

## Part 2 Hazard Assessment, Elimination and Control

### Highlights

- Section 7 requires employers to assess a work site and identify existing or potential hazards before work begins. Employers must prepare a report that provides the results of the assessment and specifies the methods that will be used to control or eliminate the hazards. (Section 8 of the *OHS Regulation* requires that the report be in writing and available to workers.)
- Section 8 requires employers, if reasonably practicable, to involve workers in assessing, controlling and eliminating potential hazards.
- Section 9 requires employers to eliminate hazards whenever it is reasonably practicable to do so. If elimination is not reasonably practicable, hazards must be controlled
  - first by using engineering controls
  - then administrative controls, and
  - and finally, as a last option, by using personal protective equipment.
- Section 11 requires an employer to prepare an occupational health and safety plan if ordered to do so by a Director. A Director is a staff member of Alberta Employment and Immigration, appointed by the Minister under Section 5 of the *OHS Act*.

### Requirements

#### Section 7 Hazard assessment

##### Subsection 7(1) Identifying existing or potential hazards

A hazard is any situation, condition or thing that may be dangerous to the safety or health of workers. A hazard has the potential to cause an injury, illness or loss. Some people think of a hazard as “an accident waiting to happen”. *Potential* hazards are those that are foreseeable and reasonably likely to occur.

The purpose of the hazard assessment is to identify and evaluate those conditions that could lead to workers getting hurt or becoming ill. Injuries and ill health can ruin lives and affect an employer's business if production is lost, machinery and equipment are damaged, insurance costs increase, or the employer is prosecuted.

Assessing hazards involves taking a look at what could harm workers at a workplace – the typical question to ask is “What could go wrong?” Doing a hazard assessment allows an employer to decide whether appropriate precautions have already been taken to prevent accidents and injuries, or whether more needs to be done. A hazard assessment takes into account the hazards specific to the work task being done. It also takes into account the potential for hazards present in the surroundings to affect the worker performing the task e.g. movement of vehicles, upset of stored materials, collapse of unsecured structures, collapse of earthen piles, etc.

### Subsection 7(2) Written assessment

Putting the hazard assessment in writing moves it from a “what could go wrong?” walk-around-the-worksites approach to one that is more thorough and repeatable. Having the assessment in writing also proves that it has been done.

The important things an employer needs to decide when assessing a worksite is whether a hazard is significant and whether satisfactory precautions have been taken so that the chances of worker injury are eliminated or made extremely unlikely. When assessing hazards, an employer should keep the process simple.

To comply with this subsection, the employer must be able to produce a written hazard assessment that applies to the worksite or work activities being reviewed. The assessment must indicate the methods used to eliminate or control the hazards identified.

Hazards specific to a particular job or worksite that are not explicitly addressed by the OHS Code should also be assessed by the employer if the hazards are relevant to the employer's operations. Examples include working at extreme temperatures and work-related fatigue.

For every hazardous condition identified, recommendations should be made to eliminate or control it. The recommendations should include the specific actions required to correct the problem.

## Completeness of assessment

An employer must be able to demonstrate that all existing and potential hazards have been identified. The hazard assessment need only include those hazards that apply, or are reasonably likely to apply, to the employer's operations. If confined space entry is never done, or respiratory protective equipment is never required because respiratory hazards are not present at the work site, then neither of these hazards is required as part of the employer's hazard assessment.

The size and scope of the written hazard assessment will vary based on the complexity of the employer's operations and the extent to which those operations present hazards to workers. The assessment may be only one page long, or may take up several three-ring binders. A single-page assessment is acceptable if it identifies all the existing or potential hazards at the employer's work site and describes how the hazards will be eliminated or controlled.

## One hazard assessment for multiple work sites

A unique hazard assessment need not be performed for each work site. If an employer faces the same hazards at multiple work sites, and the safe work practices to be followed are identical at each work site, then a single hazard assessment applicable to all the work sites is acceptable.

The employer must ensure that the circumstances at a new work site do not differ significantly from those encountered at other work sites for which the hazard assessment was done. Doing so, perhaps through a walkabout and visual inspection, ensures that the results of the hazard assessment are valid for the new work site. If unexpected differences are discovered, then the employer is required to perform a hazard assessment that takes these new findings into account.

## Hazard assessment tools

The employer's hazard assessment can be in any written format the employer chooses. The assessment must however identify the workplace hazards and indicate how those hazards will be eliminated or controlled. Figures 2.1 and 2.2 show examples of completed hazard assessment forms applicable to work sites that change very little over time. These examples meet the minimum requirements of the legislation. Employers and workers are encouraged to exceed this baseline level of hazard assessment where possible. Figure 2.1 applies to a small retail operation with limited hazards. Figure 2.2 considers the more complex example of a grocery store.

