NORTHWEST TERRITORIES & NUNAVUT

CODES OF PRACTICE

Hazard Assessment

WSCC Workers' Safety & Compensation Commission | ᐃᓕᓴᕐᓂᐊᕐᓗᒍ ᐱᒋᔭᐅᓂᖅ ᐊᑐᓕᕐᓂᐊᖅ ᐃᓄᒃ ᓇᓗᓇᐃᖅᑐᑦ ᖃᐅᔨᓴᖅᑎᑦ

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This brochure is a summary, prepared for general information.
It is not a statement of the law.

If you would like this in another language, please contact us.

Foreword

The Workers' Safety and Compensation Commission (WSCC) produced this industry Code of Practice in accordance with subsections 18(3) and 18(4) of the Northwest Territories and Nunavut *Safety Acts*.

The Code of Practice applies to all workplaces covered by the Northwest Territories and Nunavut *Safety Acts* and *General Safety Regulations*. The Code of Practice on Hazard Assessment relates to provisions 4 & 5 of each *Safety Act*.

Copies of this code can be obtained online from the Workers' Safety and Compensation Commission at: www.wscc.nt.ca or www.wscc.nu.ca.

The Code comes into effect on May 30, 2012, as published in the *Northwest Territories Gazette* and the *Nunavut Gazette*.

Chief Safety Officer, WSCC

Disclaimer

This publication refers to obligations under the workers' compensation and occupational health and safety legislation as administered by the Workers' Safety and Compensation Commission.

To ensure compliance with legal obligations always refer to the most recent legislation. This publication may refer to legislation that has been amended or repealed. Information on the latest legislation can be checked at wscc.nt.ca or wscc.nu.ca, or contact WSCC at 1-800-661-0792.

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Code of Practice

What is a Code of Practice?

A code of practice is a document written for everyday use that provides practical guidance for achieving the safety standard required by any provision of the Northwest Territories and Nunavut *Safety Acts* and *Regulations*.

As per section 18(3) of the Northwest Territories and Nunavut *Safety Acts, "For the purpose of providing practical guidance with respect to the requirements of any provision of this Act or the regulations, the Chief Safety Officer may approve and issue such codes of practice as he or she considers are suitable for that purpose."*

The code comes into effect the day the *Northwest Territories* and the *Nunavut Government Gazettes* publish the notice of approval by the Chief Safety Officer.

The approved code does not have the same legal force as the *Safety Act* and *Regulations.* It is intended to be used to help comply with the *Safety Acts* and *Regulations*. In the course of a prosecution, the code may be admissible as evidence. A court may consider a code approved by the Chief Safety Officer, to determine if a decision-maker took into account relevant factors in reaching a decision. Conformity to a code may also be accepted as evidence of safe practices.

An approved code of practice should be followed unless there is an alternative course of action that achieves the same or better standard of health and safety at the work site.

A Code of Practice

- **provides practical guidelines**
- **needs to be adapted to the work site**
- **may be used as evidence**
- **should be followed unless there's a better way**

Definitions

For the purpose of this Code the following means:

Ergonomics: integrated knowledge derived from the social and technical sciences, used to match jobs, systems, products, and environments with the physical and mental attributes of people involved.

Hazard: is any situation, thing or condition that may expose a person to risk of injury or occupational disease.

Incident: an occurrence, arising in the course of work that could result in an injury or illness (includes near misses).

Legal Requirements: requirements of applicable OHS federal, provincial/territorial, and municipal laws, regulations, and bylaws, and where applicable, provisions of the organization's collective agreements that relate to health and safety.

Occupational Health and Safety Management System (OHSMS): part of the overall management of the organization that addresses OHS hazards and risks associated with its activities.

Organization: a company, operation, undertaking, establishment, enterprise, institution, or association, or a combination thereof that has its own management. An organization may be incorporated or unincorporated, public or private.

Personal Protective Equipment (PPE): The purpose of personal protective equipment (PPE) is to create a protective barrier between the worker and hazards in the workplace. PPE includes such equipment as: hard hats, chemical resistive gloves, safety boots, protective clothing, safety glasses and respirators.

Procedure: a documented method to carry out an activity.

Process: a set of interrelated or interacting activities that transforms inputs into outputs.

Record: a document that states results achieved or provides evidence of activities performed.

Risk: the chance or probability of a person getting harmed, or experiencing an adverse health effect if exposed to a hazard.

Introduction

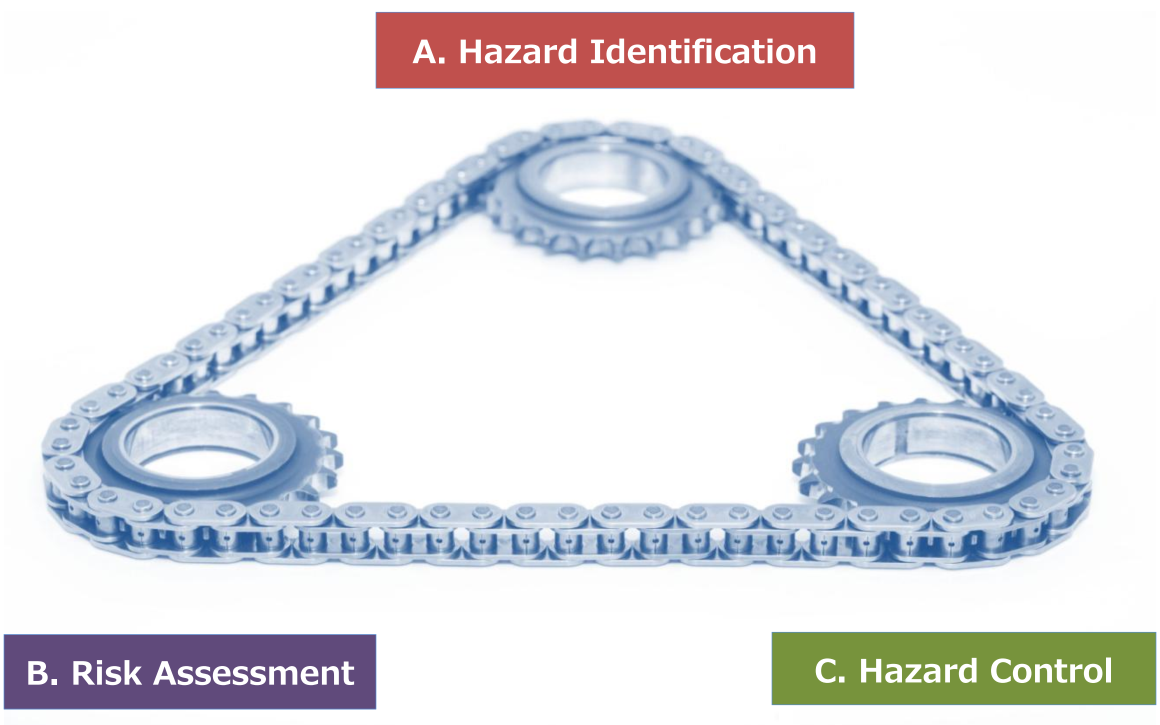
Code of Practice on Hazard Assessment

Hazard assessment is the process followed to identify, assess, and eliminate or manage workplace hazards and the risks to worker health and safety. The assessment is an essential part of an organization's safety culture and safety management system.

