Fatigue Risk
Risk-based Integrated Fatigue Management

With people’s safety at stake, managing risk is an important and necessary part of every workplace. Zurich Risk Engineering, in partnership with InterDynamics, have developed a Fatigue Risk Management System (FRMS) to help our customers manage the risks associated with fatigue.

Effectively managing the risks associated with fatigue is much more than simply ‘stopping work when you’re tired’.

Until recently, many organisations have been reluctant to assess the level of fatigue inherent within their operations due to a lack of intervention tools (other than stopping work). However today there are many intervention tools available such as fatigue based scheduling, powernaps, alertness measurement devices, loss investigation and of course, sleep.

The difficulty is putting these interventions/controls onto a risk based framework to effectively manage the risks associated with fatigue.

In response to this, InterDynamics in partnership with Zurich Risk Engineering developed a Fatigue Risk Management System (FRMS) that is essentially an integrated, risk-based solution to Fatigue Management. This solution is an interactive, coordinated process that:

• Determines a Risk Tolerance to either compare with other groups or set as the organisational risk tolerance level
• Sets specific Fatigue Tolerance Levels for selected jobs or tasks
• Uses Fatigue Tolerance Levels to identify appropriate controls/procedures for managing fatigue-related risk and ensuring safe job activity
• Records the agreed controls/procedures so they are available to be used later.

FAID® – Fatigue Assessment Software

FAID® software is used to estimate work-related fatigue based on hours of work. As part of an overall company Safety Management System, this software helps to identify fatigue exposures and monitor the effects of risk improvements related to hours of work. The program is derived from research developed and validated at the Center for Sleep Research, University of South Australia, by Dr Adam Fletcher and Professor Drew Dawson.

FAID® Methodology

The statistical models in FAID® estimate work-related fatigue based on the following 4 factors:

1. Time of day of work and breaks
2. Duration of work and breaks
3. Work history in the preceding 7 days
4. Biological limits on recovery sleep.

This is all derived from hours of work input (which can be entered manually or imported (typically from an Excel spreadsheet). FAID® scores between 80 and 100 are equivalent to the predicted level of work-related fatigue achieved after 23–24 hours of continuous sleep deprivation. Performance impairment at the same levels of sleep deprivation has been associated with a blood alcohol concentration over 0.05%.

Fatigue Hazard Analysis (FHA)

A Fatigue Risk Management System (FRMS) Fatigue Hazard Analysis establishes a bridge between the organisational Fatigue Risk Management Policy and the operational procedures, activities and risk controls. This interactive process supports the development of appropriate controls and protection for tasks exposed to, or vulnerable to, fatigue.

Fatigue Risk Management System (FRMS)

A Fatigue Risk Management System (FRMS) is a framework for Risk-based Integrated Fatigue Management that has been utilised by the transport, mining and health care sectors. A Fatigue Risk Management System (FRMS) includes the following tools:

1. FAID® – diagnostic software that analyses hours of work and provides an objective fatigue assessment of work patterns
2. HAZAID™ – an interactive, visual tool that standardises the FHA process. HAZAID™ prompts participants to catalogue hazards and assess fatigue-risk associated with their roles and working environment
3. GRAID FRMS™ – an interactive fatigue-related risk grading tool that supports results from the hours of work analysis and risk assessment process. GRAID FRMS™ produces a priority order for implementing the controls designed to manage fatigue-related risk appropriately.
4. GRAID IT™ – an Investigation Tool used to rate the likelihood of fatigue contributing to an occurrence of a specific situation / loss. Upon application of this tool, the likelihood of fatigue contributing to the specific situation / loss is rated from Low to Very High.

FAID® is a registered trademark of Interdynamics Pty Ltd.

Fatigue is defined as a dynamic balance between two competing forces. That is, forces producing fatigue and forces reversing the effects of fatigue, that is, recovery.

Information from FAID® can assist in evidencing a Fatigue Tolerance Level for an operation.


Zurich Australian Insurance Limited
ABN 13 000 296 640, AFS Licence No. 232507
Head Office: 5 Blue Street, North Sydney NSW 2060

Client Enquiries
Telephone: 132 687
www.zurich.com.au