Figure 2.1 Example of completed hazard assessment for a small retail operation

		Date prepared:
Task	Hazards	Plans to eliminate or control the hazards
Restocking shelves and product displays	<ul style="list-style-type: none"> <li>▪ Products falling down</li> <li>▪ Damaged shelves breaking</li> </ul>	<ul style="list-style-type: none"> <li>▪ Train workers, safety footwear worn by staff</li> <li>▪ Inspect and repair/replace damaged shelves</li> </ul>
Frequently lifting and carrying products	<ul style="list-style-type: none"> <li>▪ Back injuries, overuse injuries of the arms and shoulders</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide workers with carts, dollies, or hand trucks</li> </ul>
Cleaning floors, washrooms, public areas	<ul style="list-style-type: none"> <li>▪ Working with unknown chemicals</li> <li>▪ Chemicals contacting the skin, eyes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Have safe use information [Material Safety Data Sheet (MSDS)] about each cleaning solution available at the workplace</li> <li>▪ If necessary, have gloves and eyewear available for workers</li> </ul>
Restocking storage rooms, moving around the workplace	<ul style="list-style-type: none"> <li>▪ Slipping and tripping</li> </ul>	<ul style="list-style-type: none"> <li>▪ Remove clutter and waste materials from walking areas</li> <li>▪ Clean up spills that can make the floor slippery for walking</li> </ul>
Working alone	<ul style="list-style-type: none"> <li>▪ Not having anyone to help in case of an emergency</li> </ul>	<ul style="list-style-type: none"> <li>▪ Employer will provide a telephone with which to contact the employer or emergency services</li> </ul>
Other		
Other		

Figure 2.2 Example of completed hazard assessment for a grocery store

		Date prepared:
Task	Hazards	Plans to eliminate or control the hazards
Restocking shelves and product displays	<ul style="list-style-type: none"> <li>▪ Products falling down</li> <li>▪ Damaged shelves breaking</li> </ul>	<ul style="list-style-type: none"> <li>▪ Train workers, safety footwear worn by staff</li> <li>▪ Inspect and repair/replace damaged shelves</li> </ul>
Frequently lifting and carrying products	<ul style="list-style-type: none"> <li>▪ Back injuries, overuse injuries of the arms and shoulders</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide workers with carts, dollies, or hand trucks</li> </ul>
Cleaning floors, washrooms, public areas	<ul style="list-style-type: none"> <li>▪ Working with unknown chemicals</li> <li>▪ Chemicals contacting the skin, eyes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Have safe use information [Material Safety Data Sheet (MSDS)] about each cleaning solution available at the workplace</li> <li>▪ If necessary, have gloves and eyewear available for workers</li> <li>▪ Workers will be trained in WHMIS</li> </ul>
Restocking storage rooms, moving around the workplace	<ul style="list-style-type: none"> <li>▪ Slipping and tripping</li> </ul>	<ul style="list-style-type: none"> <li>▪ Remove clutter and waste materials from walking areas</li> <li>▪ Clean up spills that can make the floor slippery for walking</li> </ul>
Working alone	<ul style="list-style-type: none"> <li>▪ Not having anyone to help in case of an emergency</li> </ul>	<ul style="list-style-type: none"> <li>▪ Employer will provide a telephone with which to contact the employer or emergency services</li> </ul>
Using electrically powered equipment	<ul style="list-style-type: none"> <li>▪ Unsafe operation by worker</li> <li>▪ Damaged cord or broken ground pin</li> </ul>	<ul style="list-style-type: none"> <li>▪ Train worker and closely supervise until competent</li> <li>▪ Repair cords, inspect all equipment for damage</li> </ul>

