUIPMENT

A good working nap zapper for all Truck, Bus or Mobile equipment operator is required during each shift. Nap zapper must be checked prior to start of each shift and the supervisor must be notified in case of not working nap zapper.

3 STRUCTURE AND DESIGN OF WORK TIME ARRANGEMENTS

Working time arrangements shall undergo an annual review to ensure that the answers to the following questions are not negative (“Yes”). If any are, a detailed risk assessment should be undertaken to determine whether the level of risk due to fatigue is ALARP.

3.1 Management Processes for Monitoring and Controlling Worker’s Potential Fatigue

The following conditions shall be complied with. Unless exempted by a formal risk assessment signed off by the mine manager:

- No night shift without a minimum of 24 hrs notice to the affected workers.
- Issue a formal notification to workers that they are able to make a decision to stop work and report to management when fatigued rather than continue working and risk a fatigue related incident.
- Conduct fatigue audits on a daily basis by the supervisor.
- Keep records of all employee data related to fatigue incidents.
- Supervisor/foreman to conduct regularly fatigue exercises in all shifts.

3.2 Effects of Activities Carried Out During Roster and Overtime Hours

Every effort should be made by the operator to remain alert. The following list is not exclusive, but the following conditions shall be complied with. Unless exempted by a formal risk assessment signed off by the mine manager:

- Lighting and ventilation appropriate to the working environment.
- Noise and heat levels appropriate to the working environment.
- Access to drinking water.

A framework for supervisors and others for making decisions about fatigue impairment and appropriate intervention is included as Appendix C.

3.3 Effects of Activities Carried Out During Non-Roster Hours

Consideration should be given to activities carried out by individuals in their non-work time. Through the training described in appendix B, workers are encouraged to have at least 6 hours sleep in the previous 24 and to balance their home and work lives to minimize the likelihood of a fatigue related incident.

Any worker taking prescription drugs are encouraged to consult their medical practitioner, who is responsible to make persons aware about the effects of medicines, about any possible effects the drugs may have on their job tasks.

4 ROSEBEL GOLD MINES OPERATIONS FMP (FATIGUE MANAGEMENT PLAN)

To comply with the operating standards scheduling must ensure that:

- An operator is given at least 24 hours’ notice to prepare for working time of 12 hours or more.
- An operator is not permitted to exceed more than 180 hours of working time in any 21 day period.

4.1 Mine Operations Work Time Arrangements.

At the RGM Operations there is one work time arrangement applicable:

12 hours shift “dayshift” (06:00-18:00); seven days consecutive with a 24 hours rest period before starting with the “night shift” (18:00-06:00). During these work hours, there are two official rest periods included.

See overview below.

Shift	North Pits	South Pits	North + South Pits Coffee break
Dayshift 06:00 – 18:00 Hr	11:20 – 12:00	12:20 – 13:00	15:00 – 15:10
Nightshift 18:00 – 06:00 Hr	22:50 – 23:30	23:50 – 00:30	03:00 – 03:10

4.2 Methods to monitor fatigue are:

- Driver’s observation.
- Brother’s keepers’ concept.
- Nap Zappers must be worn at all times by all haul truck operators while operating.

5 DOCUMENTATION/ RECORD KEEPING

Work schedules, rosters, observations and fatigue related incidents, records of hours worked will be documented and retained as part of good management practice.


5.1 APPENDIX A SHIFT SCHEDULE STANDARD

5.1.1 Objective: A standard shift schedule that is applicable to villagers and camp situations.

5.1.2 Purpose:

The purpose of this standard is to provide the maximum shift duration cycles to be used for designing shift schedules. If a variance of this schedule standard is required, the Fatigue Management Gap Analysis Tool and Formal Risk Assessment methodologies will have to be utilized to understand the risks related to the variance. Once this is completed the Formal Risk Assessment needs to be signed off by the site General Manager.

Any business case aspects should be analysed outside of the Shift Schedule Standard.

