***SECTION 3*** *Framework for Health and Safety Management*

HEALTH AND SAFETY RISK ASSESSMENT AND CONTROL PROCEDURE

PURPOSE

To enable organisations to complete and document health and safety risk assessments in a uniform and consistent manner.

The procedure also contains information relating to the appropriate selection and consideration of control measures for identified risks.

GENERAL REQUIREMENTS

The development and management of an organisational risk register enables the formal identification and quantification of key Health and Safety risks. The risk register and review process will enable treatments and interventions to be tracked and reported on.

The Health and Safety risk register details key Health and Safety risks associated with the organisation’s activities. The risk management process uses the S.A.F.E.R approach to identifying and managing hazards and risks.

 See it to identify and categorise hazards

 Assess it to assess and rate the possibility of hazards causing harm

 Fix it to control the identified hazards

 Evaluate it to re-assess the potential harm after controls have been put in place

 Review it to review the effectiveness of the controls implemented

In addition to the risks detailed on organisational risk register, ongoing site specific hazard identification and risk assessment will be undertaken through the development of hazard profiles and JSAs. Refer to the Hazard Identification, Risk Assessment and Control procedure for more detail and information.

The organisation should ensure that a formal risk assessment is completed and maintained when:

 Knowledge of how a hazard may cause injury or illness is uncertain.

 The work activity involves multiple hazards, and the workers involved are not aware how those hazards interact to produce new or greater risks.

***PROCEDURE***

 Workplace changes may impact on the effectiveness of existing control measures.

 New or different risks are associated with a change in work systems, activities or work location.

**RISK ASSESSMENT PROCESS**

The organisation shall undertake a risk assessment process that covers the entire scope of operations and activities. The risk assessment shall include input and representation from workers involved in the activities, specialist subject matter experts, the health and safety manager and their team (if applicable).

The initial, organisational wide risk assessment will be captured and recorded on the health and safety risk register. This register is used to:

 Provide information and oversight to management teams and executive about the nature and management of critical risks.

 Inform the health and safety committee of the status of health and safety risks and controls.

 Develop and monitor additional controls for activities with less than acceptable residual risk ratings.

The risk register shall include specific identification and flagging of critical risks. These are the risks that have been identified

as being of having significant consequence. Critical risk areas and controls shall be reviewed by the organisations health and safety strategic management group. Where incidents or near misses occur that involve critical risks, additional controls and preventative measures implemented shall be communicated to the organisation’s management team and Health and Safety

Committee via monthly health and safety reports. Inspection and audit activities shall be undertaken to enable the management team to be provided with assurance that effective controls are in place and are effective.

The Risk Register is reviewed and updated:

 After incidents or near misses that involve high risks, both within the organisation’s activities and if relevant within the New Zealand water industry.

 On a six monthly basis as part of wider project risk reviews.

 To incorporate the recommendations of any audits conducted internally or by external parties.

 To incorporate any additional controls that have been identified and implemented through worker engagement and consultation processes.

**RISK RATING AND DESCRIPTORS**

***SECTION 3*** *Framework for Health and Safety Management*

The risk register template, included at the end of this procedure, provides a model risk rating matrix and associated risk descriptors. Where organisations have established enterprise wide risk matrices and descriptors, these should be used in the health and safety risk assessment process.

***PROCEDURE***

***Figure 1: Risk Assessment Table***

**HEALTH AND SAFETY IN DESIGN**

Health and Safety in design outcomes shall be captured and recorded on the risk register and be used to track and transfer information relating risk control measures through the design, construction and asset operation phases.

Activities and workshops (e.g. Health and Safety in Design) to identify risks at design, construction and operational stages will involve input from effected workers to ensure on-going consultation and engagement. The risk register shall be made available for discussion and review by the Health and Safety Committee as part of the monthly agenda.

Refer to the Water New Zealand Health and Safety in Design procedure for more detail and information.

**Risk Assessment Tables**

**The following matrix is then used to determine the appropriate magnitude for each risk**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | Consequence **( C)** | |  |
|  |  |  | Insignificant | Minor | Moderate | Major | Severe |
| Likelihood **(L)** |  | | **1** | **2** | **3** | **4** | **5** |
| Almost Certain | **5** | | Low | Medium | High | Very High | Very High |
| Likely | **4** | | Low | Medium | High | High | Very High |
| Possible | **3** | | Low | Medium | Medium | High | High |
| Unlikely | **2** | | Low | Low | Medium | Medium | High |
| Rare | **1** | | Low | Low | Low | Medium | Medium |

