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Hazard Identification, Assessment and Control

1.0 Statement of Standard

In broad terms, hazard assessment involves the recognition and control of hazards. This is accomplished by determining what hazards are present in the workplace (**Identification**); assessing the level of risk for the hazards identified (**Risk Rating**); implementing strategies to eliminate or reduce the risk involved (**Controls**); and following up (**Corrective Action**) to ensure that the control strategies chosen are effectively implemented and that recommended changes are being completed in a timely manner.

1.1 Objective

A hazard at the workplace is any condition that has the potential to cause injury, illness, or loss. A hazard assessment conducted in the workplace is one of the most effective ways to ensure a safe work environment. It is a careful look at what could harm workers, damage property, or cause process downtime or environmental damage at a workplace.

The benefits of conducting a written hazard assessment include:

- Reducing the number and severity of incidents;
- Identifying the need for worker training;
- Identifying inadequate or missing procedures;
- Identifying the need for equipment maintenance;
- Reducing production losses and property damage; and
- Increasing worker involvement in health and safety issues.

1.2 Scope

For normal operations, a listing of tasks that may have significant risk to people, environment, or equipment will be maintained along with the task Hazard Assessment. A Hazard Assessment shall be conducted and documented prior to any new work site activity and prior to the introduction of a new process or new piece of equipment.

All potential hazards must be systematically prioritized, and those of imminent danger to workers must be rectified prior to work commencing.

Hazard re-assessments are required:

- At intervals that prevent the development of unsafe and unhealthy working conditions;
- When a work process or operation changes;
- When a new work process or product is introduced;
- When new regulations are implemented that affect a specific written procedure;
- Before work commences at a new work site;
- When Inspection or Incident Reports indicate a need;
- When First Aid records indicate a trend; and
- When valid Employee suggestions are received.

All District workers required to perform hazardous tasks will receive appropriate instruction and training. Written copies of practices and procedures will be accessible and available to all workers.

Workers are expected to follow all applicable practices and procedures and inform supervisors if they have a concern about a work assignment.

1.3 Hazard Identification

To better understand the hazards that employees are exposed to on a regular basis, the following definitions will help clarify the interrelationship between hazards and their potential risk factor:

Hazard: A source of danger; potential for loss or injury; a condition or practice with the

potential for accidental loss, and

Risk: The chance of a loss occurring; a measure of the probability and potential severity of harm or loss.

The first challenge is to identify the hazards associated with each job and workplace. All personnel must understand how to identify potential hazards associated with their workplace. Hazards can exist in many forms. They can be visible or hidden, and they may also be a condition or an action. Recognition and control of hazards ensures that corrective actions may be completed in a timely manner prior to an incident occurring.

A hazard is any circumstance or condition that poses a risk of an incident.

Commonly used methods of hazard identification are:

1) Physical inspections, both informal and planned;
2) Job Hazard Analysis - which includes breaking down workers' actions into individual tasks and identifying hazards involved with each task;
3) Process Hazard Analysis - which involves following a process from start to finish and identifying the hazards at each stage;
4) Incident Investigation findings; and
5) Operator Hazard Reporting.

When analyzing the hazards associated with a particular job, a Job Task Inventory is a good place to start. By listing the tasks performed for each job, and then considering the hazards associated with each task, a matrix can be constructed that demonstrates the level of risk associated with a particular job. Typically several **Risk Scenarios** can be determined

For a new work site, the main tools for identifying hazards are the Pre-Job Planning Meeting, and the Site Inspection. Usually, a list of possible hazards is provided to allow the workers to evaluate the hazards associated with a particular work site. It is important to include as many of the workers as possible in this process in order to perform a thorough evaluation and to maximize the educational value of the exercise that familiarizes the workers with the hazards.

1.4 Hazard Risk Rating

Once the hazards have been identified, they must be rated for risk and controlled. Risk rating involves considering the **Impact,** or the potential severity of a loss and the **Probability** of a loss occurring when the hazardous event is present. Using this approach, the hazards can be rated as Low, Medium, High or Extreme Risk. These ratings will prioritize actions in order to control the risks. See the figure titled **Risk Matrix** for a visual explanation of the rating process.

As a note, it is not appropriate to compare jobs in terms of which job is more dangerous, rather this exercise should be used to ensure that all jobs are performed safely with the required controls in place and functioning.

