

Hazard Assessment Control Form

1. **INTRODUCTION**

Hazard Identification, Risk Assessment and Control

The Nova Scotia Occupational Health and Safety Act, Central zone Policies and Wellness and Safety Services all indicate that the employer is responsible for the identification and control of hazards. Hazard Risk Assessment and Control is critical to the success and effectiveness of any Occupational Health and Safety Program.

Hazard Identification is a proactive process to identify hazards and eliminate or minimize/reduce the risk of injury/illness to workers and damage to property, equipment and the environment. It also allows us to show our commitment and due diligence to a healthy and safe workplace. We must identify hazards and potential hazards in the workplace in order to be able to take action to eliminate or control them.

This is a step by step process to guide responsible persons to an effective hazard identification, assessment and controls system. The steps include:

- Hazard Assessment: identifying the hazards and potential hazards, determining the risks and the risk designation (rating) associated to the hazard based on: probability, severity and frequency
- Hazard control - controlling the hazards and the risks associated with the hazard
- Providing information, education, training and supervision on the hazards, risks and controls for employees affected by the hazards
- Review of the hazard assessment and control process

2. **RESPONSIBILITIES**

Directors

- Ensure that the hazard assessment and control program is implemented in their areas of responsibility
- Provide the resources to ensure that employees are involved in the hazard assessment and control process
- Ensure Manager and Supervisors are fulfilling their responsibilities for conducting hazard assessments and implementation of hazard control recommendations.
- Sign off on final copy of Hazard Risk Assessment and Control Forms.
- Ensure that written preventative maintenance procedures are implemented for applicable equipment.

Managers/Supervisors

- Identify, assess, control and document (hazard inventory) hazards or potential hazards in or near the workplace. (Refer to the Hazard Identification, Evaluation and Control Program for procedures and tools.)
- Consult with employees when conducting hazard identification, risk assessment and control.
- Include identified hazards and controls on the Workplace Inspection Checklist Form (Refer to Workplace Safety Inspections Program).
- Develop written safe work procedures for safe and healthy work practices in consultation with employees.
- Inform employees of the safety hazards and provide information, education, training and supervision on the hazards, controls and safe work procedures (safety talks, dedicated time during staff meetings, etc.). Maintain appropriate documentation for information, education, training and supervision provided to employees and ensure it is available upon request by employees, employer, contractors, safety team or committees, Safety Programs or Department of Labour and Workforce Development.
- Identify hazards or potential hazards prior to the implementation of any change. If unable to eliminate hazards, establish appropriate control measures to prevent occupational injury and illness based on following hierarchy of controls:
 - Elimination – removing a hazardous task, tool, machine, substance or process and is the best method for protecting workers.
 - Substitution – substituting for a less hazardous task, tool, machine, substance or process.
 - Engineering – focus on the hazard and include: isolation, barriers, workplace design, dilution, guards, etc.
 - Administrative – focus on the employee exposure and behaviour and include: safe work procedures, safe work practices, training, information, supervision, etc.
 - Personal Protective Equipment (PPE) – last line of defense as this does not control the hazard, but rather, protects the employee from the hazard.

Note: PPE is always used in conjunction with engineering and administrative controls.

Employees

- Identify work-related hazards or potential hazards in or near the workplace. Attempt to eliminate or control the hazard if within the scope of your ability and authority to do so.
- Report all identified hazards to the immediate supervisor or manager and SAFE. (Refer to Policy CH 80-022 - Workplace Employee Hazards and Incidents - Reporting, Investigation and Documentation).
- Take appropriate measures for protection of self and others from occupational injury and illness. Utilize all identified control measures.
- Cooperate with management in the identification, reporting and control of hazards that may lead to incidents involving injuries or illnesses.
- Participate in the hazard assessment and control process, as required. Recommend improvements to the control of hazards to their supervisor/manager.
- In cases where a hazard has been identified but not corrected by the manager/supervisor as per Procedure #2, report the hazard to a member of the department Workplace Safety Team or Workplace Safety Representative (QEII only) or a member of the JOHSC and SAFE. (Refer to policy CH80-022 - Workplace Employee Hazards and Incidents - Reporting, Investigation and Documentation).