Hazard communication begins with the worker's orientation when first starting to work and continues on a day-to-day, task-specific and site-specific basis. Workers must be informed of the hazards they may encounter and the procedures or methods required to effectively control or mitigate those hazards.

This code of practice on hazard assessment provides practical guidance on how to manage risks and prevent losses that may result from hazards at the work site.

The hazard assessment has three main elements:

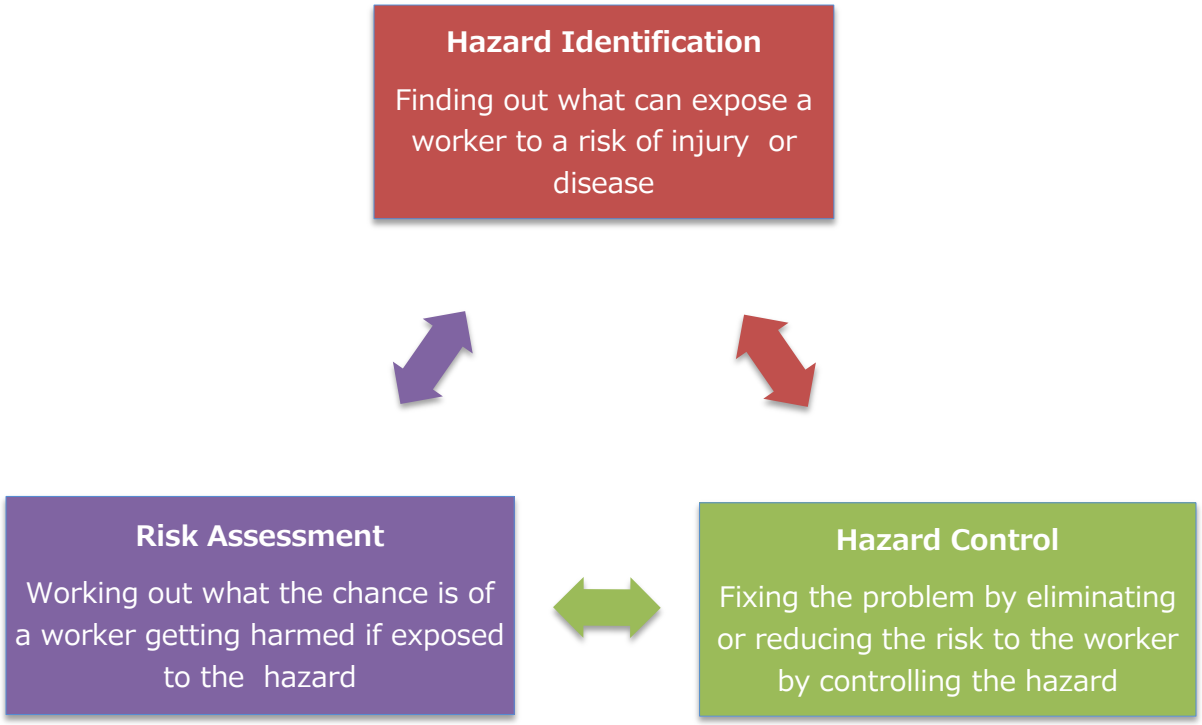


The Difference between Hazard and Risk

The two terms, hazard and risk are sometimes used interchangeably. They are different, though connected, as can be seen from the following two definitions:

A hazard is *any situation, thing or condition that may expose a person to risk of injury or occupational disease*.

A risk is *the chance or probability of a person getting harmed, or experiencing an adverse health effect if exposed to a hazard*.



Hazard Assessment Process W's

What

A written assessment that applies to the work site or work activities reviewed. It must show the workplace hazards and the methods used to eliminate or control the hazards identified. The assessment must show the date and who completed the assessment.

Where

A hazard assessment is done at the work site through inspection of the work site and evaluation of the work processes and equipment.

Who

Employers are legally responsible for conducting a hazard assessment, but both employers and workers have a responsibility to point out potential health and safety hazards.

Why

The purpose of the hazard assessment is to help with the development of a plan that will identify hazards, assess the risk, and develop controls based on a real and specific workplace situation.

