Risk assessment matrix

'Bringing the HS&E management system to life'

1.0
Introduction

1.1 Purpose

A good appreciation of the health, safety and environment (HS&E) risks in your area of responsibility helps to correctly direct resources for improvement. The *Risk assessment matrix* (RAM) is a tool to rank and assess the risks. This booklet describes a short workshop that will help you and your colleagues to:

- apply the RAM properly and frequently as a natural way to communicate and plan for HS&E improvement;
- better appreciate your personal role in managing the HS&E risk in your area of responsibility, and
- come to a good understanding of your role in demonstrating that risk is managed to as low as reasonably practicable (ALARP) levels.

1.2 Risk assessment matrix description

The RAM standardises qualitative risk assessment and facilitates the categorisation of risk to people, assets, community and environment (PACE). The matrix axes are consequences and likelihood.

Assessing the risk of a particular scenario should be done in sequence, i.e. first the potential consequences are estimated and only thereafter the likelihood of such consequences occurring are assigned. The axes meet at a coloured square, that designates the tolerability of the risk (blue, yellow and red).

Consequences
A scale of consequences from zero to five is used to indicate increasing severity. The consequences are those credible scenarios (taking the current organisational controls and circumstances into consideration) that can develop from a hazard. The *potential* consequences, rather than the actual ones, are used. These can be thought of as the consequences that could have resulted from the hazard if things went out of control.

Likelihood
After assessing the consequences, the likelihood on the horizontal axis is estimated on the basis of historical evidence or experience that such consequences have materialised within the industry, your organisation or a smaller unit. Note that this should not be confused with the likelihood that the hazard is released: it is the

likelihood of the estimated consequences occurring. For example, a hazard has been identified that several times each year creates a situation in which people could be killed. However, in the history of the organisation it has never resulted in a fatality. The likelihood is 'B' rather than 'D'.

1.3 Guidance

Estimation of likelihood and consequences are not an exact science. The consequence estimates are based on envisaged credible scenarios of what 'might happen'. Likelihood estimates are based on historical information that such a scenario has happened under similar conditions, bearing in mind that circumstances will never be exactly the same.

1.4 Who is this tool for?

The RAM can be used by teams, inluding managers and supervisors, in order to risk assess operations that they are involved in or responsible for. The result should be: a) to help the team understand the effectiveness of the controls/barriers they have in place to manage risk, and b) to improve those controls/barriers. It helps involve people in the HS&E management system and 'brings the HS&E management system to life'.

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