|  |  |
| --- | --- |
| **Risk Response** | |
| **Rating** | **Required Response** |
| Very High | Preferred treatment options: avoid, transfer or mitigate.  Requires immediate escalation and active management through continual monitoring. Review treatment strategies systematically to determine their adequacy and effectiveness against the required outcomes.  Further controls are needed unless impractical or financially non-viable. |
| High | Preferred treatment options: avoid, transfer or mitigate.  Requires escalation through routine reporting and active management through systematic monitoring. Review treatment strategies routinely to determine their adequacy and effectiveness against the required outcomes.  Additional controls may be required to protectorganisations interest and business. |
| Medium | Preferred treatment options: mitigate or accept.  Manage by specific monitoring or response procedures, with clear management responsibility. |
| Low | Preferred treatment options: accept.  Manage by existing routine procedures and work practices. |

***Figure 2: Risk Consequence and Likelihood Descriptors***

&days lost

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **C = Consequence** | Score |  | Description |  |  |  |
| Insignificant | 1 | No or only minor personal injury; First Aid needed but no days lost | | | |  |
| Minor | 2 | Minor injury; Medical treatment & no time lost | | | |  |
| Moderate | 3 | Injury; Possible hospitalisation & days lost | | | |  |
| Major | 4 | Single death &/or long-term illness or multiple serious injuries | | | |  |
| Severe | 5 | Multiple Fatality(ies) or permanent disability or ill-health | | | |  |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **L = Likelihood** | Score |  | Description |  |  | Estimated  Probability |
| Rare | 1 | May occur in rare circumstances only | | | | < 2% |
| Unlikely | 2 | Is unlikely to occur in the current operational environment | | | | 2-20% |
| Possible | 3 | Will possibly occur in the current operational environment | | | | 21-60% |
| Likely | 4 | Is likely to occur in the current operational environment | | | | 61-90% |
| Almost Certain | 5 | Almost certainly will occur | | | | > 90% |

RISK CONTROL

Risk must be controlled to as low as reasonably practicable in line with the hierarchy of control. The hierarchy of hazard control is a system used across industries to minimize or eliminate exposure to hazards. It is a widely accepted system supported and promoted by health and safety professionals, legislators and workplace inspectors.

The hierarchy of controls should be used when considering and identifying controls that may be put in place. More effective controls, such as elimination or engineering controls must be applied where reasonably practicable, rather than immediately using lower level controls, such as PPE.

***Elimination***

Eliminating the hazard—physically removing it—is the most effective hazard control. For example, if employees must work high above the ground, the hazard can be eliminated by moving the piece they are working on to ground level to eliminate the need to work at heights.

***Substitution***

Substitution, the second most effective hazard control, involves replacing something that produces a hazard (similar to

elimination) with something that does not produce a hazard—for example, replacing lead based paint with acrylic paint. To be

an effective control, the new product must not produce another hazard. Because airborne dust can be hazardous, if a product can be purchased with a larger particle size, the smaller product may effectively be substituted with the larger product.

***Engineering Controls***

These do not eliminate hazards, but rather isolate people from hazards. Capital costs of engineered controls tend to be higher than less effective controls in the hierarchy, however they

may reduce future costs. For example, a crew might build a work platform rather than purchase, replace, and maintain fall arrest equipment. "Enclosure and isolation" creates a physical barrier between personnel and hazards, such as using remotely controlled equipment. Fume hoods can remove airborne contaminants as a means of engineered control.

***Administrative Controls***

Administrative controls are changes to the way people work. Examples of administrative controls include procedure changes, employee training, and installation of signs and warning labels. Administrative controls do not remove hazards, but limit or prevent people's exposure to the hazards, such as completing road construction at night when fewer people are driving.

***Personal Protective Equipment***

Personal protective equipment (PPE) includes gloves, respirators, hard hats, safety glasses, high-visibility clothing, and safety footwear. PPE is the least effective means of controlling

***SECTION 3*** *Framework for Health and Safety Management*

hazards because of the high potential for damage to render PPE ineffective. Additionally, some PPE, such as respirators, increase physiological effort to complete a task and, therefore, may require medical examinations to ensure workers can use the PPE without risking their health.

***PROCEDURE***

ATTACHMENTS

Attachment 1: Risk Register Template

REFERENCES

**WATER NEW ZEALAND PROCEDURES & GUIDELINES:**

***Health and Safety Procedures:***

 Contractor Health and Safety Management

 Job Safety Analysis

 Health and Safety in Design

LEGISLATION, REGULATION AND STANDARDS

 Health and Safety at Work Act 2015

 AS 4804 - 1997 Occupational health and safety systems - General guidelines on principles, systems and supporting techniques.

 AS/NZS 31000 - 2009 Risk Management