1.5 Hazard Control

The best way to control a hazard is to remove the hazard from the process or work site. Quite often this action is not feasible and control measures must be implemented. These measures may include isolating the hazard (**Engineering Control**), writing a Safe Work Practice to work safely despite the hazard (**Administrative Control**), or the required use of personal protective equipment to shield against and minimize the risk of the hazard (**PPE Control**). All control methods must be monitored or frequently reviewed with the work site personnel to continue to ensure that the hazard is being effectively controlled.

1.5.1 Engineering Controls

Engineering controls should be used first, if possible, and provide the highest degree of control because they eliminate or control the hazard at its source.

The use of engineering controls includes:

Elimination - Completely removing a hazardous job, tool, process, machine, or substance;

Substitution - Substituting or replacing one substance or process with another that would not pose a potential hazard;

Redesign - Hazards can often be "engineered out" through redesign of the work site,

work processes, and jobs;

Isolation - Hazards can often be isolated through containment or enclosure;

Automation - Some processes can be automated or mechanized;

Barriers - Some hazards can be blocked or barricaded. The further the barrier keeps the hazard away from the workers, the more effective it is;

Absorption - Engineering controls that would absorb the hazard, such as baffles that block or absorb noise; and

Dilution - Some hazards can be diluted or dissipated.

1.5.2 Administrative Controls

If engineering controls are not feasible or practical, then administrative controls are the next approach to controlling the hazard. The uses of administrative controls include, but are not limited to:

- Planning and communication;
- Codes of Practice, Safe Operating Procedures, and Safe Work Practices;
- Safe Work Permits;
- Work/rest schedules limiting exposure to the hazard;
- Limiting hours of work;
- Scheduling hazardous work during times when exposure to workers is minimized;
- Monitors and alarm systems;
- Training;
- Safety meetings; and
- Posters and bulletins.

The district has put into place a maintenance program that functions to keep all equipment in good running order in order to reduce costs and maximize operating time. In addition, the maintenance program ensure that legislative requirements and industry practices are satisfied. Where applicable, the district will retain on-site copies of all engineering codes and standards that apply to particular equipment and processes.

1.5.3 Personal Protective Equipment

Personal protective equipment (PPE) must always be used as a last resort in controlling hazards. PPE is less effective as a control as it does not eliminate the hazard. The PPE must be properly selected, maintained, and worn by workers.

Risk controls are connected to a variety of industry recommended standards, guides (e.g., CSA Standards, ASME Standards, IMS Standards, IRP Guidelines, API Standards, and manufacturers' specifications), and government legislation. An organization must be familiar with the applicable standards and regulations that are related to their work activities and utilize them to reduce the risk of experiencing loss.

1.6 Hazard Reporting

Workers will notify the appropriate supervisor of any hazards found on, or brought to, work sites. Even though this can be a verbal report, it is recommended that it should be in writing. If a work order system is in place, a work order should be generated for this hazard. Otherwise, a worker should be assigned to correct the hazard and a target date should be chosen for completion. Corrective action like this should be recorded and followed up regularly to ensure completion of tasks.

A hazard report must include the following:

- Date reported;
- Description of the hazard and its location;
- Risk presented;
- Control measures needed;
- Interim actions taken, if any; and

- Name and signature of worker who reported the hazard.

1.6.1 Corrective Action and Follow-Up

Once the hazard has been identified, rated, and has had controls put into place, it is critical that the district follows up to ensure:

- That all affected workers are informed of changes that are made to control hazards. This can be performed through Safety Meetings, employee newsletters, memos, or brief monthly reports to summarize the changes;
- Workers are following the Hazard Controls determined to be required. This is often performed through workplace observations and reminders raised during Safety Meetings; and
- That necessary Hazard Controls, such as writing of a new procedure or installation of a new machine guard, were performed and completed. This is best accomplished with either a Work Order system. In this way, Hazard Controls are not forgotten by personnel and stay on record until corrected or determined by management that they are no longer required. Management is required to follow-up on outstanding work orders and corrective action to ensure action items are performed in a timely manner.

In many cases, knowing that the hazard exists and regularly being reminded of its presence is sufficient control. By raising the overall level of safety awareness of each worker through various means, injuries and damage by workers being more careful on the job.