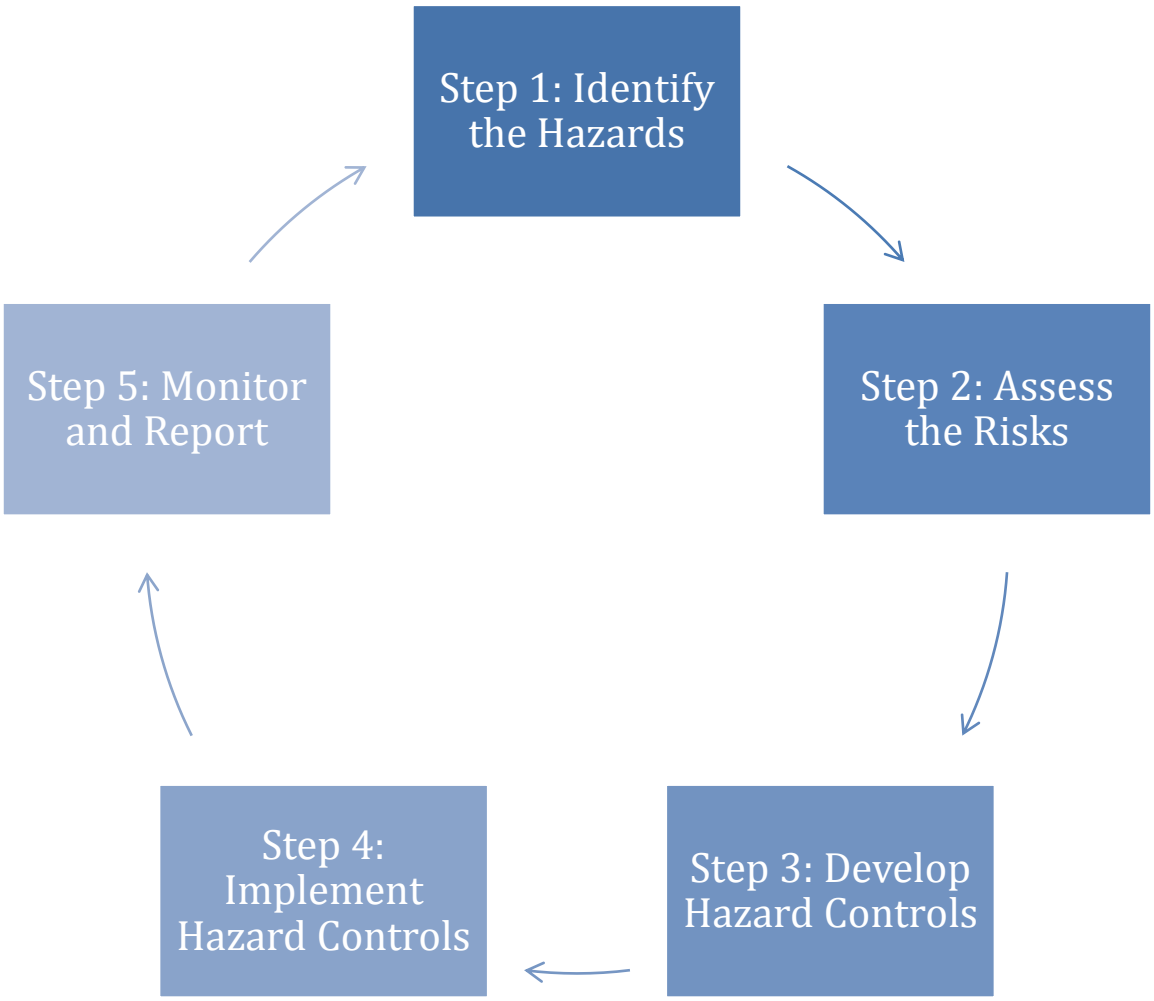
When

At work locations where activities and conditions change frequently, the supervisor or work team does a hazard assessment before a shift or a task begins.

In the case of an employer whose operations change very little, hazard re-assessment needs to be performed periodically to ensure worker health and safety.

Various checklists and forms are available in the section on page 31 for use with identifying hazards and conducting a risk assessment.

5 Steps to Hazard Assessment



Step 1: Identify the Hazards

How to Identify Hazards

You need to be aware of hazards in and around your workplace. A hazard is any situation, thing or condition that may expose a person to risk of injury or occupational disease. A risk is the chance or probability of a person getting harmed, or experiencing adverse health effects.

Ways of going about identifying hazards:

- **Inspect:** Walk around the workplace and look for what could cause a worker harm
- **Teamwork:** Before a shift or a task begins identify the potential hazards
- **Collect information:** Ask your employees and OHS representatives what they think
- **Review information:** Look back at your accident and ill-health records
- **Floor plan:** Note problem areas on a work site floor plan

What to consider when identifying hazards:

- Types of hazards
- Work site components: people, site/environment, materials, equipment
- Laws: Acts & Regulations
- CSA Standards
- Guidelines or Codes of Practice
- Manufacturers' and suppliers' recommendations
- Workplace policies and procedures
- Inspection and maintenance reports

Remember to think about long-term hazards such as exposure to high levels of noise or harmful substances, as well as safety hazards.

Remember that some workers have particular requirements, such as young workers, new employees, expectant mothers, or people with disabilities.

Special Hazards: You may encounter special hazards beyond the scope of your experience, such as improper workstation design, specialty chemicals, and hazardous or radioactive materials. Seek outside expertise to assist in hazard assessment and control in these cases.

Hazard Identification: Scenario 1

This is an example of how a supervisor begins a hazard assessment.

Step 1: Identify the Hazards

The supervisor oversees the loading at a warehouse. He inspects the work site, talks to his team and looks for different types of hazards. He considers the four main workplace components of people, the work environment, and the materials and equipment used.

The supervisor identifies a hazard that involves one of the workers and a piece of equipment. There is a possibility of the worker losing control of the forks on the front end loader while adjusting them for material handling. This could lead to a potentially serious foot injury. The supervisor looks at the regulations on footwear and notes the obligation it puts on the employer to make sure the worker is wearing the right footwear when there is a risk of a crushing injury.

Analysis

Work site: Warehouse

Task: Adjusting the forks of the front end loader for material handling.

Hazard: Losing control of the forks on the front end loader.
Fork dropping on the foot.

Potential Harm: Serious injury to the foot (e.g. fracture).

***NWT & NU Safety Regulations*:**

Section 41 Footwear
An employer shall ensure that a worker uses footwear appropriate to the hazards associated with the work site.

Section 42 An employer shall ensure that a worker uses footwear that complies with Canadian Standards
Association Standard CAN/CSA-Z195-M92, *Protective Footwear*, as amended from time to time, at any
(a) construction site;
(b) logging site; or
(c) work site where there is a risk of injury to the feet from
(i) crushing, cutting, penetration, burning or other similar hazard, or
(ii) exposure to hot, corrosive, poisonous or other dangerous substances.

CSA standard: CAN/CSA-Z195-M92, *Protective Footwear*

Types of Hazards

Hazards can be in many forms and types. **Visible Hazards** such as objects on the floor that could cause a tripping hazard. **Hidden Hazards** such as fumes from chemicals that can cause illness or death. **A Condition** such as working in a confined space. **A Hazardous Act** such as not paying attention when carrying hot or dangerous materials.

Chemical
Includes any form of chemical, like gases, vapours, and liquids.

Example: Vapours from gases or fumes from metals can cause respiratory problems.

Biological
Includes organisms or toxic substances produced by living things that can cause illnesses or diseases like bacteria, viruses, and mould.

Example: Hospital workers can contract a virus or disease by coming into contact with contaminated fluids like blood, when not wearing correct PPE or following safe work practices.

Mechanical
Includes hazards from moving parts like rotating shafts, belts, blades, and saws.

Example: Workers can be injured by getting clothing caught in moving equipment like conveyor belts.

Environmental
Includes hazards presented by the natural environment and climatic conditions like rain, ice, and snow, on people, equipment, and work practices such as working alone.

Example: The metal of cranes used in extreme cold can become brittle and snap, which can result in injury or the death of a worker.

Material Handling
Includes manual handling like lifting or moving items.

Example: Improper lifting techniques are a common cause of back injuries.

Physical
Includes noise, vibration, heat, cold, and radiation.

Example: Hearing loss can result from working around loud equipment without proper hearing protection.

Energy
Includes pneumatic or hydraulic pressure, steam, heat, electricity, and stored energy.

Example: Serious injury or death can result from working with electricity unless proper precautions are taken and the worker has proper training.

Work Practices
Includes hazards caused by unsafe work practices, like not following WHMIS.

Example: You can burn yourself while handling chemicals because you weren't wearing the appropriate clothing (PPE).

Psychosocial
Includes organization, design and management of work that can cause psychological harm and affects a worker's general well-being like poor work conditions, harassment, violence, and overwork.

Example: Traumatic experiences can lead to fatigue, stress, depression, inability to concentrate and illness.

Ergonomic
Includes workplace design with jobs that involve repetition, force, and posture.

Example: Workers can experience back pain due to poorly designed furniture.

Major Workplace Components

In every workplace there are four major aspects to consider when identifying workplace hazards: people, the worksite and environment where people work, the materials used in their work and the equipment and tools used. All areas of the work site must be inspected.

People:

- need to know their rights and responsibilities
- have the skills and knowledge to do their job
- be able to recognize hazards
- have the training to do their job safely
- be given correct information and instructions
- be physically and mentally able to do the job
- must wear the required Personal Protective Equipment
- need to adhere to safe work practices

The Workplace/Environment:

- must be clean and orderly
- may be subject to extreme temperatures
- may include excessive noise or vibration
- may be subject to dust, fumes, vapours, and other hazards in the air

Materials:

- must be handled, used, stored, and disposed of according to all required regulations (WHMIS etc.)
- must be lifted and moved using proper techniques

Equipment and tools:

- must be in good condition
- must be used for the appropriate task
- must include all safety features
- must be used in the proper manner
- must be inspected on a regular basis
- must be stored in the proper place

Acts, Regulations and Standards

The Canadian, Provincial, and Territorial Governments establish laws to keep workers and workplaces safe. Workers and employers must follow these laws or face serious consequences.

