Guidelines for Hazard Identification and Risk Assessment

Public Service Commission
Centres of Excellence
Integrated Health, Safety and Wellness

Last revised: April 2019
Last reviewed: April 2019
Next review: May 2020

Saskatchewan
Table of Contents

1. Purpose ................................................................................................................................................. 3
2. Introduction .......................................................................................................................................... 3
3. Definitions ............................................................................................................................................. 3
  3.1 Hazard ................................................................................................................................................. 3
  3.2 Risk ...................................................................................................................................................... 3
4. Roles and Responsibilities ..................................................................................................................... 4
  4.1 Employer (Deputy Minister) ............................................................................................................... 4
  4.2 Manager (Assistant Deputy Minister/Executive Director/Director/Manager) ................................... 4
  4.3 Supervisor (Frontline) ......................................................................................................................... 4
  4.4 Worker (Employee) ............................................................................................................................. 5
  4.5 Occupational Health Committee/Representative .............................................................................. 5
5. Hazard Identification ............................................................................................................................. 5
6. Risk Assessment .................................................................................................................................... 6
  6.1 Definition ............................................................................................................................................ 6
  6.2 Procedure ........................................................................................................................................... 7
    6.2.1 Apply a Risk Matrix ....................................................................................................................... 7
    6.2.2 Prioritize Hazards ......................................................................................................................... 8
    6.2.3 Determine Controls ...................................................................................................................... 8
    6.2.4 Review Hazard Assessments .................................................................................................... 8
    6.2.5 Document and File ....................................................................................................................... 8
7. Resources and Tools ............................................................................................................................. 9
  7.1 Tools .................................................................................................................................................. 9
  7.2 Additional Resources .......................................................................................................................... 9
  7.3 Supportive Policies ............................................................................................................................. 9
Appendix A: Hazard Identification and Assessment Worksheet ................................................................. 10
Appendix B: Signage to Promote Awareness.............................................................................................. 11
1. Purpose

This document has been developed by the Safety Champion Operational Committee and endorsed by the Safety Champion Council, to provide guidance to Executive Government workplaces on how to effectively identify, evaluate and control health, safety and environmental hazards in the workplace through a system of hazard identification and control.

2. Introduction
Hazard identification, and the steps taken to minimize the risks associated, are a critical component to working safely. The Hazard Identification and Risk Assessment guidelines will provide a basis for hazard control.

3. Definitions
3.1 Hazard
Any source of potential damage, harm or adverse health effects on something or someone. The Canadian Standards Association (CSA) Z1002 Standard "Occupational Health and Safety – Hazard Identification and Elimination and Risk Assessment and Control", uses the following terms:
- Hazard – a potential source of harm to a worker; and,
- Harm – a physical injury or damage to health.

In general, a hazard is the potential for harm or an adverse effect (e.g., to people as health effects, to organizations as property or equipment losses, and/or to the environment).

3.2 Risk
The chance or probability that a person will be harmed or will experience an adverse health effect if exposed to a hazard. It may also apply to situations with property or equipment loss, or harmful effects on the environment.

The Canadian Standards Association (CSA group), CSA Z1002 Standard uses the following terms:
- Risk – the combination of the likelihood of the occurrence of a harm and the severity of that harm; and,
- Likelihood – the chance of something happening.
4. Roles and Responsibilities
Occupational Health and Safety (OHS) legislation outlines legal requirements that must be met by the Workplace Responsibility System (the Employer, Supervisor and Worker). Hazard identification and risk assessment is a formal process used to identify hazards and provide a prioritization mechanism for addressing risk and everyone plays a role.

4.1 Employer (Deputy Minister)
Employer should ensure a hazard identification and risk assessment process is effectively implemented throughout the ministry.

4.2 Manager (Assistant Deputy Minister / Executive Director / Director / Manager)
The roles and responsibilities include:
- ensuring hazards are identified, assessed, monitored and controlled;
- ensuring hazards are prioritized using a risk assessment process;
- ensuring required training/education provides workers with adequate knowledge and skill for protection from recognized and potential hazards; and,
- ensuring provision of appropriate personal protective equipment.

4.3 Supervisor (Frontline)
The roles and responsibilities include:
- leading in the identification, evaluation, monitoring and elimination or control of hazards at the workplace;
- requesting assistance to evaluate and monitor hazards as required from reliable sources (e.g., local Occupational Health Committee(OHC)/representative, safety professional, Safety Champion, OHS Division of Saskatchewan, etc.);
- implementing hazard controls and monitoring for effectiveness, and revising as required;
- educating and training employees under their supervision adequately so they may recognize and protect themselves and others from hazards (e.g., proper work procedures, etc.);
- providing employees with appropriate personal protective equipment, and ensuring correct use and maintenance; and,
- monitoring and coaching employees for compliance with safe work practices.
4.4 Worker (Employee)
The roles and responsibilities include:
• reporting any hazards to the supervisor;
• participating in the evaluation, monitoring, and/or control of hazards;
• informing the supervisor of any failure of hazard control equipment/processes;
• complying with safe work requirements that include maintaining and wearing appropriate personal protective equipment as required, and participating in education and training; and,
• participating, where possible, in the OHS system by being part of the OHC, fire safety, first aid attendant, or other similar workplace support mechanisms.