		Date prepared:
Task	Hazards	Plans to eliminate or control the hazards
Working in walk-in freezer	<ul style="list-style-type: none"> <li>▪ Getting locked inside</li> <li>▪ Getting cold</li> </ul>	<ul style="list-style-type: none"> <li>▪ Check that door handle works perfectly before entering</li> <li>▪ Ensure that workers wear proper gloves, apron, other clothing; limit time worked inside</li> </ul>
Operating forklift truck	<ul style="list-style-type: none"> <li>▪ Unsafe operation by worker</li> <li>▪ Forklift doesn't function properly</li> </ul>	<ul style="list-style-type: none"> <li>▪ Train worker and closely supervise until competent</li> <li>▪ Maintain the forklift according to the manufacturer's instructions</li> </ul>
Collecting shopping carts in the parking lot	<ul style="list-style-type: none"> <li>▪ Being struck by a motor vehicle</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workers must wear high visibility vest</li> </ul>
Working around equipment with rotating parts	<ul style="list-style-type: none"> <li>▪ Long hair and loose clothing getting caught in the rotating parts</li> <li>▪ Fingers, hands or arms getting entangled in the rotating parts</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workers should confine their hair and wear clothing that fits closely to the body</li> <li>▪ Rotating parts should be enclosed by guards provided by the manufacturer</li> </ul>
Meat-cutting operations	<ul style="list-style-type: none"> <li>▪ Cuts</li> <li>▪ Heavy items falling on the feet</li> <li>▪ Foreign objects in the eyes</li> </ul>	<ul style="list-style-type: none"> <li>▪ Workers could wear chain mail gloves, knives could be sharper</li> <li>▪ Workers should wear shoes/boots with protective toe caps</li> <li>▪ Workers may need to wear protective eyewear</li> </ul>

		Date prepared:
Task	Hazards	Plans to eliminate or control the hazards
Cashiers at check-out	<ul style="list-style-type: none"> <li>▪ Cashiers experiencing leg, back and arm pain</li> <li>▪ Chance of debilitating musculoskeletal injuries</li> </ul>	<ul style="list-style-type: none"> <li>▪ Install anti-fatigue matting at each check-out area</li> <li>▪ Provide sit/stand work stools</li> <li>▪ Rotate cashiers to other jobs in the store so that they can perform other duties</li> <li>▪ Provide cashiers with more frequent, shorter breaks</li> </ul>
Frequently lifting and carrying products	<ul style="list-style-type: none"> <li>▪ Back injuries, overuse injuries of the arms and shoulders</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide workers with carts, dollies, or hand trucks</li> </ul>
Other		
Other		
Other		

## Field level hazard assessment

At work locations where the activities and conditions change frequently e.g. construction sites, road building activities, brush control activities, outdoor work activities affected by weather conditions, etc., employers and workers often rely on field level hazard assessments that are done on-the-spot. This form of hazard assessment is done at the beginning of a work day or when a new job is started.

Figure 2.3 shows a typical field level hazard assessment form used (courtesy of the Construction Owners Association of Alberta [COAA]). Figure 2.4 serves as an example of how the form could be filled out for a business involved in the delivery of building supply materials to a work site.

## Safe work permits

A safe work permit (see Figure 2.5) can also function as a site-specific, task-specific hazard assessment form. All hazards relevant to the task being performed, and hazards relevant to the work area in which the work is being performed, must be identified on the work permit. Because all potential hazards can rarely be anticipated when the work permit is printed, the work permit should include a blank area where a worker can include “other” hazards that need to be eliminated or controlled.

## Checklists

Checklists are a popular tool often used when performing hazard assessments. A checklist serves as a memory cue, directing the person or team performing the assessment to look at specific hazards. On the negative side, checklists are sometimes too easy. An assessor may simply check off each box without actually considering each of the listed hazards and determining realistic ways of eliminating or controlling the hazards.

The notes and comments prepared by the assessor need to be as specific as possible, especially when referring to a particular hazard. If a guard has been removed from a machine, the exact machine must be identified so that there is no confusion about what must be done to which machine.

Because all potential hazards can rarely be anticipated when the checklist is printed, the checklist should include a blank area where a worker can include “other” hazards that need to be eliminated or controlled.



Figure 2.3 Example of field level hazard assessment form

<b>FIELD LEVEL HAZARD ASSESSMENT</b>	Company Name: _____	
Work to be done: _____	Date: _____	
Task location: _____	Emergency meeting location: _____	Permit Job #: _____

**Identify and Prioritize the task and hazards below, then identify the plans to eliminate/control the hazards**

Tasks	Hazards	Plans to Eliminate/Control
Require Gloves to be Removed    Yes <input type="checkbox"/> No <input type="checkbox"/>	Warning ribbon needed?    Yes <input type="checkbox"/> No <input type="checkbox"/>	
Is the worker working alone? Yes <input type="checkbox"/> No <input type="checkbox"/>	If Yes, explain _____	
<b>Job Completion</b>		
Are all Permit(s) closed out?    Yes <input type="checkbox"/> No <input type="checkbox"/>	Are there Hazards remaining:    Yes <input type="checkbox"/> No <input type="checkbox"/> (if Yes, explain)	
Was the area cleaned up at end of job/shift?    Yes <input type="checkbox"/> No <input type="checkbox"/>		
Were there any incident/injuries? Yes <input type="checkbox"/> No <input type="checkbox"/>	If Yes, explain _____	