1.7 Hazard Assessment Training

Training will be provided to key personnel in conducting thorough hazard assessments. Because all personnel will eventually be required to perform a hazard assessment on the job, informal training will be provided to all personnel, and will be documented by key trained personnel on the On-The-Job Training form and filed accordingly. Those employees making product and equipment purchases on behalf of the district will be instructed to consider hazards associated with the purchases prior to placing the order.

Appendix 1 – Job Hazard Analysis

Job Hazard Analysis

Job/Task/Activity	
Name of Participants	
Approved by	
Date	

Assessing the risk is a brainstorming exercise, which is most effectively carried out in a team environment with the people required to complete the activity or process. Most activities or processes are broken down into a variety of separate tasks. For each task, consider the hazards, the potential harm or negative outcomes and the conditions required for those negative outcomes to occur.

Whenever assessing the health and safety risks associated with a task, always consider the following primary risk factors.

- The **physical activities** required to complete the task e.g. repetitive movement, high force, physical exertion, awkward posture
- The **work environment** e.g. lighting, work layout, traffic, thermal comfort, working in isolation
- The **nature of the hazard itself** e.g. working with chemicals, microorganisms, radiation, machinery, potentially violent clients
- The **individual workers involved**, e.g. level of training, skills, experience, health, age, physical capacity

Job Hazard Analysis

A work group may have a considerable number of hazards or hazardous jobs to be managed. Therefore, highest priority should be assigned to those that have the greatest potential for loss or injury.

There are two aspects to be considered when prioritising the risks:

- likelihood of exposure, ie how many people are exposed, how often etc, and
- potential consequences of exposure to the hazard, ie whether serious injury may result.

The following matrix can be used to assign a “risk rating” to a hazard. Where exposure is more likely and the potential consequences more severe, highest priority is given for prompt resolution.

Any tasks that are found to present an imminent risk of serious injury or other adverse event should be halted until suitable controls are put in place to reduce the risk to an acceptable level.

			Potential Consequences				
			Minor injuries or discomfort. No medical treatment or measureable physical effects.	Injuries or illness requiring medical treatment. Temporary impairment.	Injuries or illness requiring hospital admission.	Injury or illness resulting in permanent impairment.	Fatality
			Not Significant	**Minor**	**Moderate**	**Major**	**Severe**
Likelihood	Expected to occur regularly under normal circumstances	**Almost Certain**	**Medium**	**High**	**Very High**	**Very High**	**Very High**
	Expected to occur at some time	**Likely**	**Medium**	**High**	**High**	**Very High**	**Very High**
	May occur at some time	**Possible**	**Low**	**Medium**	**High**	**High**	**Very High**
	Not likely to occur in normal circumstances	**Unlikely**	**Low**	**Low**	**Medium**	**Medium**	**High**
	Could happen, but probably never will	**Rare**	**Low**	**Low**	**Low**	**Low**	**Medium**

Job Hazard Analysis

Task or scenario	**Hazard/s**	**Associated harm,** e.g. what could go wrong?	**Existing Risk Controls**	**Current risk rating** Use the Risk Matrix	**Any additional controls are required?**	**Residual risk rating** Use the Risk Matrix

Appendix 2 – Field Level Hazard Assessment

Access any District 22 safety practices/ procedures or documents through the portal.

Or contact your supervisor

To access MSDS, download a QR reader on your smartphone and scan.

