# Guidelines for Hazard Identification and Risk Assessment

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

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Saskatchewan

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# 1. Purpose

The Government of Saskatchewan is committed to ensuring workplace health, safety and wellness. The process of Hazard Identification and Risk Assessment is a key element of the Government of Saskatchewan's Health and Safety Management System: WorkSafe Saskatchewan, *Foundational Pillars*.

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

on the level of risk. 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?

### 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

- *Guidelines on Job Safety Analysis and Safe Work Practices/Procedures* - Government of Saskatchewan
- *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.

## Appendix A: Hazard Identification and Assessment Worksheet

| **Ministry, Division, Branch, Work Unit, Location:** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Assessment Completed By (Names and Positions)**: | | | | **Assessment Completion Date**: | | | | | |
| Hazard(s) Identified | Severity (S) Rating (1-3) | Probability (P) Rating (1-3) | Frequency (F) Rating (1-3) | Hazard Rating Total (S+P+F) | Risk Rating (High, Medium, Low) | Hazard Control Recommended | Control Status (Reviewed, Initiated, Implemented) | Completed By | Completion Date |
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**Score of 7-9 = High**
**Score of 5-6 = Medium**
**Score of 3-4 = Low**

## Appendix B: Signage to Promote Awareness