3. ***DEFINITIONS***

Employee – any employee, physician, other practitioner, volunteer, student, contractor, associate of Central zone (suppliers, etc.) or employee of a Central zone Foundation. (policy)

Hazard – a condition or practice with a potential for injury to people, equipment, materials, property or the environment. (policy)

Hazard Classes: Central zone’s assigned risk ranking/rating scale for hazards and Incidents

Risk – the chance or probability that a person will be harmed or experience adverse health effects if exposed to a hazard or the chance or probability that damage will result to equipment, materials, property or the environment if exposed to a hazard. (CCOHS)

Risk Designation – Scoring system for severity, probability and frequency

4. **Hazard Assessment**

Hazard assessment is a thorough, ongoing examination of the workplace for the purposes of identifying what actual and potential hazards exist.

Hazard assessment is important as it creates awareness of hazards and risks. It identifies who may be at risk (employees, cleaners, visitors, contractors, the public, etc). Hazard Assessment determines if existing control measures are adequate or if more should be done (recommended control measures). It prevents injuries or illnesses when done. Will prioritize hazards and identify control measures, if necessary. Also, it will allow a department to identify if the hazard and risk require a written safety work procedure (administrative control).

To effectively complete the Hazard Assessment and Control Program for your area(s) of responsibility **a team of individuals** (not necessary; however employees should be consulted) who have a good working knowledge of the workplace should be formed. This team or the process should always include/involve employee(s) and supervisors/managers who work with the hazard under review. The team could also include:

- Workplace Safety Team member(s) (QEII only)
- Joint Occupational Health and Safety Committee Member(s)

In general, to do a hazard assessment you should:

- a. Identify hazards and record on Hazard Identification and Control Form.
- b. Review all available health and safety information about the hazard such as: MSDSs, manufacturer’s literature, and information from reputable organizations, results of testing, etc. The following should also be considered:

- Manufacturers’ literature
- Information from reputable organizations
- Results from testing
- MSDSs

- Reports of hazards and incidents (with or without injury) that have occurred in the workplace in the past.
 - The circumstances in which work take place.
 - The interactions that occur in the course of performing work.
 - The physical location and layout of the workplace.
 - Hazards or incidents (with or without injury) that are known to occur in similar workplaces.
 - Central zone policies and programs.
- c. Assign a risk designation by evaluating the risk (likelihood) of an injury or illness occurring, and its severity,
 - d. Identify actions/existing controls already in place or recommended controls to eliminate or reduce the risks associated with the hazard,
 - e. Monitor and evaluate to confirm the risk is controlled,
 - f. Keep any documentation or records that were used during the hazard assessment.
Documentation may include but is not limited to: detailing the process used to assess the risk, outlining any evaluations or detailing how conclusions were made.

It is important to remember when performing a hazard assessment to take into account not only the current state of the workplace (existing hazards and controls) but any potential situations (potential hazards) as well.

4.1. Identifying Hazards

The goal is to find and record all possible hazards (actual or potential) that may be present in or near your workplace.

Hazards can be identified by any of or any combination of the following sources:

- a. Performing Workplace Inspections (See Central zone's Workplace Inspections Program)
 - On-going inspections: Employees, Supervisors, Managers
 - Formal (Internal): Department regularly scheduled Inspections, (monthly).
 - Formal (External): Safety Programs, JOHSC, Department of Workforce and Labour
- b. Reviewing previous accident/incidents or near-miss records
- c. Discussion with employees
- d. Reports of hazards from employees
- e. Examining the work activity:
 - Look at all aspects of the work,
 - Include non-routine activities such as maintenance, repair, cleaning, etc.
 - Include people who work "off site" either at home or at other job sites, people who work alone, etc.
 - Look at the way the work is organized or "done" (include experiences and age of people doing the work, systems being used, etc.)
 - Look at foreseeable unusual conditions (for example: possible impact on hazard control procedures that may be unavailable in an emergency situation, power outage, severe weather, equipment malfunction/jamming, etc.)
- f. Include an assessment of groups that may have a different level of risk such as young or inexperienced workers, persons with disabilities, or new or expectant mothers.
- g. Hazards identified in similar workplaces.
- h. As advised by JOHSC/WPST or Safety Programs

Health and safety hazards can also be identified by Hazard Categories:

Biological – bacteria, viruses, mold, insects, plants, birds, animals, and humans, etc.