Please print and sign below (all members of the crew) prior to commencing work and initial when task is completed or at the end of the shift

Worker Name and Signature (below)

Foreperson's Name & Signature: \_\_\_\_\_  
 (sign upon reviewing completed card)

\_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

**All Names and Signatures should be legible**

Reviewed by Name & Signature: \_\_\_\_\_

Figure 2.4 Example of completed field level hazard assessment form

<b>FIELD LEVEL HAZARD ASSESSMENT</b>		Company Name: <i>Tim's Building Supply Company</i>
Work to be done: <i>Deliver new doors to home</i>		Date: <i>date assessment completed</i>
Task location: <i>24 Foxglove Avenue</i>	Emergency meeting location: <i>front of house</i>	Permit Job #: <i>Order 245</i>

**Identify and Prioritize the task and hazards below, then identify the plans to eliminate/control the hazards**

Tasks	Hazards	Plans to Eliminate/Control
<i>Deliver new doors to main door of house</i>	<i>1. getting from sidewalk to house – no walkway</i>	<ul style="list-style-type: none"> <li>▪ <i>Clear route or ask for wooden walkway</i></li> </ul>
	<i>2. getting up ramp – ramp made of scrap wood, doesn't have any cross braces</i>	<ul style="list-style-type: none"> <li>▪ <i>Ask framers to widen ramp and add cross braces</i></li> </ul>
	<i>3. possible opening in floor</i>	<ul style="list-style-type: none"> <li>▪ <i>Make sure that openings are covered or guarded</i></li> </ul>
	<i>4. trench in yard</i>	<ul style="list-style-type: none"> <li>▪ <i>Make sure that route to the house avoids going near the trench</i></li> </ul>
		<i>If site crew unwilling to help, call supervisor for help</i>
Require Gloves to be Removed    Yes <input type="checkbox"/> No <input type="checkbox"/> <i>NA</i>	Warning ribbon needed?    Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> <i>Beside trench</i>	
Is the worker working alone? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	If Yes, explain	
<b>Job Completion</b>		
Are all Permit(s) closed out?    Yes <input type="checkbox"/> No <input type="checkbox"/> <i>NA</i>	Are there Hazards remaining:    Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (if Yes, explain)	
Was the area cleaned up at end of job/shift?    Yes <input type="checkbox"/> No <input type="checkbox"/> <i>NA</i>		
Were there any incident/injuries? Yes <input type="checkbox"/> No <input type="checkbox"/>	If Yes, explain	

Please print and sign below (all members of the crew) prior to commencing work and initial when task is completed or at the end of the shift

Worker Name and Signature (below)

Foreperson's Name & Signature: *Lyle Moffat*  
(sign upon reviewing completed card)

*Corona Richards*

All Names and Signatures should be legible    Reviewed by Name & Signature: *Lyle Moffat*