The main laws concerning workplace health and safety in the Northwest Territories and Nunavut:

- *NWT and NU Safety Acts and Regulations*
- *NWT and NU Mine Health and Safety Acts and Regulations*
- The *Canada Labour Code*
- *NWT Employment Standards and NU Labour Standards Acts*
- *NWT and NU Human Rights Acts*
- *Regulations* covering the *Workplace Hazardous Materials Information System* (WHMIS)

If no standard is legislated, then other standards are considered such as CSA standards and guidelines, manufacturer's standards, codes, and established procedures.

The *NWT and NU Safety Acts and Regulations* set out the basic rights and responsibilities of both workers and employers.

Every employer must keep a copy of the *Safety Acts and Regulations* specific to the territory where work is being done available for workers, and make sure workers understand how it applies to the specific workplace. Copies can be found at www.wscc.nt.ca

The Duty of the Employer:

Maintain the workplace so the health and safety of workers and others are not likely to be endangered.

Take all reasonable precautions, and adopt and carry out all reasonable techniques and procedures, to ensure the health and safety of every person in the workplace.

The Duty of the Worker:

Take all reasonable precautions to ensure his or her own safety and the safety of other persons in the workplace.

Use devices and articles of clothing, or equipment, intended for his or her protection as circumstances require.

The WSCC, under the *Safety Acts*, has a focus on injury prevention. The associated benefits of financial and environmental loss prevention are not factored into this hazard assessment model.

Step 2: Assess the Risk

The purpose of the risk assessment is to evaluate the risks associated with hazards that have been identified. This is done by deciding how likely (probable) and serious (severe) the risk may be. The risk assessment process helps with decision making and dealing with the identified hazards to ensure worker health and safety.

A risk is the chance or probability of a person getting harmed, or experiencing an adverse health effect if exposed to a hazard.

Whoever does the risk assessment needs to be familiar with the work tasks and work environment and the factors involved. Hazards and risks can change based on these conditions. It is therefore vital that the information for the risk assessment be gathered at the work location and close to the source of the hazard.

There are many ways of assessing risk. Organizations develop risk or hazard rating tools and systems that fit their specific operations and the activities of their workers. Such examples include: Field Level Risk Assessment (FLRA), Job Hazard Assessment (JHA), Pre-job Safety Instruction (PSI), Safe Task Observation Pre-assessment (STOP).

This guideline explains ways to assess risk. You have an option of determining the risk level by using any generally accepted principles and methods.

Risk Level

Risk = Probability x Severity

The level of risk is based on factors such as **how often** the job is done, **how likely** an injury is and **how serious** an injury might be.

To do this, a value or number is given to the probability of something happening and to the seriousness or severity if it should happen, also called a consequence. Some methods also add exposure, or how often the job is done to the calculation. The idea is that when these values are combined in a matrix or multiplied, they give a risk estimate. In practice, neither probability, nor severity can be estimated with complete accuracy.

Risk Categories

High Medium Low

In general the level of risk is divided into three categories:

High Risk **Could result in serious injury or death**

Medium Risk **Could result in temporary disability or lost time injury**

Low Risk **Could result in medical aid or first aid injury**

This type of tool provides a quick method for sizing up what you see in order to assess the risk involved. It helps identify the risks that need more attention or a detailed risk assessment.

High Risk **Reduce risk level before starting the work**

Medium Risk **Reduce risk level as low as possible**

Low Risk **Monitor. Action may be required**

Risk Matrix

Employers and workers may use a risk matrix to assess risk. This is a tool that increases the visibility of risk and helps with management decision making. There are many standard risk matrices that are used in different contexts. Organizations may need to create their own or adapt a matrix to fit the needs of their workplace.

RISK MATRIX			
CONSEQUENCE or SEVERITY	PROBABILITY		
	Likely	Possible	Not likely
Critical	High	High	Medium
Serious	High	Medium	Low
Minor	Medium	Low	Low

Risk Calculation

The numerical approach to calculating risk is also called a Quantitative Risk Assessment (QRA). There are a multitude of QRA methods, all highly dependent on the specific situation.

QRA is based on the principle of adding or multiplying a numerical value given to various factors to get a risk estimate. For instance, a number value is given to the probability of something happening and to the seriousness or severity if it should happen, also called a consequence.

- Probability of occurrence of harm (the likelihood of it happening)
- Severity or Consequence of harm (how serious is what can happen)

Probability x Severity = Risk

The risk level estimated this way may help to determine whether a hazard must be attended to before a job begins, or simply monitored. It may also indicate the range of controls that need to be put in place to eliminate or reduce the risk to the worker's health and safety.

Risk Factors

The probability of the hazard causing an incident should be evaluated by considering all factors:

- Nearness to the hazard
- Length and extent of the task
- How often the task is done
- Number of workers
- Environment
- Safety culture
- Training
- Controls that are in place

The severity of risk, or the likelihood that a risk factor may lead to an injury, depends on the magnitude of the risk factor and the influence of other risk factors the worker may be exposed to.

For example, a worker with cold unprotected hands might exert 15 pounds of grip force infrequently without being at risk. However, the risk to that worker would increase with increased repetition, say to one grip per minute. Likewise, the risk of MSI (Musculoskeletal Injury) increases if a worker has cold hands in combination with frequent and/or prolonged exposure to grip force, awkward wrist postures, and hand vibration.

Adapted with permission from WorkSafe BC

Risk Assessment: Scenario 2

This is an example of how a supervisor does a risk assessment.

Step 2: Assess the Risk

Work site: Warehouse.

Task: Adjusting the forks of the front end loader for material handling.

Hazard: Losing control of the forks on the front end loader. Fork dropping on the foot.

After identifying the hazard, the supervisor decides on the seriousness of the hazard.

In this case the supervisor uses a Quantitative Risk Assessment (QRA) system that adds together the three factors of *Exposure (*how often the worker is exposed to the risk), *Probability* (what is the likelihood of it happening), and *Consequence* (how serious will it be if it happens). The outcome of the calculation tells him that it is a serious risk and that he has to pay attention to it before the forklift driver begins work.

HAZARD ASSESSMENT							
Work area: *Warehouse loading area*		**Assessment performed by:** *R. Anders* **Signature:** *R Anders*				**Date:** *30 May 2012*	
Task	**Hazard**	**Exposure (1 – 5)**	**Probability (1 – 5)**	**Consequence (1 – 5)**	**Risk E+P+C**	**Controls (PPE)**	**Implement**
Adjust forks of loader	*Fork dropping on foot*	*Often = 4*	*Could occur = 3*	*Severe = 4*	*11 Serious*	*Next to be developed*	

- **There are many ways of assessing risk. Organizations develop risk or hazard rating tools and systems that fit their specific operations and the activities of their workers.**

- **This guideline explains ways to assess risk. You have an option of determining the risk level by using any generally accepted principles and methods.**

Example of Pre-Job Safety Planning

Job Hazard Assessment (JHA)

Complete this form before the start of each task or with any change in conditions.