Chemical Hazards includes airborne gases, vapours, mists, dust and fumes as well as solids and liquids. Routes of exposure include absorption (skin and eyes), ingestion and inhalation.

Ergonomic – include the interaction between people and machines (controls, readouts, gauges, signals, etc.) and environmental conditions relative to human performance and comfort such as lighting, seating, body position, repetitive motion.

Physical Hazards – physical surrounds (buildings, grounds, equipment, etc.), noise, temperatures, radiation, lighting, vibration, Fire, slip/falls, working from heights, working alone, working or travelling in the community (off-site)

Psychosocial – stress, violence, sleep deprivation, fatigue, etc.

For assistance, refer to the Hazards Inventory List which provides limited information on hazards and controls. This list is not a complete list of hazards and cannot replace performing the Hazard Identification Process.

4.2 Assigning a risk designation

Rating the hazard is one way to help determine which hazard is the most serious and thus which hazard to control first. Priority is usually established by taking into account the severity, probability and frequency of the exposure. By assigning a priority to the hazard, you are creating a rating or an action list. The following factors play an important role:

- Frequency of exposure – how often an employee is exposed to the hazard.
- Severity of exposure – impact when exposed to the hazard.
- Probability of occurrence – likelihood that an incident will occur when exposed to the hazard.

When the hazard is identified, determine the controls which are already in place to ensure this information is taken into account when assigning a risk designation.

Score	1	2	3	Total
Severity - impact of exposure	Class C hazard - likely to cause minor, non-disabling injury or illness, or non-disruptive property damage.	Class B hazard - likely to cause serious injury, illness, resulting in temporary disability or property damage that is disruptive but not extensive.	Class A hazard - likely to cause permanent injury, loss of life or body part and/or extensive loss of structure, equipment or material.	
Frequency of exposure	Rarely (<1/month)	Often (3 times/week)	Every day	
Probability of exposure	Unlikely	Could occur	Will occur if not attended to	

Once each hazard has been assigned a score for severity, frequency and probability based on the chart above, total the 3 items (S + F + P + Total).

Low	Medium	High
Score of 3-4	Score 5-6-7	Score of 8-9

Low (3,4) indicates that risks are considered acceptable. No further action or additional controls are necessary. Any actions to further reduce these risks are assigned a low priority. Regular monitoring should be performed to ensure that the controls are maintained and continued to be effective.

Medium (5,6,7) consideration should be as to whether the risks can be lowered, where applicable, to a tolerable level and preferably to an acceptable level. The risk measures should be implemented within a defined time period. Arrangements should be made to ensure that controls are maintained, particularly if the risk levels are associated with harmful consequences.

High (8, 9) – These risks are unacceptable. Substantial improvements in risk control measures are necessary so that the risk is reduced to an acceptable level. Risk reduction measures should be implemented urgently and it may be necessary to consider suspending or restricting the activity until short and long term controls are implemented that reduces the risk so that it is no longer high. If it is not possible to reduce the risk, the work should remain prohibited.

4.3 Controlling the Hazard - identify actions necessary to eliminate or control the risks associated with the hazard.

After the hazard has been identified, reviewed and assigned a risk designation, it will be necessary determine what controls (measures) necessary to eliminate, reduce or minimize the risks associated with the hazard.

To control a hazard, review all available health and safety information about the hazard such as MSDSs, Regulations, manufacturers literature, results of testing, controls already in place, Central zone or Departmental policies and procedures, industry standards, best practices, information from reputable organizations, etc.