Figure 2.5 Example of safe work permit

<b>SAFE WORK PERMIT</b>		Work Order No. _____							
Persons issuing or receiving plant Safe Work Permits must understand the procedures for issuing and receiving permits and must fully realize their responsibilities in this phase of plant operations.									
Date Issued:	Time Issued:	GOOD ONLY FOR DATE OF ISSUE							
Department:	Building:								
Description of Work To Be Done:									
Department or Contractor Doing Work:									
Person in Charge of Work:									
(Note: In the following, check Yes, No, or Not Applicable [N/A])		YES	NO	N/A					
1. Have process materials (liquid, gas) been removed from the equipment?									
2. Has the equipment been cleaned by:									
(a) Steaming?									
(b) Flushing with water?									
(c) Inert gas purging?									
(d) Air ventilation?									
3. Has the necessary equipment been adequately protected by:									
(a) Blanking/Blinding off?									
(b) Double Block and Bleed?									
(c) Disconnecting?									
(d) Draining and venting?									
4. Have all electrical switches been locked out?									
5. Is there an adequate supply of fresh air?									
6. Is it permissible to use:									
(a) Open flame/welding equipment?									
(b) Electrical equipment/tools?									
(c) Gasoline, propane or diesel driven equipment?									
7. Can sparks ignite material around or below this level?									
8. What fire protection is necessary?									
(a) Fire extinguisher Dry Chem <input type="checkbox"/> CO <sub>2</sub> <input type="checkbox"/> H <sub>2</sub> O <input type="checkbox"/>									
(b) Firewatch									
(c) Other (Specify)									
9. Have precautions been taken against radioactivity?									
10. Do atmospheric conditions and wind direction permit safe work near vents?									
11. Does this work involve asbestos?									
12. Has the confined space or vessel been prepared for safe entry?									
13. Is a gas test necessary?									
Frequency: Per Shift <input type="checkbox"/> Per Hour <input type="checkbox"/> Continuous <input type="checkbox"/> Type of Gas Testing Equipment		MX-241 <input type="checkbox"/> Gas Techtor <input type="checkbox"/>							
Time	Explo Gas %	O <sub>2</sub> %	CO ppm	CO <sub>2</sub> %	H <sub>2</sub> S ppm	NH <sub>3</sub> ppm	SO <sub>2</sub> ppm	Other (Specify)	Gas Tester's Signature
14. Identify materials normally in equipment									
(a) Toxic:		(b) Flammable:		(c) Corrosive:		(d) Other (describe):			
15. What personal protective equipment is required? (Specify)									
(a) Type of eye protection:									
(b) Type of protective clothing:									
(c) Type of respiratory protection:									
(d) Type of ear protection:									
Other (Specify):									
Other hazards or special instructions:									
<b>THE PERMIT RECEIVER ACKNOWLEDGES THAT HE WILL INFORM ALL PERSONNEL WORKING UNDER THE AUTHORITY OF THIS PERMIT OF ALL INFORMATION CONTAINED HEREIN.</b>									
Permit issued by:			Job Title:			Time:			
Permit received by:			Job Title:			Time:			
Work Completed by:			Job Title:			Time:			
Process Completed by:			Job Title:			Time:			
The following person(s) acknowledges that this job is in progress during shift change and has checked both the permit and the nature of the job and understands the precautions to be followed:									
Supervisor Signature:			Time:			Shift:			
Supervisor Signature:			Time:			Shift:			
<b>DISPLAY AT WORKPLACE – MAINTENANCE COPY</b>						Permit NO: _____			

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### Subsection 7(3) Date of hazard assessment

The hazard assessment report must be dated to confirm when it was completed and how current it is.

### Subsection 7(4) Assessment intervals

This subsection requires that after the initial assessment, further assessments are performed as follows:

- (a) *At reasonably practicable intervals to prevent the development of unsafe and unhealthy working conditions.*

Hazard assessments should be performed periodically, even when nothing has changed. Doing so confirms that workers are continuing to follow correct procedures and that equipment is in proper working condition. Assessments should be done at intervals that anticipate problems before the safety and health of workers is affected.

- (b) *When a new work process is introduced.*

A new work process may involve the use of new materials, chemicals, equipment, etc. with which workers are unfamiliar. A change of work process may introduce new and unexpected hazards.

- (c) *When a work process or operation changes.*

The introduction of a new process, operation or piece of equipment might influence the results of a previous hazard assessment or make it meaningless. Adding an automatic feeder to a table saw for example, eliminates worker exposure to the hazard of the spinning blade, affecting the outcome of the hazard assessment.

- (d) *Before the construction of significant additions or alterations to the work site.*

Assessing hazards in this case tries to anticipate potential problems and prevent those problems from being built into the work site. It is often far less expensive to eliminate problems at the design stage than to modify the work site later to eliminate or control a hazard.

Once new controls are implemented, the job or work should be reviewed to make sure that the hazard(s) has been eliminated or controlled. This is a check to make sure that the controls work as they should and that the controls do not create additional new hazards.

In the case of an employer whose operations change very little over time, the findings of the initial hazard assessment may not change for an extended period of time. Nonetheless, as stated in (a) above, a re-assessment should be performed at some time, even if it is after an extended period of time.

### Subsection 7(5) Prime contractor to inform

This subsection places a new responsibility on the prime contractor to inform employers of any “existing or potential work site hazards” that may affect the workers of those employers. This requirement *does not* replace the employer’s present responsibility under this Part to conduct a hazard assessment. This new prime contractor responsibility is intended to have employers informed of hazards present at other locations at a work site that may have an impact on the employers’ operations.

Consider the following examples:

#### Blasting operations

At a large, widely dispersed work site with many employers, blasting operations are being conducted at the northeast corner of the site. Although few employers are directly affected by the blasting activities, the prime contractor must inform all employers at the work site that the blasting operations are taking place and when. This avoids the potential for confusion should workers hear and feel the shock wave.

#### Critical lift

Multiple cranes are being used to transport a large piece of equipment through an expansive work site and install the equipment at a central location within the site. Many employers may need to alter their work plans during the transportation and installation of the equipment. The prime contractor is responsible for informing employers of the hazards associated with this work.