4.5 Occupational Health Committee/Representative
The roles and responsibilities include:
• monitoring for effective hazard identification and risk assessment processes in the workplace; and,
• assisting the supervisor where applicable with hazard recognition and risk prioritization.

5. Hazard Identification
Hazards can arise from various activities, situations or substances and are classified into broad categories, such as physical, biological, chemical, environmental, ergonomic and psychological.

Hazard Identification is performed in an effort to assess the potential hazards a worker may be exposed to. Hazard identification can be formal or informal and occur during:
• regular inspections,
• investigations after an incident,
• performing an audit to a set standard,
• assessment of a procedure or task,
• pre-job planning,
• OHC recommendations,
• job safety analysis,
• part of workplace discussions or work unit meetings,
• after a work refusal,
• any time a new process is introduced,
• a new piece of equipment is added,
• a change is made to an operation, and,
• a significant addition or alteration is made to a workplace, etc.

Formal hazard assessments involve the identification of all jobs and tasks performed by groups of workers, the assessment of each task for hazards, and the prioritization of the hazards based
Performing a formal hazard assessment is the most thorough way to identify and control hazards proactively.

6. Risk Assessment

6.1 Definition

A risk assessment is a thorough look at identified hazards (those things, situations, processes, etc. that may cause harm). After a hazard is identified, a risk assessment will evaluate how severe and likely the risk of harm is, and then assist in deciding what measures should be in place to effectively prevent or control harm from happening.

Risk assessment is the process where:
- the risk associated with the hazards identified is analyzed or evaluated based on the level of 1) severity, 2) probability, and 3) frequency; and,
- appropriate ways to eliminate or control the hazard are determined so they can be put in place. Constraints and limitations are considered when identifying controls.

Risk assessments form an integral part of the Health and Safety Management System, and aim to:
- determine the level of harm or damage a hazard may cause;
- identify who may be at risk (employees, visitors, contractors, the public, etc.);
- determine if existing control measures are adequate, or if more should be done;
- prevent injuries or illnesses when done at the design or planning stage, and before an incident occurs; and,
- prioritize hazards and control measures.

Risk assessments should be led and completed by supervisors, dedicated competent persons or by external expertise, and involve employees who perform the tasks. When doing a risk assessment, take into account the:
- methods and procedures used to perform tasks;
- actual and potential exposure of workers to hazards; and,
- measures and procedures necessary to control exposure to the hazard(s) by means of engineering controls, work practices, hygiene practices and facilities.

Performing a risk assessment requires:
- evaluation of the potential severity of an injury or illness, its probability of occurring and how often someone or something is exposed to the identified hazards;
- a review of all available health and safety information about the hazard such as incident reports from the workplace, the ministry, or other similar workplaces. Has this hazard led to harm before? If yes, what was the severity? You may also refer to other
literature including Material Safety Data Sheets, manufacturer’s specifications and information, results of testing, etc.;
• identification of actions necessary to eliminate or control the risk;
• monitoring and evaluation once controls are put in place to confirm the risk of harm is controlled; and,
• keeping any documentation or records that may be necessary. Documentation may include detailing the process used to assess the risk, outlining any evaluations, detailing how conclusions were made, the results of the actions, etc.

6.2 Procedure
6.2.1 Apply a Risk Matrix

The risk matrix adopted to support Foundational Pillars, is a risk assessment tool from the perspective of: Severity + Probability + Frequency (S+P+F) = Risk.

Ranking hazards requires knowledge of workplace activities, urgency of situations, and most importantly, objective judgement (facts versus opinion). There are multiple ways to determine the level of risk. A single technique will not apply in all situations. If your ministry has pre-determined risk assessment technique, begin with using that one.

For simple or less complex situations, an assessment can literally be a discussion or brainstorming session with those who have knowledge and experience with the hazard. For more complex situations, a team of knowledgeable personnel who are familiar with the work is needed to complete a formal assessment with a report and recommendations. In all cases, checklists or a risk matrix can be helpful.

Appendix A: Hazard Identification and Assessment Worksheet provides a tool to list and prioritize hazards to determine which hazards have the highest potential to cause injury or illness, based on the calculated level of risk. The classification of risk (high, medium, low) provides a priority focus for implementing hazard control measures to minimize the risk of injury or illness to employees.

Appendix A: Hazard Identification and Assessment Worksheet lists out all identified health and safety hazards to which workers may be exposed. Involve workers who perform the tasks and/or are exposed to the hazards in this process to ensure nothing is overlooked.