Hazards should be controlled at their source (where the problem is created). The closer a control is to the source of the hazard, the better able to control potential exposures/risks. Hazards can be controlled:

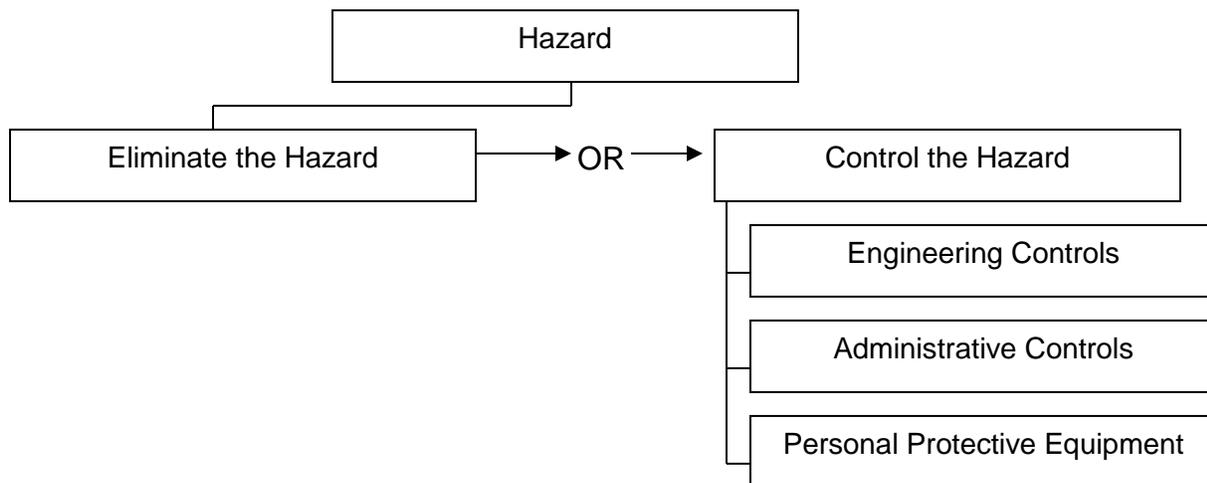
- At the source
- Along the path to the worker (between the source and the worker)
- At the worker (always the last choice)

4.2 Types of controls:

- Engineering (ENG) – to eliminate or control the hazard, this is the preferred method of control.
- Administration (ADM)
- Personal Protective Equipment (PPE) – these are the last line of control or defence.
- Combination of Engineering, Administrative and/or PPE controls – sometimes a hazard cannot be adequately controlled by a single type of control and a combination of the controls may be required to effectively control the hazard.

Hierarchy of controls

Whenever possible, hazards should be controlled in order as listed above



Engineering Controls

Engineering controls eliminate or control the hazard, this is the preferred method of control.

Engineering controls at the source:

Elimination – getting rid of a hazardous job, tool, process, machine or substance is the best way of protecting workers. An example

- Using mechanical equipment rather than have workers manually lift, lower, carry, etc.

Substitution – doing the same work in a less hazardous way such as:

- Substituting a hazardous chemical with a less hazardous one

- Replacing hazardous processes with less hazardous processes.
- Selecting tools, equipment and machinery that require less maintenance
- Replacing heavy, awkwardly shaped loads with lighter loads with handles and/or good gripping surfaces.

Redesign – jobs and processes can be redesigned to make them safer, for example:

- Making containers easier to lift and hold
- Providing fail-safe interlocks on equipment, doors, valves, etc.
- Controlling traffic to avoid collisions or reduce access to areas, etc.
- Improving workplace lighting, ventilation and temperature control.
- Providing warning systems.
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Isolation – if a hazard cannot be eliminated or replaced, it can sometimes be isolated, contained or otherwise kept away from workers, for example:

- An insulated and air-conditioned control room can protect operators from hazards
- Sound reducing enclosures for noisy equipment
- Negative pressure fume hoods in laboratory settings.
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Engineering controls along the path:

Barriers – a hazard can be blocked before it reaches workers. Usually the further a control keeps a hazard away from workers, the more effective it is. Examples

- Special curtains can prevent eye injuries from welding arc radiation
- Proper equipment guarding will protect workers from contacting moving parts
- Enclosure and covers
- Lock-out systems can isolate energy sources during repair and maintenance

Absorption – a hazard can be absorbed before it reaches workers. The closer the absorber is to the hazard the better.