The prime contractor can use any effective method to fulfill this responsibility. The following are examples of how this could be done:

- (a) posting a written announcement of existing or potential work site hazards at a common entry or gathering location at the work site;
- (b) posting a white board at such a location with this information;
- (c) regular meetings with employers to update them with relevant information; and
- (d) provide employers with electronic updates e.g. e-mail, text messaging, etc. as necessary.

It is expected that employers will pass along this information to their workers.

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## Section 8 Worker participation

### Subsection 8(1) Worker involvement

The purpose of this requirement is to encourage employers to involve workers in hazard assessment, elimination, and control activities. Workers are often very knowledgeable about the tasks or processes being assessed, and can be directly affected by the hazard elimination and control activities. Workers often have more insight into a task or process than persons who only observe the completed work.

To demonstrate compliance with this requirement, the employer should be able to indicate which workers were meaningfully involved and to what extent. Workers should be able to confirm their involvement in the assessment, elimination, and control activities.

Involving workers can

- (a) increase the number of persons available to perform assessments, spreading out the work into manageable pieces,
- (b) teach them how to recognize hazards, increasing the likelihood that the hazards will be quickly corrected, and
- (c) increase their awareness of, and involvement in, health and safety issues at the work site.

To be successful, workers must know ahead of time what is expected of them. They should be given the training they will need to do the job effectively.

### Subsection 8(2) Informing workers

Workers affected by the hazards identified in the hazard assessment report need to know about those hazards and the methods that will be used to eliminate or control the hazards. These workers have the greatest potential to be affected by the hazards. They need to know if corrective measures will require them to do something.

The findings of the hazard assessment report can be communicated to workers by any effective method. This may include briefing workers on a one-to-one basis, discussing the results at safety meetings, or posting the results in a location accessible to workers.

To determine if the results of the hazard assessment have been communicated to those workers affected by its findings, an OHS officer may approach workers and ask them whether they are aware of an assessment having been performed and how its results have affected their work, and work in general at the work site. The employer may be asked to describe how workers were informed of the findings and

recommendations of the hazard assessment report, including when and by what means.

## Section 9 Hazard elimination and control

### Subsection 9(1) Eliminate or control

Whenever possible, hazards should be eliminated or controlled at their source – as close to where the problem is created as possible – using engineering solutions. If this is not possible, controls should be placed between the source and the workers. The closer a control is to the source of the hazard the better. If this is not possible, hazards must be controlled at the level of the worker.

