Volunteer Marine Rescue Brisbane Inc

Providing a Safer Marine Environment for Our Community

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Risk Management

1.0 Introduction

Risk Management refers to the identification and assessment of the risks of injury or illness present at a workplace and the control of those risks of injury or illness.

2.0 References

Workplace Health & Safety Act

3.0 Detailed Information

3.1 Definitions

a) **Purpose** - The purpose of risk assessment is to identify the hazards and assess the risks arising from or associated with the type of activity being carried out.

b) **Hazard** - Means a source or potential source of injury or illness. For example, launching the Rescue Vessel from the boat ramp creates the hazard of a person slipping. This hazard of slipping may present no risk of injury to a person's sight or hearing however, it may present considerable risk of injury in the form of broken bones or severe lacerations.

c) **Risk** - Means the likelihood of the hazard resulting in an injury or illness together with the seriousness of the injury or illness. In other words, a high risk task is one where the chances of getting injured are very high or where the injuries associated with the task are very serious or both.

d) **Risk Assessment** - Evaluates the risk associated with a hazard. "Risk Assessment" means identification, analysis and assessment of the injury and illness risks present. In the example of launching the Rescue Vessel, a risk assessment would consider the likelihood of limb injury occurring depending on the circumstances (whether non slip shoes are worn, the condition of the surface of the boat ramp etc).

The assessment would also consider the seriousness of potential injuries arising from the hazard. For example, slipping on a boat ramp presents a risk of bodily injury ranging from a simple strain to a major breakage if a limb or worse.

In addition to determining the risks that workers are exposed to, the risk assessment should consider a risk to others at a workplace, such as sub-contractors, visiting workers, and members of the public. Remember that the duty to protect persons from risk extends to protection of others under the Act.

The risk assessment should identify methods to reduce risk either by changing work practices and procedures where practicable, or, as a last resort, by the use of suitable personal protective equipment.

3.2 Procedure

A risk assessment procedure usually includes the following steps:

a) Identify the hazards (source of injury or disease)
b) Analyse the consequences (potential injury or disease)
c) Assess the risk (frequency, duration and outcome of the consequences)
d) Determine what action to take (evaluate methods of removing, reducing or controlling the risk)

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NOTE: Risk Assessments should be revised when changes occur or new equipment or new substances are introduced.

a) Identify the Hazards

There are a number of ways to identify potential sources of injury or illness. Selection of the appropriate procedure will depend on the type of work processes and hazards involved.

Procedures may range from a simple checklist for a specific piece of equipment or substance to a more open-ended appraisal of a group of related work processes. A combination of methods may yield the most complete results. Methods of identifying workplace hazards include:

- Walk- through survey of the workplace can identify sources of hazards. It is particularly helpful if the person with obligations conducts the survey with worker(s). For more complex work processes the use of an outside expert may be required.
- "Near miss", incident, accident and injury data should be reviewed to help identify problem areas. The use of data, however, should not be solely relied on to identify hazards. Using data requires a suitable reporting and recording system to be in place, as well as a certain number of incidents, to be reliable. Also, such data often covers losses only and not potential losses, injuries and diseases.
- Work process evaluation, such as hazard analysis, can be used to determine and evaluate the tasks associated with work processes, which give rise to hazards.
- Consultation with worker(s) is one of the easiest and most effective means of identifying hazards. Worker(s) are usually well aware of what can go wrong and why, based on their experience with a job.
- Material Safety Data Sheets and Product Labels are important sources of information regarding hazardous substances and their control.
- Specialist practitioners and representatives of industry associations and government bodies may be of assistance in gathering health and safety information relevant to site risks or injury.

Some hazards are inherent in the work process, such as mechanical hazards, noise or hazardous substances. Other hazards result from equipment failures. Consideration should also be given to predictable misuse of equipment and other systems in particular. Once a hazard has been identified it can be grouped into one of the hazard categories listed in the table below.

Hazard Category	Example of Hazards
Gravity	Falling objects, falls of people
Kinetic Energy	Projectiles, penetrating objects
Mechanical Energy	Caught between, stuck by, stuck against
Hazardous Substances	Skin contact, inhalation
Thermal Energy	Spills and splashes of hot matter
Extremes of Temperature	Effects of heat or cols
Radiation	Violet, arc flashes, micro waves, lasers
Sound	Hearing damage
Biological	Micro-organisms
Electrical	Shock, burns
Vibration	Health effects

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The conclusion of the first step of the risk assessment should result in a list of hazard sources, the particular form in which that hazard occurs, where it occurs and the persons exposed to that hazard.

b) Analyse the Consequences

Analyse the effects and consequences of hazards by determining what are the potential injuries and diseases which may result from the hazards.

