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INCLUSION
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WELLBEING

RAIL

ELEMENT 25

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FATIGUE MANAGEMENT

PURPOSE AND SCOPE

This Procedure provides the requirements and guidance needed to manage fatigue for Laing O'Rourke's railway operations. It will need to be read in conjunction with the rail infrastructure manager's fatigue risk management programme where appropriate or it may be necessary to apply the RIM's fatigue management program in its entirety.

Fatigue management applies to all rail safety workers. It is considered that office based workers who work routine day work on weekdays only will have a low level of risk and no particular actions will be required. Their fatigue risk management will be aligned to Primary Standard Fitness for Work

Greater focus is applied to situations where higher fatigue may result. These include:

- Shift work, where workers are rostered to work during any period that people normally sleep;
- Long periods of work, where employees may be required to work over weekends as well as week days
- Extended shifts incurred during shutdowns
- Periods of work in environments where the elements impact on a person's fatigue levels

1.0 PROCEDURES

Laing O'Rourke has a Rail Fatigue Management Policy that outlines Laing O'Rourke's commitment to managing fatigue as part of managing rail safety worker fitness for work. Implementation of Fatigue Management will be overseen by the relevant Project Leader by monitoring data included in monthly reports.

2.0 FATIGUE RISK MANAGEMENT PROGRAMME

The following requirements are those determined by Laing O'Rourke for the railway operations to be undertaken and must be applied unless a client's criteria or that of the project itself especially those in remote locations requires a variation on working hours, shifts, rosters breaks or travel times.

Projects need to conduct a risk assessment for their specific railway operations to determine whether any exception to the shift patterns below can be applied.

To assist in the fatigue risk management process use should be made of the (UK) HSE Fatigue Risk Calculator (linked to this procedure) which requires information to be inserted in the spreadsheet relating to; number of days, period on duty, period off duty, job type, breaks, commuting time, duty length, rest length and average duty per day which then relates to a fatigue risk score being provided.

The mean Daily Score that results from the data put in, is an indicator only and should be supported by other controls to assist in managing fatigue.

Where the railway operations are undertaken under the accreditation of the RIM, approval must be obtained from the RIM for the revised Fatigue Risk Management Program to apply.



Laing O'Rourke shall apply the following fatigue minimisation controls to Laing O'Rourke workers or those of subcontractor / service provider organisations who may in the execution of their work be deemed to be rail safety workers in terms of the Rail Safety National Law:

- No more than 12 hours will be worked at a time including travel except for any unplanned event where work is required to exceed the 12 hour limit. This can also cover shutdown work for which the RIM requires 12 hour shifts at site and then travel above that limit. An extension of time can be authorised by the supervisor to a maximum of 14 hours or the Project Leader where an extension to 16 hours may be required.
- In any extended period the work performed up to the maximum of 16 hours at a time, must ensure workers are not required to drive a motor vehicle or operate heavy plant or equipment between the 13th and 16th hour
- Rest periods must ensure at least a 10 hour break between shifts
- Minimum break times per shift shall include a 30 minute meal break and two 15 minute rest breaks in the period of work before and after the main meal break
- Maximum number of work days not to exceed 12 work days in 14 consecutive days
- A reduction in night shifts must be applied with:
 - 6 consecutive occasions where 8 hours are worked at night (i.e. after 6pm)
 - 5 consecutive occasions where 10 hours are worked at night
 - 4 consecutive occasions where 12 hours are worked at night
- Ensure workers receive a minimum of 48 consecutive hours free of work in a 14-day period
- At least 24 hours off following completion of any block of scheduled night shifts
- Have the capacity to replace or relieve workers where unplanned or unavoidable extended hours have created a risk to workers health and safety
- Should any extension of the requirements set out above be required, a detailed risk assessment must be undertaken and authorised by the respective person prior to the extended period being commenced.

3.0 FATIGUE RELATED RISKS

In accordance with fatigue management processes it is necessary to undertake a risk analysis of the railway operations to be undertaken which will include scrutinising the fatigue issues for each task which includes the following:

- Organisational factors affecting the way in which the rail safety work is carried out such as extended hours and overtime, lift up and lay back hours, commuting, call in and on-call work hours, routes, crew calling practices, work environment
- (climate, noise, vibration, fumes), the suitability of rest environments and occasional circumstances where work may have to be carried out (e.g. in emergencies or under degraded or abnormal conditions).
- Physiological and task factors that could impact the performance of safety working practices such as circadian effects, extended wakefulness, chronic sleep loss, sleep inertia, scheduling of work and non-work time (time on task, rest opportunities, break length and frequency and total work time), high cognitive demand, monotony, boredom and low cognitive demand.
- Social and psychological factors such as work schedule predictability and irregularity, and control over working hours.
- Relevant developments in research related to fatigue.
- Any technology that may be applied to manage work related fatigue.



4.0 RISK FACTORS FOR FATIGUE

Risk factors can be identified through the following:

- Findings from incident investigations
- Discussions with employees
- Employee surveys or questionnaires
- Walk through inspections
- Audit results
- HSE Fatigue Risk Calculator
- Risk registers
- Research findings
- Industry guidance
- Reports on results of monitoring hours of work (see below)
- Fatigue issues reported by workers
- Review of safety performance data relating to fatigue
- Job descriptions and work method statements

5.0 SYMPTOMS OF FATIGUE

The most common symptoms associated with fatigue are:

- Increased sleepiness
- Lack of concentration
- Temporary memory loss
- Slowed reaction times
- Irritability
- Headaches and general body aches
- Mood swings
- Reduced physical strength and capabilities
- Reduced hand-eye coordination
- Poor judgement
- Effects to general health and well-being such as loss of appetite and weight

6.0 IMPACTS OF FATIGUE

Fatigue creates significant risks if engaged in hazardous tasks or changes in performance which include:

- Loss of attention
- Feeling apathetic and lethargic (low energy)
- Inability to anticipate danger
- Short term memory problems
- Poor decision making
- Increased reaction time
- Lower vigilance and alertness levels
- Reduced ability to solve problems
- Impatience and increase risk taking
- Short unplanned naps (micro sleeps)
- Poor performance



During the operation of the project, steps will be put in place for self-reporting of fatigue for individuals who may be affected, to accommodate irregular or un-rostered working. This also includes work performed by subcontractors and for overtime and extension of shifts.