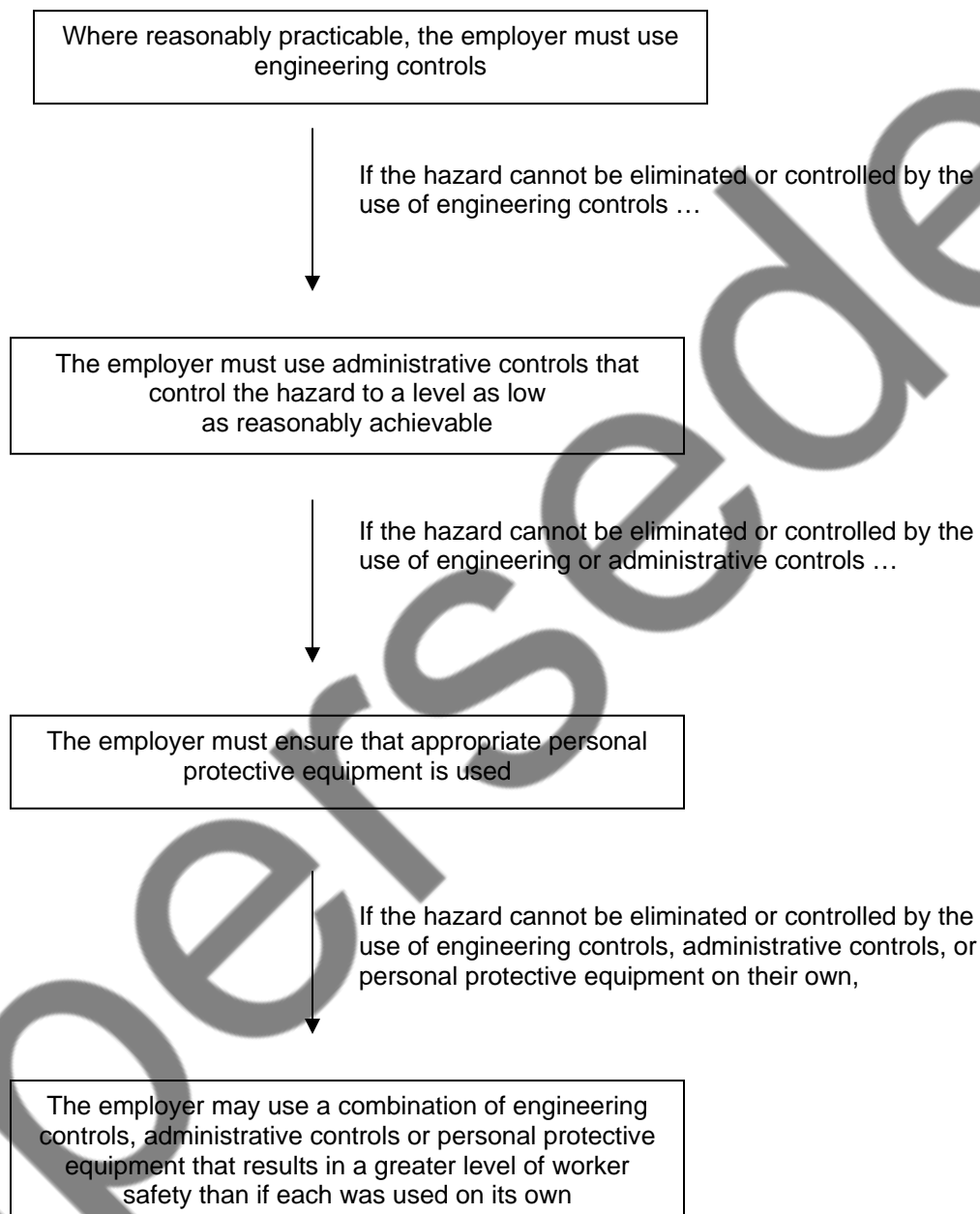
Administrative controls and personal protective equipment (PPE) control hazards at the level of the worker. These control methods reduce the likelihood and severity of worker injury but do not eliminate the hazard. A combination of several hazard control approaches may be necessary in some situations (see Figure 2.6).

Whatever control method is used, it should attack the source of the hazard, not its outward signs e.g. the noise, vibration, fumes, exhaust, etc. that it produces. For example, it is better to replace, redesign, isolate or quiet a noisy machine than it is to provide workers with hearing protection.

In complying with this subsection, the employer should be able to describe which hazards identified by the hazard assessment have been eliminated or controlled. For remaining hazards, particularly those being controlled by the use of personal protective equipment, the employer should be able to explain why those hazards could not practicably be eliminated.

For compliance purposes, the employer should be able to justify the appropriateness of the hazard controls used. All reasonably practicable steps should have been taken to first eliminate the hazard. Particular attention will be placed on those hazards that the employer has chosen to control through the use of administrative procedures and, in particular, personal protective equipment.

Figure 2.6 Hazard elimination or control flow chart





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## Subsection 9(2) Engineering controls

Engineering controls provide the highest degree of worker protection because they eliminate or control the hazard at its source. Engineering controls are the preferred method of eliminating or controlling hazards.

Engineering controls include the following:

*Elimination* – getting rid of a hazardous job, tool, process, machine or substance may be the best way of protecting workers. Examples include:

- using material handling equipment rather than have workers lift, lower, carry, etc. materials manually
- eliminating the need to elevate persons or objects above ground level

*Substitution* – if elimination is not practical, try substituting or replacing one substance or process with another. Examples include:

- substituting a safer substance for a more hazardous one
- replacing hazardous operations with less hazardous operations

*Redesign* – hazards can sometimes be “engineered out” through redesign of the work site, workstations, work processes and jobs. Examples include:

- providing fail-safe interlocks on equipment, doors, valves, etc.
- installing guardrails around elevated work areas
- providing non-slip working surfaces
- controlling traffic to avoid collisions

*Isolation* – hazards can sometimes be isolated through containment or enclosure. Examples include:

- negative-pressure fume hoods in laboratory settings
- sound reducing enclosures for noisy equipment

*Automation* – some processes can be automated or mechanized. Examples include:

- spot welding by industrial robots
- assembly line operations that require repetitive manual handling by workers.