Effects can be either direct injury effects or those arising from longer-term exposure to the hazards. Direct injury effects include cuts, abrasions, fractures and crush and compression injuries. Long term exposure to some hazards can cause conditions like deafness, cancers, respiratory damage and dermatitis. The most common hazards in terms of bodily injury or disease are those which result in:

- Strain/overuse injuries and disease to back, shoulder, wrist etc
- Cut and abrasion injuries to the eyes, hands, fingers, feet and head
- Impact and crush injuries to the head, feet and fingers
- Burns (by heat, light or chemicals) to the eyes, feet and skin
- Noise induced hearing loss
- Toxic effects (short or long term) to respiratory system or skin, resulting in poisoning, cancers, or dermatitis

The conclusion of the second step of the risk assessment should result in a list of injury and disease consequences arising from the hazards identified in the first step. In general, these should be stated from the most to the least serious eg from death by crushing to abrasion. The potential for fatal injury should be considered for each hazard type identified.

c) Assess the Risks

Assess the risks of a job by evaluating the frequency of injury or illness, the duration of exposure to injury or disease sources and the likely severity of the outcomes.

Assessment of the following three factors will determine the actual risk for persons involved in a particular work process.

Frequency of Injury means how often a hazard may result in an injury or disease. This may range from frequent to extremely remote depending on the nature of the hazard. Past injury records may assist in determining the frequency of injury.

Duration of Exposure means how long a person is exposed to the risk. This can range from infrequent to continuous exposure to the hazard. Duration of exposure is the percentage of working hours during which worker(s) are exposed to a particular risk.

Outcome means the consequences or potential severity of injury. Outcome can range from simple bruises to fatal injuries. The expected severity of injury or disease may be determined from past experience or available information on the type of work to be undertaken.

Incomplete data or incomplete information regarding hazards of a work process may complicate the task. The risk assessment requires good judgement and awareness of the potential risks of a work process. It is imperative that the person undertaking the risk assessment, therefore, has knowledge and experience of the work process.

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d) Determine What Action to Take
The final step in risk assessment is to determine the control measures that need to be taken in order to eliminate or reduce the risks. The next section outlines a procedure to determine appropriate control measures to eliminate or reduce risk.

3.1 Identifying Control Measures

Control measures are designed to:

- To reduce the risks of a hazardous work process and/or to minimise the effects of injury or illness
- To reduce the risks of exposure to a hazardous substance

A simple example is a chemical process that may involve an accidental chemical spill. Control measures can be taken to ensure that a spill will not occur, for instance, by isolation and secure storage of the chemicals.

Where such corrective measures are not practicable because transferring chemicals is an integral part of the work process, provision of protective equipment, such as protective footwear and gloves, will minimise injury in the case of a spill. In some instances, a combination of control measures may be appropriate. The full range of methods of reducing risks can be grouped into the categories outlined in the following table.

Control Measure	Action Taken or Result Achieved
Design	Allows hazards to be designed out and control measures to be designed in
Substitution	Replacing the material or processes to reduce or eliminate risk
Redesign	Caught between, struck by, struck against
Separation	Isolating the hazard from persons by enclosing or guarding
Administration	Adjusting the time or conditions of risk exposure
Personal Protective Equipment	Using appropriately designed and properly fitting equipment where other controls are not practical

Preferred Controls are design, substitution, redesign, separation or administration should preferably deal with the control of risks of workplace injury and disease. These controls generally reduce or minimise risk in a more reliable manner than personal protective equipment.

a) Control Through Personal Protective Equipment
Personal protective equipment should only be used when other methods of control are not available. Factors which need to be considered include:

- The nature of the work or the work process concerned
- The severity of any potential injury or disease
- The state of knowledge about the injury or disease related to the work or process
- Information available to employers about methods of preventing injury or disease associated with a particular hazard or risk
- The availability and suitability of methods to prevent, remove or mitigate causes of injuries or diseases associated with a hazard or risk

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- The costs of preventing, removing or mitigating that injury or disease are prohibitive in the circumstances

b) Temporary Use

There are some situations where temporary use of personal protective equipment may be necessary. These include:

- Where it is not technically feasible to achieve adequate control of the hazard by other measures. In these cases, the hazard should be reduced as far as practicable by other measures and then, in addition, suitable personal protective equipment should be used to secure adequate control

- Where a new or revised risk assessment indicates that personal protective equipment is necessary to safeguard health and safety until such time as adequate control is achieved by other methods, for example, where urgent action is required because of plant failure, and

- During routine maintenance operations. Although exposure to hazards occurs regularly during such work, the infrequency and small number of people involved may make other control measures not practicable.

4.0 Summary

These procedures should help to ensure a safe working environment in which to conduct our rescue activities.