Job:_____ **Date:**_____

Review the following with the work crew. List tasks and hazards, and identify controls.
***** *High Risk tasks need a Safe Operating Procedure.*

Personal Hazards
- ☐ clear instruction provided
- ☐ able to perform the task
- ☐ trained to use equipment/tools
- ☐ distractions in the work area
- ☐ working alone
- ☐ aware of weather conditions
- ☐ noise levels
- ☐ have all the correct PPE

Activity Hazards
- ☐ welding/grinding
- ☐ burn/heat sources
- ☐ compressed gasses
- ☐ energized equipment
- ☐ electrical cords condition
- ☐ equipment/tools inspected
- ☐ lockout procedure in place
- ☐ airborne particles

Environmental Hazards
- ☐ spill potential
- ☐ climatic conditions
- ☐ MSDS reviewed
- ☐ ventilation required
- ☐ heat stress/cold exposure
- ☐ other workers in the area
- ☐ lighting levels
- ☐ housekeeping

Ergonomic Hazards
- ☐ working in a tight area
- ☐ parts of body in the line of fire
- ☐ working above your head
- ☐ pinch points identified
- ☐ working without being trapped
- ☐ repetitive movements

Working at Height Hazards
- ☐ barricades, flagging & signs
- ☐ hole coverings in place
- ☐ protection from falling items
- ☐ powered platforms
- ☐ fall arrest
- ☐ ladders

Access/Egress Hazards
- ☐ scaffold inspected and tagged
- ☐ slip/trip potential identified
- ☐ required permits in place
- ☐ excavations
- ☐ confined space
- ☐ other

Identify and prioritize tasks and hazards, then identify plans to eliminate or control the hazards.

TASK	HAZARD	CONTROL

**All hazards must have action plans to eliminate or control them. Plans must be in place before starting a task.*

Name:_____ Name: _____ Name: _____

Supervisor Signature: _____ Reviewed by: _____

Step 3: Develop Hazard Controls

Hazard controls are measures taken to eliminate or reduce the risks of hazards in the workplace. The risk assessment process establishes the probability that a hazard could lead to an incident and how serious this could be. In choosing to control the hazard, you choose an appropriate solution for each hazard, to eliminate or reduce the risk of injury or disease to the worker.

The questions to ask:

- **Can I get rid of the hazard altogether?**
  - **If not, then how can I control the risk so that harm to the worker is unlikely?**

Five Basic Ways to Control Hazards

There are five basic ways to control hazards. These controls form a hierarchy. This means that the first control, elimination, is the first control to be considered. If that is not possible then the next control and so on until the control of last resort, Personal Protective Equipment (PPE). Sometimes in order to protect worker health and safety, several controls have to be put in place.

The five basic ways to control hazards and examples:

1. Elimination (remove from the work site)
2. Substitution (use a less harmful chemical)
3. Engineering (isolate equipment/set guards)
4. Administration (provide training/maintenance)
5. Personal Protective Equipment (provide gloves/goggles)

Hazard Controls

Elimination

Eliminating the hazard is the best method of control. It is the process of eliminating the workplace condition, equipment, chemical or act causing the hazard.

Examples: Removing objects and materials that could be tripping hazards. Cleaning spills that could cause someone to slip, trip and fall.

Substitution

Substituting a work method, person, substance, tool or piece of equipment for a less hazardous one, can be an effective hazard control.

Examples: Substituting the need for electrical cords running across walkways by installing more electrical outlets. Substituting chemical cleaners with less toxic agents.

Engineering

Engineering controls are methods built into the design of a plant, equipment or process to minimize, eliminate, or contain the hazard. They are very reliable with proper design, use and maintenance.

Examples:

Isolation: Keep the hazard away from employees using control rooms, machine guards, protective barriers and shields, security fences, guardrails, and clearance distances.

Process: Change the way employees perform a job activity or process to reduce risk such as automating a process to reduce the number of employees handling materials.

Ventilation: Provide ventilation to improve the air quality to an acceptable and safe level by removing or diluting air contaminants.

Administrative Controls

When engineering controls are not practical, use administrative controls. These controls limit employee exposure to a hazard. They do not eliminate the hazard, but they provide an acceptable way to work around the hazard.

Examples:

Reduction: Reduce the frequency with which one employee performs a hazardous task.

Rotation: Rotate employees to reduce exposure time.

Training: Train employees to recognize the hazards and employ safe work practices.

Maintenance: Establish procedures for ongoing maintenance of equipment and facilities.

Inspections: Establish regular formal safety inspections and safety audits.

Personal Protective Equipment (PPE)

If you cannot eliminate or reduce the hazard to an acceptable level, you must protect the employee from exposure. This protection requires the employee wear or use appropriate personal protective equipment. PPE is the last line of defense and a critical part of a health and safety program.

Hazard Controls: Scenario 3

This is an example of how a supervisor develops hazard controls.

Step 3: Develop Hazard Controls

Work site: Warehouse.

Task: Adjusting the forks of the front end loader for material handling.

Hazard: Losing control of the forks on the front end loader. Fork dropping on the foot.

After identifying the hazard to the worker and finding out how serious the risk is, the supervisor discusses hazard controls with the worker. They go down the list of five controls to see how to eliminate or reduce the risks to the worker.

They can't ***eliminate*** the risk, or ***substitute*** it with something else. They look at ***administrative*** controls. They decide the worker should not adjust the forks alone. It takes two workers. Next they decide on *training* and *maintenance*. The supervisor makes sure the worker receives training by showing her how to adjust the forks safely. They then look at the forks to make sure the sliding rod is lubricated and the bushings are not worn out.

Lastly they look at the ***Personal Protective Equipment*** *(PPE)* control. In this case, appropriate footwear: a steel toe or metatarsal foot guard, which meets the CSA standard CAN/CSA-Z195-M92, *Protective Footwear* set out in the *Safety Regulations*.