## Subsection 9(3) Administrative controls

If engineering controls cannot eliminate or control a hazard, administrative controls can be used to control the hazard to a level that is as low as reasonably achievable. Administrative controls are less effective than engineering controls since they do not eliminate the hazards. Examples include:

- safe work practices, job procedures, policies, rules – safe work procedures describe how to correctly perform a job from start to finish
- work/rest schedules to reduce worker exposure to hazardous substances or conditions

- limiting hours of work
- scheduling hazardous work during times when exposure of other workers is limited
- wet methods as opposed to dry sanding or sweeping

#### Subsection 9(4) Personal protective equipment

As a last resort, workers may need to use personal protective equipment (PPE) to reduce the potentially harmful effects of exposure to a known hazard. PPE is much less effective than engineering controls since it does not eliminate the hazards.

PPE must be used properly and consistently to be effective. Awkward or bulky PPE may prevent a worker from working safely. In some cases, PPE can increase the likelihood of hazards such as heat stress and tripping and falling.

Examples of PPE commonly used include

- safety eyewear, hard hats and safety boots
- hearing protection if workers are exposed to noise that exceeds allowable levels
- respiratory protective equipment to protect the lungs against harmful dusts and vapours.

#### Subsection 9(5) Combination of control methods

The control of some hazards requires the combined use of all three control methods to reduce the hazard to the lowest level practicable or achievable. Employers are not restricted to a single approach if using a combination achieves a greater level of worker safety than if only one approach was used.

### Section 10 Emergency control of hazard

#### Subsection 10(1) Competent workers, minimize number

This section applies in situations where emergency action is required to control or eliminate a hazard that is dangerous to the safety or health of workers. Only those workers competent in correcting the hazardous condition may be exposed to the hazard. The number of these exposed workers must be kept to a minimum – as few as is necessary to correct the condition. The employer must make every possible effort to control the hazard while this is being done.

As an example, a piping system in a building fails, releasing a toxic gas. Twelve workers are at the work site, six of whom are trained in the use of self-contained breathing apparatus and are capable of initiating a repair or shutdown. Of these six competent workers, only three are required to actually perform the repair or shutdown. As a result, only three of the 12 workers are allowed to enter the building and be exposed to the hazard. Prior to and during the entry, every possible effort must be made to reduce the flow or production of gas before it reaches the building, and to limit exposure to other workers in the vicinity of the building.

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## Subsection 10(2) Emergency response

This subsection reflects the practical reality that during an emergency response, it is impractical (and may be impossible) to prepare a written hazard assessment report. The subsection waives an employer's obligation to comply with subsections 7(2) and 7(3) during the period that emergency action is required.

## Section 11 Health and safety plan

Written health and safety plans (sometimes referred to as health and safety programs) are only mandatory for those employers and work sites required by the order of a Director of Inspection. A Director of Inspection is a member of the staff of Alberta Employment and Immigration, appointed by the Minister under section 5 of the *OHS Act*. For all other work sites in Alberta, the preparation of a health and safety plan is voluntary. Alberta Employment and Immigration encourages all employers to voluntarily participate in the Ministry's *Partnerships* program and establish an effective health and safety management system for their work sites.

Work sites throughout the province are routinely inspected or monitored for compliance with OHS legislation by OHS officers. If an employer fails to adequately address health and safety concerns, an officer may recommend to a Director that an order under this section be written, requiring the employer to prepare a written health and safety plan.

The following criteria are used by officers when recommending if an employer should be required to have a health and safety plan:

- (a) the employer repeatedly violates the OHS legislation;
- (b) the employer fails to comply with orders to correct safety hazards;
- (c) workers repeatedly complain about substantive health and safety concerns;
- (d) the employer's lost-time injury claim rate exceeds the average for the employer's industry group; and
- (e) there is evidence of poor communication between the employer and workers on health and safety matters.

Ordering the employer to have a health and safety plan is a way of improving communication between the employer and workers. It is also intended to encourage an awareness of health and safety at the work site.

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For more information



[www.coaa.ab.ca/BESTPRACTICES/Safety/FieldLevelRiskAssessment/tabid/74/Default.aspx](http://www.coaa.ab.ca/BESTPRACTICES/Safety/FieldLevelRiskAssessment/tabid/74/Default.aspx)

Field Level Risk Assessment – Construction Owners Association of Alberta



[www.ccohs.ca/oshanswers/prevention/](http://www.ccohs.ca/oshanswers/prevention/)

Prevention and Control of Hazards – Canadian Centre for Occupational Health and Safety



[http://employment.alberta.ca/documents/WHS/WHS-PS\\_building.pdf](http://employment.alberta.ca/documents/WHS/WHS-PS_building.pdf)

Building an Effective Health and Safety Management System



[www.hse.gov.uk/pubns/indg163.pdf](http://www.hse.gov.uk/pubns/indg163.pdf)

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