After the hazards are identified, calculate their risk ratings by asking the following three questions:
• What is the potential severity (S) to employees well-being if the hazards are not controlled?
• What is the probability (P) of an incident occurring?
• What is the frequency (F) of exposure to the hazard?

7
6.2.2 Prioritize Hazards

Hazard prioritizing is based on the ratings (total S+P+F scores), indicating the level of risk a hazard poses to the employee.

Use Appendix A: Hazard Identification and Assessment Worksheet to determine the risk rating for each hazard identified, and rank the hazard in order of priority based on the calculated level of risk. This will allow the workplace to address hazards based on the highest risks first:

- Risk matrix with scores of 7-9 poses a **HIGH RISK** and requires attention through implementation of immediate controls. It may also require more complex and significant changes that will take time to implement fully in order to prevent or reduce the level of risk to the worker;
- Risk matrix with scores of 5-6 poses a **MEDIUM RISK** and requires attention or further hazard control measures or changes to prevent or reduce the level of risk to the worker; and,
- Risk matrix with scores of 3-4 poses a **LOW RISK** and requires monitoring on the part of management and employees to ensure that the risk level of hazard does not increase.

6.2.3 Determine Controls

Address identified hazards by assigning methods of control to eliminate or reduce the hazard. The most effective controls can be determined based on legal requirements, manufacturer’s specifications, organizational rules, industry best practices, and workers’ input. Use Appendix A: Hazard Identification and Assessment Worksheet and record the recommended control methods for each hazard, the date of implementation and the names of those who participated in the assessment, and control process.

6.2.4 Review Hazard Assessments

It is important to follow up with periodic reviews to ensure control measures are working and effective. Include a review schedule that is dated and ensures the control is working and prevents the development of conditions that may put workers at greater risk. Once a control is assessed to be working well, a review should continue to take place annually at a minimum.

6.2.5 Document and File

Legislation requires that hazard assessments be kept on file. Share a copy with the OHC/representative and your manager. Include documentation of the corrective action taken to correct the hazard.
7. Resources and Tools

7.1 Tools

Appendix A: Hazard Identification and Assessment Worksheet is a useful tool to provide assistance in hazard identification and risk assessment.

7.2 Additional Resources

- **Hazard and Risk** – Canadian Centre for Occupational Health and Safety; and,
- **Foundational Pillars** – WorkSafe Saskatchewan.

7.3 Supportive Policies

The supportive policies that can be referred to during the assessment include:

- PS 704 Workers’ Compensation; and,
- PS 818 Occupational Health and Safety Incident Reporting and Investigation.

For inquiries, please contact Integrated Health, Safety and Wellness Branch, 1-2350 Albert Street, Regina, SK S4P4A6 or Email us at ihswb@gov.sk.ca.
## Appendix A: Hazard Identification and Assessment Worksheet

<table>
<thead>
<tr>
<th>Ministry, Division, Branch, Work Unit, Location:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment Completed By (Names and Positions):</td>
</tr>
<tr>
<td>Assessment Completion Date:</td>
</tr>
<tr>
<td>Hazard(s) Identified</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Score of 7-9 = High  
Score of 5-6 = Medium  
Score of 3-4 = Low
Appendix B: Signage to Promote Awareness

Hierarchy of Controls

- **Elimination**: Remove the hazard from the workplace
  - Elimination is the preferred way to control a hazard and should be used wherever possible

- **Substitution**: Substitute hazardous materials or machines with less hazardous ones
  - Use a less hazardous solvent instead of trichloroethylene, a cancer hazard
  - Substitute a product that is in dry powder form with the pellet form to reduce airborne dust and the inhalation hazard

- **Engineering Controls**: Design or modifications to plants, equipment, systems and processes that reduce the source of exposure
  - Autamnate hazardous processes
  - Use mechanical lifting devices or transportation instead of manual methods
  - Enclose and isolate the hazard from workers
  - Implement a local exhaust ventilation system

- **Administrative Controls**: Controls that alter the way the work is done
  - Schedule maintenance and other high exposure operations to when few workers are present
  - Implement job rotation and work rest schedules that limit the time a worker is exposed to a substance or process
  - Establish safe work practices such as standard operating procedures, emergency response training, and good housekeeping and personal hygiene practices

Steps in a Hazard Control Program
1. Identify the hazard
2. Assess the risk (severity and likelihood of occurrence)
3. Choose the best control for the hazard
4. Implement the chosen control
5. Evaluate the effectiveness of the control

Monitor and Review using
- Physical workplace inspections
- Testing
- Exposure assessments
- Injury and illness tracking
- Medical assessments
- Accident/incident investigations reports
- Employee feedback and input

Safe/Unsafe

A legal limit or guideline should never be viewed as a limit line between “safe” and “unsafe.” Always keep exposures on the risk of a hazard as low as possible.

What the law says: Some hazards and their control measures will be specifically outlined in legislation. In all cases, the employer must take all reasonable precautions to prevent injuries or accidents in the workplace.

CCOHS.ca