- Sound baffles can absorb noise generated by machinery
- Radiation shielding can absorb the radiation from x-ray units.
- Welding glasses absorb the ultraviolet light generated by welding
- Activated carbon charcoal can be used to absorb volatile gases generated by experimental procedures.

Dilution – some hazards can be diluted or dissipated.

- General (dilution) ventilation systems might dilute the concentrations of a hazardous gas with clean, tempered air from the outside.
- Dilution ventilation is often quite suitable for less toxic products. However it is not effective for substances that are harmful in low concentration like hydrogen sulphide, cyanide gas, and methane.

Administrative Controls (ADM)

When engineering controls are not possible or practical, administrative controls are the next best solution for controlling hazards.

Administrative controls at the worker include:

- Safe work procedures (SWP) describe how to safely complete a job from start to finish and/or provide safety precautions.
- Training workers on work procedures.
- Supervision required to ensure that workers follow the procedures and practices
- Job rotation
- Housekeeping
- Repair, preventative maintenance and inspection programs based on manufacturer specifications, Regulations and prescribed standards for tools, equipment, instruments, machines, vehicles, etc.
- Hygiene, housekeeping: ensuring the workplace/work surfaces or equipment is clean, free of obstructions, etc.

Personal Protective Equipment (PPE)

PPE – protects the worker from injury from incidents. PPE does not prevent incidents from occurring and works to protect the worker from injury when an incident happens. PPE is always considered last and used in conjunction with engineering and administrative controls.

- Gloves
- Goggles and safety glasses
- Aprons or protective attire
- Boots
- Respirator
- Protective Vests
- Hard Hats

4. Documentation

Keep any documentation or records that were used during the hazard assessment. Documentation may include but is not limited to: detailing the process used to assess the risk, outlining any evaluations or detailing how conclusions were made.

Your records should show that you:

- Conducted a good hazard review,
- Determined the risks of those hazards,
- Implemented control measures suitable for the risk,
- Reviewed and monitored all hazards in the workplace.

When the hazard assessment is complete a copy of the hazard assessment must be provided to the workplace safety team/representative (QEII only) or the applicable facility JOHSC. This will allow for team/committee review and input.

All hazards and controls identified must be added to your departmental workplace inspection list.

All hazard assessments must be available in the department upon request from Safety Programs, committees, employees, or department of Labour.

5. Monitor and evaluate to confirm the risk is controlled.

It is important to know that your hazard assessment was complete, accurate and if the controls selected were implemented and if they are effective. It is also essential to be sure that changes in the workplace have not introduced new hazards or changed hazards that were once designated as a lower priority to a high priority.

Identified, assessed and controlled hazards must be included on your inspection list under department specific hazards: this provides for daily and monthly monitoring of hazards and controls during the inspection process (Refer to workplace inspection and compliance)

6. Provide Education for Staff

Ensure staff are informed of the hazards and are provided adequate education, training, information and instruction to work with the hazard safely.

7. Supervise staff compliance for the safety procedures

This is a managerial responsibility; but does not preclude general observation by other staff or JOHSC members. Non-compliance needs to be reported to the supervisor or manager and addressed appropriately.

During the training process
Ongoing – daily
Workplace inspections

8. It is good practice to review your assessment on a regular basis to be sure that nothing has changed and that your control methods are effective. Triggers for a review can include:

- a. The start of a new project
- b. A change in the work process or flow,
- c. A change or addition to tools, equipment, machinery (including locations or the way they are used).
- d. New employees
- e. Renovations, moving to a new building, work area, etc.
- f. Introduction of new chemicals or substances,
- g. When new information becomes available about a current product.
- h. If an incident occurs

Hazard Assessments must be reviewed at least **annually** to ensure they are continually effective.