Analysis

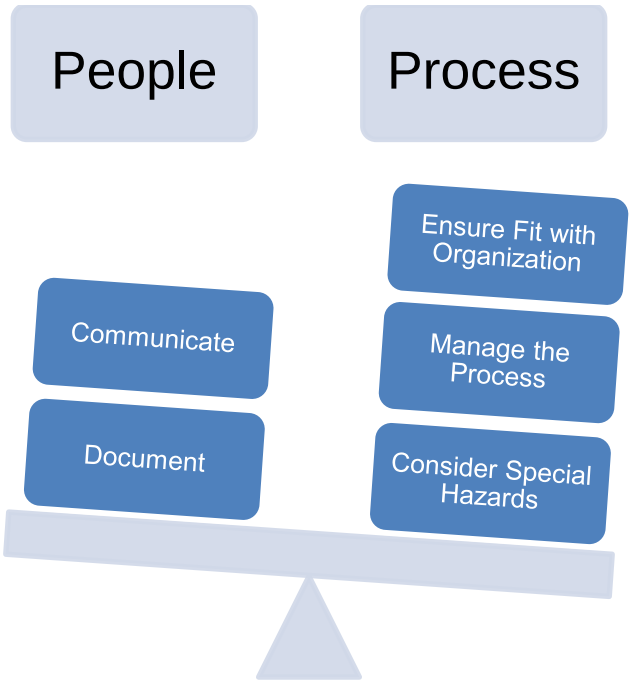
Result of controls to be developed: Administrative and PPE

Hierarchy of Controls
Elimination: not possible
Substitution: not possible
Engineering: not applicable
Administrative: *Process* = Two people instead of one to manipulate the forks
Training = Employee has to be shown how to work safely
Maintenance = Ensure sliding rod is lubricated
= Ensure bushings are not worn out
Personal Protective Equipment (PPE): *Appropriate footwear*: steel toe or metatarsal foot guard

Completion: Before doing task

Step 4: Implement Hazard Controls

Basics of Implementation



Communicate Hazards and Controls

Workers must be informed of the hazards they may encounter and the procedures or methods required to effectively control or mitigate those hazards. If possible involve workers in deciding on effective strategies for eliminating or reducing risk. Employees must report hazards, injuries and near-misses to the employer.

Document Control Strategies

Once you establish a control strategy, you need to implement it. Document the entire process. Documentation should include dates, a description of the control method(s), the person responsible for implementation and when implemented.

Make sure your Controls Fit your Organization

The system for controlling hazards and risks needs to suit the organization. Work processes, such as safe work procedures, must be developed to ensure the safety of workers at a specific work site. The size and the type of organization or operation influence decisions about the kind of systems, procedures and controls to develop.

Manage the Process

The process is easier to manage when you divide the workplace into areas, prioritize actions according to those areas, and outline methods for each area:

- Specific work processes (machining parts on a lathe)
- Work locations (warehouse/office/kitchen)
- Work roles (nurse/mechanic/radiograph/receptionist)
- Production or service delivery (drum cleaning/class room teaching)

Focus on priorities

When deciding on priorities for action, focus first on areas that have the potential to cause the most harm, or cause harm most often.

Make sure the actions that control hazards and risks in one area do not create risk in another area.

Special Hazards

Expertise

You may encounter special hazards beyond the scope of your experience. Examples include improper workstation design, specialty chemicals, and radioactive materials. Recognize limitations and seek outside expertise to assist in developing controls.

Emergency

Prevent an emergency. Identify and control hazards before something goes wrong. However, emergency situations can happen even when all precautions are taken and every attempt is made to eliminate or control a hazard. Everyone at the site needs to know the workplace emergency response plan. An example is a fire drill that helps workers become familiar with exit routes and what to do if an actual fire occurs.

Implementation: Scenario 4

This is an example of how a supervisor goes about implementing controls.

Step 4: Implement Hazard Controls

Work site: Warehouse.

Task: Adjusting the forks of the front end loader for material handling.

Hazard: Losing control of the forks on the front end loader. Fork dropping on the foot.

The supervisor identified a workplace hazard, calculated the risk to the worker and together with the worker decided on the control measures to use to reduce the risk.

The supervisor now develops an implementation plan. He documents the process, writing down when he did the assessment, the three types of control methods he is implementing, the four actions to be taken, when and by whom. He then considers an emergency response if such an accident should happen.

Analysis

Controls: Administrative and PPE

Hierarchy of Controls
Elimination: not possible
Substitution: not possible
Engineering: not applicable
Administrative: *Process* = Two people instead of one to manipulate the forks
Training = Employee has to be shown how to work safely
Maintenance = Ensure sliding rod is lubricated
= Ensure bushings are not worn out
Personal Protective Equipment (PPE): *Appropriate footwear*: steel toe and/or metatarsal foot guard

Emergency Plan: Provide first aid equipment, assign responders, train staff, familiarize staff with first aid protocols

Implementation: Training – On-the-job training by supervisor
Maintenance – Worker to check once a day before operating Loader
PPE - Worker responsibility - Supervisor to check

Step 5: Monitor and Report

Controls need regular monitoring to make sure they are protecting the health and safety of people. Follow-up to confirm the control method effectively eliminates, reduces or protects people from the hazard. It is also important to review hazard assessments. This ensures changes in the workplace do not introduce new hazards, or indicates when a hazard with a low priority becomes high priority.

Ways to Monitor Hazard Controls

Events that may trigger the need to review or revise a hazard assessment:

- start of a new project
- change in the work process
- change or addition to tools, equipment, machinery or location
- new employee
- moving to a new building or work area
- introducing new chemicals or substances
- new information becomes available about a product
- accident/ injury/ near-miss

Maintain Effective Controls

Assign responsibility for health and safety: People are more likely to follow through and maintain procedures when all levels of management are held responsible.

Regular communication: Hazard controls work more effectively with ongoing consultation and discussion with workers.

Effective communication: Hazard controls are more effective when all workers understand the language. Use signs and symbols for ease of understanding.

Up to Date Training and Competency

Hazard control depends on people having the right training and competency to do a job safely. Provide training to maintain competencies as well as ensure new employees work safely.

What is the difference between education and training?

Education provides general information

Training is job-specific and task-specific

Keep Records

Keeping records on the results of controls implemented has many benefits.

- Helps to target training for specific or key hazards
- Provides a basis for making safe work procedures
- Gives a base level of information when changes require new measures
- Allows new employees to understand previous decisions about controls
- Shows shareholders and authorities that OHS hazards and risks in your organization is under control.

Report Hazards

Health and safety legislation requires employees to report hazards to their supervisor. Report verbally, or by completing a simple form available at bulletin boards or other obvious places. By reporting hazards, you prevent hazards. This process is one of the most effective ways to prevent injuries.

Monitor and Report: Scenario 5

This is an example of monitoring the process.

Step 5: Monitor and Report

Today a new employee starts working in the warehouse loading area. One of the employees, who used to help adjust the forks on the front end loader, reports the potential hazard by reminding the new supervisor of the hazard associated with the task.

The previous supervisor kept a record of the controls implemented in that area and the new supervisor looks at the records. Before the worker starts work she talks to him, explaining his responsibilities and provides the required task-specific training. She makes sure the machine is properly maintained and the worker wears the appropriate footwear.

Analysis

Event that indicates need for review of controls: New employee

Work site: Warehouse

Task: Adjusting the forks of the front end loader for material handling

Hazard: Losing control of the forks on the front end loader. Fork dropping on the foot.