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5.1.2 Definitions

5.1.2.1 CAMP

- Applicable to fly-in/fly-out or drive-in/drive-out situations
- Considered to be onsite in camp setting.
- Minimal commute time to job location.
- Off-duty requirements provided (i.e. meals, laundry, etc).
- Employer controlled environment.

5.1.2.2 VILLAGE

- Based outside of mine site such as hotels or apartments/ homes.
- Commute time varies and transportation is provided where applicable.
- Based on the following structure per 24 hrs.

5.1.3 NORMAL SLEEP REQUIREMENTS – SLEEP CYCLES

- Uninterrupted sleep*
- Rooms need to be prepared for day sleep, typical aspects would include:
 - Noise level
 - Lighting level.
- Location of day shift and night shift workers (see section F).
- Off time - interval between successive shifts/duty periods which allows a responsible employee adequate time to obtain sufficient sleep (item 1 above) to become fit for duty and return to the workplace in time for the next shift/duty period, allowing for:

- Commuting distance and traffic levels.
- Time to eat before and after sleep.
- Personal time for relaxation/unwinding.
- Attending to bathroom & hygiene.
- Necessary family communications/duties.
- Extra time between blocks of shifts or consecutive sets of duty periods to repair any cumulative sleep debt.

*Note: Uninterrupted sleep – meets all 5 Stages of sleep – Stage 1 and 2; Stage 3 and 4 –Delta and Stage 5 REM (Rapid Eye Movement) Sleep.

5.1.4 REVIEW AND AUDIT

A review of the implementation and application of this standard shall be incorporated into the site and region audit process.

5.1.5 EXCEPTIONS TO PERFORMANCE REQUIREMENTS

To obtain variances from this standard requires a documented formal risk assessment and the written approval by the General Manager.

5.2 APPENDIX B

FATIGUE MANAGEMENT AUDIT MINE OPERATIONS



Fatigue Management Checklist

Datum : _____ Shift: Dag / Nacht
 Naam: _____ Functie : _____
 Badge # : _____

	# Uren	Kommentaar
Geslapen in de laatste 24 uur (Gisteren, inclusief siesta)		
Geslapen in de vorige 24 uur (Eergisteren)		
Totaal		
Uren waker vandaag (8 AM)		

(Markeer met een X)	Ja	Nee	Kommentaar
Afgelopen 5 nachten gewerkt	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
In het kamp geslapen	<input type="checkbox"/>	<input type="checkbox"/>	
Gekomen vanuit het dorp	<input type="checkbox"/>	<input type="checkbox"/>	
Gekomen van buiten naar het werk	<input type="checkbox"/>	<input type="checkbox"/>	Paramaribo / Nickerie / Other
Alcohol genuttigd gedurende de laatste 8 uur	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Heb je een Napzapper	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Heb je drink water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Heeft U medicijnen ingenomen	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Alle grijze vlakken die met een X worden gemarkeerd moeten worden besproken met de supervisor.

Handtekening : _____

Note: Werknemers worden geacht zich fysiek en mentaal fit aan te melden aan het werk.


5.3 APPENDIX C

5.3.1 Fatigue Training outline

5.3.1.1 INTENT

To provide all personnel with information that encourages informed choices on health and lifestyle that lead to ongoing fitness for duties.

5.3.1.2 SCOPE

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The training and education program applies to all employees and contractors. Provide and encourage opportunities for family members to be included in the information exchange. The program should encompass the findings of the fatigue risk assessment.

5.3.2 ELEMENTS OF THE PROGRAM

5.3.2.1 Information Sessions

Provide by internal and/or external personnel. Education and training on understanding fatigue and its relationship to adequate restorative sleep, identifying the signs and symptoms of fatigue, strategies and mechanisms for coping with fatigue in and out of the workplace, a review of shift work and of the nature of the work conducted. Suggested topics include:

- A review of the Company Zero Harm policy.
- Impact of personal health on fatigue.
- Causes and effects of fatigue.
- Recognizing fatigue.
- Adjusting to shift work and the effects of, and managing fatigue.
- The effect of drugs and alcohol and other lifestyle factors / choices on fatigue.
- Getting the right sleep and power napping.
- The nutrition, exercise and fatigue relationship.
- The effect of food and drink / fluid balance.
- Employee Assistance Program - what they can provide in prevention and assistance.
- Healthy lifestyle.