Or go through the portal

Or contact your supervisor

To reference legislation go to: www.worksafebc.com

Or contact your supervisor

District 22 Safety

Phone: 250-549-9244

School District 22

Field Level Hazard Assessment

Location: _____

Date: _____

Work Type/Task: _____

Names of participants: _____

_____

_____

First Aid Attendant: _____

First Aid Location: _____

	Environmental Hazards			Access/Egress	
NA	YES		NA	YES	
☐	☐	1 Asbestos	☐	☐	18 Ladders (tied off)
☐	☐	2 Lead	☐	☐	19 Slips/trips
☐	☐	3 Silica	☐	☐	20 Evacuation (alarms, routes, ph.#)
☐	☐	4 MSDS reviewed	☐	☐	21 Aerial lift/man basket (inspected)
☐	☐	5 Dust/Mist/Fumes			**Personal Protective Equipment**
☐	☐	6 Noise	☐	☐	22 Safety rated footwear
☐	☐	7 Other Workers in area	☐	☐	23 Eye protection
☐	☐	8 Work area clean	☐	☐	24 Reflective vest
☐	☐	9 Falling objects	☐	☐	25 Respirator/Dust mask
☐	☐	10 Weather conditions	☐	☐	26 Hard hat
☐	☐	11 Ground Disturbance	☐	☐	27 Other:
☐	☐	12 Working Alone			**Tools/Equipment**
☐	☐	13 Working at Heights	NA	YES	
☐	☐	14 Confined Space	☐	☐	28 Proper tools/equipment on site
☐	☐	15 Electrical	☐	☐	29 Tools/equipment inspected
☐	☐	16 Other:	☐	☐	30 Fire Extinguisher
17	**Ergonomic Hazards**		☐	☐	31 Other:
List any ergonomic hazards (ex: awkward positioning)					

Notes

			Potential Consequences				
			Minor injuries or discomfort, No medical treatment or measurable effects	Injuries or illness requiring medical treatment	Injuries or illness requiring hospital admission	Permanent impairment	Fatality
			Not Significant	Minor	Moderate	Major	Severe
Likelihood	Expected to occur regularly under normal circumstances	Almost certain	Medium	High	Very High	Very High	Very High
	Expected to occur at some time	Likely	Medium	High	High	Very High	Very High
	May occur at sometime	Possible	Low	Medium	High	High	Very High
	Not likely to occur in normal circumstances	Unlikely	Low	Low	Medium	Medium	High
	Could happen but probably never will	Rare	Low	Low	Low	Low	Medium

Item #	Specific Hazard	Plan to eliminate or control	Hazard Rating

Appendix 3 – Hazard Identification Report Form

School District No. 22 (Vernon)
Occupational Health and Safety Programs

Employee Incident/hazard/Near Miss Report Form Notes:

1. If a medical professional is visited on account of an injury or condition which resulted from the workplace your supervisor must be notified ASAP and the incident report form, form 6a and 7 must be completed and submitted to personnel@sd22.bc.ca ASAP.

2. This form will be used to report all incidents and near miss events along with hazard identifications. It must be submitted to personnel@sd22.bc.ca within 24 hrs of occurrence.

3. In the event that an injured employee required the attention of a medical practitioner, an investigation into the incident must be conducted as required by Section 3.8 of the Occupational Health and Safety Regulations.

4. The supervisor of the injured employee must inform the personnel department and School Board Office, for all time-loss accidents immediately.

5. An investigation must be conducted any time there is a "near-miss" incident which did not involve injury but had a potential for causing injury, as required in Section 3.8 of the Occupational Health and Safety Regulations.

   The procedure will be the same as for an investigation into an incident causing injury.

6. The personnel department will forward a copy of the Report to the District No. 22 (Vernon) Occupational Health and Safety Officer, to the Director of Instruction Teaching Personnel if the event involves a teacher or to CUPE HR if the event involves a CUPE member.

7. The Committee will review all Investigation Reports and may further investigate the accident should it be deemed necessary.

8. The supervisor shall ensure that the incident report is complete and sent to personnel@sd22.bc.ca within 24 hrs of the event.

9. Provide as much information as possible.

10. Further investigation will be scaled according to the impact or potential impact of the incident.

School District No. 22 (Vernon)

Incident/Hazard ID/Near Miss Report Form

Last Name of Person Reporting	First Name		Reported to
Length of Service	Time on Present Job	Worksite	Occupation
Date of Accident/Injury/Near Miss	Time of Occurrence		Date Reported
Nature of Injury/Hazard/Near Miss			
Description of Incident/Hazard/Near Miss :			
Names of Witnesses:			
Basic Cause. Explain fully unsafe condition, personal factor, other:			
Contributory Cause - 1	Recommended Corrective Measures		
Contributory Cause – 2	Recommended Corrective Measures		
Action by: Name		Title	

Names of Investigation Team Members:

☐ O H & S Members Notified ☐ First Aid Attendants Notified

Names _____ _____

_____ _____

Supervisor/Administrator Signature First Aid Signature

DO NOT COMPLETE THIS SECTION: District Safety Committee use only.

Is further investigation required? Yes ☐ No ☐

Send to: personnel@sd22.bc.ca