Potential Harm: Serious injury to the foot (e.g. fracture)

Controls in place: Administrative and PPE

Administrative: *Process* = Two people instead of one to manipulate the forks
Training = Employee has to be shown how to work safely
Maintenance = Ensure sliding rod is lubricated
= Ensure bushings are not worn out
Personal Protective Equipment (PPE): *Appropriate footwear*: steel toe and/or metatarsal foot guard

Implementation: Training – On-the-job training by supervisor
Maintenance – Worker to check once a day before operating loader
PPE - Worker responsibility - Supervisor to check

Resources and Contact Information

Legislation & Standards

Canadian Government: Department of Justice Canada
http://laws-lois.justice.gc.ca/eng/regulations/SOR-86-304/page-1.html

Canadian EnviroOSH Legislation Plus Standards
http://ccinfoweb.ccohs.ca/help/legislation_searching.html

Canadian Governmental Occupational Health & Safety Departments
http://www.ccohs.ca/oshanswers/information/govt.html

CSA. Canadian Standards Association.
http://www.csa.ca/cm/ca/en/home

OHS Organizations

CCOHS. The Canadian Centre for Occupational Health and Safety. http://www.ccohs.ca/
or http://www.ccohs.ca/oshanswers/hsprograms/hazard_risk.html

IAPA. Industrial Accident Prevention Association www.iapa.ca

British Columbia, WorkSafeBC www.WorkSafebc.com

WorkSafe Saskatchewan
http://www.worksafesask.ca/Identify-Hazards

Worksafe Alberta.
http://employment.alberta.ca/whs/learning/hazard/Hazard.htm

Ontario Ministry of Labour
http://www.labour.gov.on.ca/english/hs/faqs/hazards.php

More Information & Courses

CCOHS. The Canadian Centre for Occupational Health and Safety.
http://www.ccohs.ca/

CSA. Canadian Standards Association.Introduction to Risk Assessment and Control Reliability. http://www.csa.ca/cm/ca/en/training

OHS Canada's E-Learning: Competency Based Distance Education Program
http://www.ohscanada.com/elearning/r03details.asp

IAPA. Health and Safety downloads
http://www.iapa.ca/main/resources/resources_downloads.aspx

Manufacturers' Health & Safety Association (MHSA). Hazard Assessment & Analysis Course
http://www.mhsa.ab.ca

WorkCover NSW. !HAZPAK. Making your workplace safer: A practical guide to basic Risk Management. WC00228.
http://www.workcover.nsw.gov.au

Worksafe Victoria. Controlling OHS hazards and risks: A handbook for workplaces. (2007).
http://www.worksafe.vic.gov.au/wps/wcm/connect/fb056d004071f610abffffe1fb554c40/controlling+OHS+Hazards.pdf?MOD=AJPERES

Understanding Risk. Machinery Safety 101.
http://www.machinerysafety101.com/2011/01/31/understanding-risk-assessment/#axzz1kbtSEpRj

Psychosocial Risk Assessment in the Workplace
http://www.comh.ca/conferences/2007/workplace/en/poster/documents/PsychosocialRiskAssessments.pdf

IAPA. (Industrial Accident Prevention Association). Conducting Hazard Assessments. Workplace-Specific Hazard Training Participant Guide. TPG54200104, 2000.

Government of Alberta. (2003). Occupational Health and Safety Code Explanation Guide. Part 2: Hazard Assessment, Elimination and Control. Edmonton, AB:Queen's Printer.

Occupational Safety and Health Administration (OSHA). (2002). Job hazard analysis.

IAPA (Industrial Accident Prevention Association). (2006) Determining Significant Hazards At Work: A Guide for Employers and JHSCs Workbook for Designated Substance Assessments.

Ergonomics

http://ergonomics.healthandsafetycentre.org/s/Home.asp
http://www.ccohs.ca/oshanswers/information/ergonomics_books.html

On-line ergonomics calculator

http://www2.worksafebc.com/calculator/llc/default.htm
http://www2.worksafebc.com/ppcc/default.htm

Forms and Checklists

This section provides examples of forms and checklists for your use.

Different work sites have different OHS needs and will use different inspection and reporting methods. More examples of forms are available on the websites cited in the section called Resources and Contact Information.

Forms and checklists need to be adapted to your work site and must meet the requirements for protecting and advancing worker safety.

GOOD PRACTICES CHECKLIST

Good Practices to Prevent Workplace Hazards

1. **Before starting any job:**

- get proper training on how to do the job safely
- review safe work practices
- check your work area for possible hazards
- ensure your work area is clean and orderly
- remove hazards, like objects you can trip over, when safe to do so
- inspect equipment and tools to make sure they are in good condition and all safety features are in place
- wear the proper PPE

2. **While doing your job:**

- follow safe work practices
- maintain good housekeeping standards
- pay attention to what you are doing
- immediately stop working if you see a hazard or think the work is unsafe

3. **After completing your job:**

- clean up your work area and remove any hazards
- inspect tools and equipment to make sure they are still in good working order
- put tools and equipment in their proper location
- put PPE away
- advise your supervisor that you finished your job, and of any health and safety issues

Workplace-Specific Hazard Identification Checklist

DESCRIPTION	YES	NO
Have you identified or determined?		
The number of workers regularly employed in the area		
The number of workers temporarily in the area		
The types of work activities carried out in the various areas		
The number of working hours and shifts		
The times of high and low levels of activity		
The size of the areas requiring inspection (including washrooms, change areas, storage and eating areas, parking lot)		
Have you reviewed?		
Machinery/equipment inventory		
Material safety data sheets and an inventory of hazardous materials or hazardous physical agents		
Reports, claims information, accident and incident reports		
Accident, injury or illness records for workplace and industry		
Previous records that might indicate trouble spots (e.g. inspection reports)		
Reports of any workplace testing, including hygiene testing		
Near-miss reports		
Work flow or process flow information		
Inspection, repair and maintenance service records for equipment or machinery		
Manufacturers' instructions for installation and operation of equipment or machinery		
Written work procedures or rules		
Consultation with knowledgeable or experienced people on hazards		

MATERIALS CHECKLIST

Check	Yes	No
Is there exposure to chemicals (solvents, gases, caustics, etc.)?		
Are Workplace Hazardous Materials Information System (WHMIS) and Transportation of Dangerous Goods (TDG) regulations in place?		
Are electrical hazards present (grounding, arcing, etc.)?		
Are biological hazards present (bacteria, suffocation, etc.)?		
Are purchasing, shipping and receiving policies in place?		
Are materials stored safely?		
Are materials proper and safe for the job?		
Are there sharp objects that could cut or pierce the body (glass, knife blades, sheet metal, nail guns, needles, wood splinters, metal burrs, etc.)?		

What specific problems arise involving material handling?

_____

_____

_____

_____

_____

Materials must:

- Be handled, used, stored, and disposed of materials according to WHMIS regulations where applicable.
- Be lifted and moved using proper techniques

EQUIPMENT & TOOLS CHECKLIST

Check	Yes	No
Is there a purchasing policy in place for new equipment/tools?		
Does the equipment or tool meet legislative requirements?		
Is safety equipment and PPE provided, where required?		
Do the employees use safety equipment and PPE, where required?		
Are employees using appropriate tools, and are they using them correctly?		
Is training provided in the correct use of equipment and tools?		
Is suitable equipment provided and tools that are safe and in good condition?		
Do employees inspect their equipment and tools on a regular basis?		
Are there proper storage facilities for equipment and tools?		
Is there a preventative maintenance program in place?		
Will employees be operating, or be exposed to, tools or equipment which may generate flying debris (hammering, sawing, chipping, grinding, drilling, buffing, etc.)?		
Is there a lock-out/tag-out system?		
Is there a purchasing policy in place for new equipment/tools?		
Does the equipment or tool meet legislative requirements?		