With its 'just culture', Laing O'Rourke encourages workers who perform rail safety work to report if they are unfit to start or continue work as a result of suffering the effects of fatigue.

Laing O'Rourke will implement non-punitive measures to address the situation.

7.0 IRREGULAR OR UN-ROSTERED SHIFT WORK (INCLUDING SUBCONTRACTORS)

Where it is not possible to roster work to predictable start and finish times and/or, where employees are rostered on-call, an alternative method of assessment of fatigue shall be available.

In order to determine whether an employee working under these conditions is fit to commence work, the following guide shall apply:

- An employee can be considered fit-for-work if they have obtained a minimum of 6 hours sleep in the 24 hours prior to commencing work.
- A minimum rest period of 10 hours shall apply between shifts.

8.0 OVERTIME AND EXTENSION OF SHIFTS

When unplanned situations require overtime or extension of shifts, the following steps are required to select workers to extend time at work or provide with overtime shifts on the basis of:

- Ability to work within rostering limits provided in the rostering principles
- Recent rest periods, with priority to those with most recent break of shifts
- Impact on future rostering.

If workers are required to work overtime or extension of shifts, an assessment of the workers fitness to work Fatigue Risk Assessment will be carried out by a Laing O'Rourke representative who has received fatigue management training prior to the extension of work commencing.

If a worker is considered to be "at risk of fatigue" then the following risk mitigations must be implemented:

- Work to be shared by more than one employee with the employees required to be vigilant for symptoms of fatigue
- Employee to be supervised
- Re-arrange work so that the fatigued employee is not undertaking rail safety work.

If none of these steps can be put in place, unless it is safe to do so, the employee's shift must not be extended or worked as an overtime shift.

Further arrangements may need to be put in place when employees work overtime or extended shifts, including:

- Arrangements to get an "at risk of fatigue" employee safely home
- Adjustment to future rosters so that fatigue is not increased and adequate rest
- All such cases must be reported to the Project Leader with these reports included in the monthly safety performance report.



9.0 MONITOR RESULTS

Project Leaders will arrange to have actual working hours compared to rostered hours (and the impact of changes such as shift swapping and overtime) on submission of the employee's timesheet to ensure that rosters and fatigue levels are being managed. Project Leaders must ensure that they receive regular reporting on the results of roster monitoring processes. Where rosters are routinely not met, rosters will be reviewed and amended.

Project Leaders will review all cases where workers have reported they were unfit to commence or continue Rail Safety work due to fatigue.

Incident investigation will be conducted into incidents reported under RSMS **E21 Reporting Notifiable Occurrences** to determine whether fatigue could have been a contributing factor. Investigation reports that include fatigue as a factor in the incident will require a response from the Project Leader.

Project Leaders will ensure that information and education is provided to relevant workers on identifying and managing fatigue.

10.0 REPORTING INTERNALLY / EXTERNALLY ON FATIGUE RELATED ISSUES

The fatigue risk management program determined in terms of Laing O'Rourke's accreditation shall be applied in all instances at the respective project.

Should a breach of the fatigue risk management program occur the Project Leader or designated representative must advise the Rail Safety & Compliance Manager immediately as under the Rail Safety National Law it is deemed to be a Category B Notifiable Occurrence.

The breach must be reported into the HSE reporting system IMPACT within 24 hours and investigation in to root cause and associated preventative and corrective actions raised.

The Rail Safety & Compliance Manager must lodge the Category B Notifiable Occurrence with the Rail Regulator within 72 hours of becoming aware that such a breach of the fatigue risk management program has occurred.

The Rail Safety & Compliance Manager shall include the non-conformance in the monthly rail safety report submitted to the Hub Safety Board.

Any changes to work scheduling practices and procedures set out in the fatigue management program made under Laing O'Rourke's accreditation shall also be notified by the Project Leader or designated representative to the Rail Safety & Compliance well before the changes are introduced, as the such changes must be notified to the Rail Regulator at least 28 days prior to the change is brought into effect. The Rail Safety & Compliance Manager must then notify the Rail Regulator within the required timeframe.

11.0 REVIEW OF FATIGUE MANAGEMENT PROGRAM

The fatigue management program will be reviewed periodically, and in response to incident data, fatigue reports or an operational change that impacts on workload, scheduling or predictability of work hours.

Audits of the fatigue management program will also be conducted in accordance with the SR Inspections, Audits and Corrective Actions Procedure and reported into IMPACT

12.0 LEGISLATION, GUIDES AND STANDARDS

- Rail Safety National Law
- Rail Safety National Regulations
- ONRSR Guideline – Preparation of a Safety Management System
- RISSB Guideline – Fatigue Management
- NTC National Standard for Health Assessment of Rail Safety Workers
- Heavy Vehicle National Legislation - also see **PS Chain of Responsibility** for more guidance

13.0 FORMS AND TEMPLATES

- Fatigue Risk Assessment
- HSE (UK) Fatigue Risk Calculator