5.4 APPENDIX D

5.4.1 Fatigue Impairment and Intervention

5.4.1.1 INTENT

To provide a framework for a step by step process, for making decisions about fatigue impairment and appropriate intervention.

5.4.1.2 SCOPE

This document is appropriate for use at RGM controlled operations and activities. The information detailed herein should be viewed as a guide to conversation with an individual who is observed to be fatigued.


5.4.2 ELEMENTS OF THE FRAMEWORK

5.4.2.1 Observation

Determine what has been noticed about the person's functioning and/or behaviour.

A number of questions should be asked.

- Is there a significant change in the person's behavior?
- In what area has there been a change?
- Are there physical symptoms such as:
 - Eyes bloodshot
 - Slower movements
 - Poor co-ordination
 - Slower than normal response time (e.g.: response to radio contact)
- Are there cognitive functioning symptoms such as:
 - Distracted from task
 - Poor concentration/lapses in concentration
 - Doesn't complete tasks
 - Short-term memory loss (forgets instructions)
 - Nodding-off momentarily
 - Fixed gaze and/or reports blurred vision
- Are there emotional or motivational symptoms such as:
 - Appears depressed
 - Irritable
 - Doesn't care anymore
 - Easily frustrated with tasks
 - Increased or noticeable level of unexplained or unusual absenteeism

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If the person exhibits three or more of the typical symptoms of fatigue, or very marked symptoms in any one or two areas consider what risks are present.

5.4.2.2 Risk Indicators

Estimate the degree of risk associated with what has been observed and determine if the level of risk acceptable. Consider the following:

- Has a fatigue-related incident occurred?
- Has the person (self-report/by another person) been identified as at ‘fatigue risk’?
- Is there a risk to self, others, plant or equipment associated with the individual’s functioning and/or behaviour?
- Is the level of risk high, moderate or low?

Where the level of risk is unacceptable consider the responses this person gives in conversation.

5.4.3 Conversation

Engage the individual in conversation about his/her symptoms; state what has been observed and the estimate of the risk involved, and the reasons for the estimate of the risk involved.

Does the person have an explanation for what you have observed?

An explanation does not discount what has been observed but may offer a reason for what has been observed. The explanation may offer some answers to the next set of questions the purpose of which is to encourage the individual to take responsibility for their functioning, to think about the reasons behind their fatigue-related risk and to emphasise that the person has a role to play in preventing fatigue risks.

5.4.4 Personal Insight

What is the person’s understanding and how do they explain what has been observed?

5.4.5 Sleep

- How many hours since they last slept and for how long did they sleep?
- Have they experienced a recent change in their sleeping habits?
- Is there a reason/s for not enough sleep or poor sleep?

5.4.6 Work

- What tasks have they been working on this shift?
- Are those tasks “high-risk” for fatigue? I.e. repetitious/hot conditions.
- If so, how long have they been working on that task?

If a fatigue risk or any other risk is present actions to manage this risk must be considered immediately.

5.4.7 Actions to Manage Fatigue

Identify the level of risk associated with the individual continuing to work without intervention. Assess if the risk is unacceptable and determine which of the following controls measures could be taken to minimise the immediate risk.

5.4.8 Task Rotation

Requires that the person exhibiting signs of fatigue that create an unacceptable risk be rotated out of the job they are currently doing to a task that creates a much lower immediate risk.

5.4.9 Short Break

- A walk around inspection of their work area.
- A change of environment for a brief period.

5.4.10 Assistance Home

- An alternative for a situation where the above options will not alleviate the risks.
- An immediate supervisor may consider that an employee is not fit for work and is advised not to drive.

6 DOCUMENT CONTROL

Document	Primary File Location	Frequency of Review/Update

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PLEASE CONTACT ONE OF THE SIGNATORIES**