What equipment or tool emergencies are likely to occur?

_____

The equipment and tools must:

- be in good condition and only used for the appropriate task
- include all safety features such as guards
- be inspected on a regular basis
- be properly stored

ENVIRONMENT CHECKLIST

Check	Yes	No
Are there potential problems with housekeeping?		
Are employees exposed to extreme cold, heat, or adverse weather conditions?		
Is excessive vibration or noise a problem?		
Is there sufficient lighting?		
Is exposure to harmful radiation possible?		
Are there dust, vapours, fumes, or mist in the air?		
Does the work environment pose harm to the public?		
Could employees be caught in between, or on objects?		
Could employees be struck by objects?		
Could employees fall from heights, into openings or excavations, or slip or trip on objects or surfaces?		
Could employees suffer sprain, strain or injury from pushing, pulling or lifting?		
Could employees suffer illness or industrial disease from an unhealthy work environment?		
Are there objects that could fall from above?		
Is there potential for exposure to blood or bodily fluids?		
Are there energy sources that could cause harm if accidental release or startup occurs (electrical, pneumatic, hydraulic, thermal, mechanical, gravity)?		
Are there hot or cold surfaces that could burn or freeze (welded parts, cryogenic materials, autoclaves, ovens/stoves, molten materials)?		
Does the layout of the workplace create a hazard (falling hazards exceeding four feet, low clearances, confined spaces)?		
Does the layout of the workplace create a hazard (falling hazards exceeding four feet, low clearances, confined spaces)?		

The workplace/environment:

- must be clean and orderly
- may be outside and subject to extreme temperatures
  may include excessive noise or vibration; and may be subject to dust, fumes, and other hazards in the air

PEOPLE CHECKLIST

Check	Yes	No
Employees		
Do employees have the appropriate skill sets to perform their work safely?		
Are employees aware of the hazards that could affect them?		
Have employees received adequate training?		
Are employees physically and emotionally stable?		
Are employees motivated to work safely?		
Do employees follow established safe work practices and procedures?		
Is an employee's performance influenced by drugs or alcohol?		
Management		
Is management committed to an Occupational Health and Safety program?		
Has management received appropriate training for their role in occupational health and safety (OHS Committee)?		
Is there an OHS Committee orientation for new or transferred employees?		
Do employees receive appropriate supervision as relates to the OHS Committee?		
Suppliers		
Are there purchasing controls to ensure suppliers' compliance of safety standards?		
Contractors		
Are there safety pre-qualifications or requirements?		
Are they following legislation?		
Is there an OHS Committee orientation for contractors?		

People must:

- know their rights and responsibilities in the workplace
- have the skills and knowledge to do their job
- be told about, and able to recognize hazards
- have the training to do their job safely
- be given correct information and instruction to do their job safely
- be physically and mentally able to do their job
- wear the required PPE
- adhere to safe work practices

Job Hazard Assessment (JHA)

Complete this form before the start of each task or with any change in conditions.

Job:_____ **Date:**_____

Review the following with the work crew. List tasks and hazards, and identify controls.
***** *High Risk tasks need a Safe Operating Procedure.*

Personal Hazards
- ☐ clear instruction provided
- ☐ able to perform the task
- ☐ trained to use equipment/tools
- ☐ distractions in the work area
- ☐ working alone
- ☐ aware of weather conditions
- ☐ noise levels
- ☐ have all the correct PPE

Activity Hazards
- ☐ welding/grinding
- ☐ burn/heat sources
- ☐ compressed gasses
- ☐ energized equipment
- ☐ electrical cords condition
- ☐ equipment/tools inspected
- ☐ lockout procedure in place
- ☐ airborne particles

Environmental Hazards
- ☐ spill potential
- ☐ climatic conditions
- ☐ MSDS reviewed
- ☐ ventilation required
- ☐ heat stress/cold exposure
- ☐ other workers in the area
- ☐ lighting levels
- ☐ housekeeping

Ergonomic Hazards
- ☐ working in a tight area
- ☐ parts of body in the line of fire
- ☐ working above your head
- ☐ pinch points identified
- ☐ working without being trapped
- ☐ repetitive movements

Working at Height Hazards
- ☐ barricades, flagging & signs
- ☐ hole coverings in place
- ☐ protection from falling items
- ☐ powered platforms
- ☐ fall arrest
- ☐ ladders

Access/Egress Hazards
- ☐ scaffold inspected and tagged
- ☐ slip/trip potential identified
- ☐ required permits in place
- ☐ excavations
- ☐ confined space
- ☐ other

Identify and prioritize tasks and hazards, then identify plans to eliminate or control the hazards.

TASK	HAZARD	CONTROL

**All hazards must have action plans to eliminate or control them. Plans must be in place before starting a task.*

Name:_____ Name: _____ Name: _____

Supervisor Signature: _____ Reviewed by: _____

HAZARD ASSESSMENT REPORT FORM **Date:**

Name of Employee:

Signature:

Name of Supervisor:

Location: **(Describe the work site, building or area)**

Description of Task or Concern:

Consequence:

Major □ **(Potential to cause death or disability = immediate attention)**
Serious □ **(Potential to cause critical injury & serious health effects = immediate attention)**
Moderate □ **(Potential to cause injury that requires medical treatment or lost time = attention)**
Minor □ **(Insignificant / potential to cause injury that requires first aid = monitor)**

Hazard Control Action Plan:
(Describe the corrective action items to implement: how, by whom and when)

Notified:
□ Worker
□ OHS Committee
□ Health and Safety Representative

Follow up: Date:

Supervisor Signature: Date:

Hazard Report Form - Example	
Name:	Date:
Location:	
Equipment:	
Description of hazard:	
Suggested corrective action:	
Signature:	
Supervisor's remarks:	
Corrective action taken:	
Signature of Supervisor:	Date:

HAZARD ASSESSMENT

Work area:	**Assessment performed by:** **Signature**:	**Date:** **Supervisor Signature**:

Task	Hazard	Exposure	Probability	Consequence	Risk	Controls	Implemented

Acknowledgments

The Workers Safety and Compensation Commission (WSCC) of the Northwest Territories and Nunavut appreciate the participation of their stakeholders with the Occupational Health and Safety developments.

WSCC acknowledges the Canadian Centre for Occupational Health and Safety (CCOHS), the Canadian Standards Association (CSA) and WorkSafeBC, for information used in the NWT & Nunavut Code of Practice on hazard assessment.

Related publications and the *Safety Act and Regulations* are available on our websites wscc.nt.ca or wscc.nu.ca.

If you have any questions or comments, please contact the Chief Safety Officer. You can contact the WSCC by phone at 867-920-3888 or toll free at 1-800-661-0792.

Workers' Safety & Compensation Commission
Northwest Territories and Nunavut

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wscc.nu.ca