OHC TRAINING LEVEL 2

MISSION: ZERO

Incident Investigations Guide

WorkSafe™ SASKATCHEWAN

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Please note

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Glossary

Accident: See incident.

Contractor: A person who, or partnership or group of persons that, directs the activities of one or more employers or self-employed persons, or retains an employer or self-employed person to perform work at a place of employment, and knows or ought reasonably know the provisions of the SEA and regulations applying to the workplace at the time of retaining the person.

Controlled product: A controlled product within the meaning of the Hazardous Products Act (Canada).

Direct cause: What directly led to the incident, such as an unsafe work practice or an equipment failure.

Dangerous occurrence: Occurrences explained in regulation 9.

Due diligence: A person has a legal duty to take every precaution reasonable given the circumstances to avoid both harm and an offence against the law. It is a very high standard to take reasonable care. In context of the OHS legislation, the following principles encompass due diligence:

> **General duties:** The SEA imposes a duty on everyone in the workplace to take reasonable care of their health and safety and that of others, to the degree that they have the authority and ability to do so. This general duty is in addition to and goes far beyond complying with the law.
>
> **Regulatory compliance:** If someone is charged with contravening the legislation, they cannot defend themselves successfully by claiming that they did not intend to break the law or comply. To defend themselves adequately, a person must be able to show that they took every reasonable practicable action to ensure compliance.
>
> **Reasonably practicable:** A person must show that they took every possible precaution, unless they can show the benefits of taking the precaution are greatly exceeded by the cost in time, trouble and money. The greater the risk, the greater the health and safety measures required.
>
> **Proactive:** Due diligence requires a proactive and systematic approach to health and safety. Implement a health and safety program that:
>
> - Identifies hazards;
> - Assess the risks associated with those hazards;
> - Implements measures to eliminate or minimize those risks; and
> - Monitors each part of the program to ensure it is adequate and efficient.

Employers must develop and implement this plan in consultation with their workers. Workers must comply with the program to the extent that they have the knowledge, authority and ability to do so.

Employer: A person, firm, association or body that has one or more workers in connection with the operation of a place of employment.

Employees: Managers, supervisors and workers.

Equipment: Any mechanical or non-mechanical article or device, including any machine, tool, appliance, apparatus, implement, service or utility. It does not include the personal property owned by an individual unless that property is used in the occupation.

Expose: Harmful contact through inhalation, ingestion or absorption through the skin.

Hazard: Any activity, situation or substance that could harm a worker. Occupational hazards are divided into two broad categories: health hazards and safety hazards. Generally, health hazards cause occupation illnesses, such as noise induced hearing loss (NIHL). Safety hazards cause immediate physical harm, such as cuts and broken bones. Hazards exist in all workplaces.

Hazardous: Likely to cause harm or injury in certain circumstances.

Incident: Any unplanned, unwanted event that may or may not cause injury, illness or damage. The terms accident and incident are often used interchangeably, but the preferred term is incident. It is Mission: Zero's campaign that all incidents are predictable and as such preventable. Therefore, there is no such thing as accidents, only incidents.

Indirect causes: The working conditions that set the stage for an incident, such as inadequate training or detailed procedures.

Infectious material or organism: An infectious material or organism set out in Table 14 or the Appendix to the regulations.

Inspection: An examination of a workplace, selected work area or particular hazards, machinery, tools, equipment and work practices. Findings are compared to applicable standards and best practices.

Occupational health and safety representative: (Representative) Occupational health and safety representative designated pursuant to SEA 3-24.

Occupational health committee: (OHC or committee) Occupational health committee established pursuant to SEA 3-22, 3-23 or the regulations.

Occupational health officer: (OHO) A person appointed as an occupational health officer pursuant to SEA 3-6.

Owner: A trustee, receiver, mortgagee in possession, tenant, lessee or occupier of any lands or premises used or to be used as a place of employer. An person who acts as an agent or delegate for or on behalf of one of these people is considered an owner.

Plant: Any premises, site, land, mine, water, structure, fixture or equipment employed or used in the carrying on of an occupation.

Regulations: The Occupational Health and Safety Regulations, 1996 (regulations or regs).

Root causes: The fundamental flaws that created the working conditions leading to an incident (like inadequate training) that may indicate defects in the employer's health and safety management system.

SDS: Safety data sheet.

Saskatchewan Employment Act: The Saskatchewan Employment Act (SEA).

Self-employed person: A person who is engaged in an occupation but is not in the service of an employer. Examples: Self-employed trades people and consultants under contract.

Supervisor: An individual who is authorized by an employer to oversee or direct the work of workers.

Supplier: A person who supplies, sells, offers or exposes for sale, leases, distributes or installs any plant, biological or chemical substance used at the place of employment.

Train: To give information and explanation to a worker in a particular subject matter and require a practical demonstration that the worker has acquired knowledge or skill related to the subject-matter.

WCB: The Saskatchewan Workers' Compensation Board.

Introduction

An incident is any unplanned event that causes, or may cause, injury or damage. Incidents are often a warning that the workplace's health and safety system isn't working properly.

Experience suggests that effective incident investigations prevent recurrences and make the workplace safer and healthier. That is why The Saskatchewan Employment Act and The Occupational Health and Safety Regulations require that certain incidents and dangerous occurrences be investigated and that the report contain specific information. Leading employers investigate any incident that causes, or could have caused, injury or loss.

Worker involvement helps make most investigations more effective. The legislation specifies that the workplace's OHC or representative must be involved.

Purpose of this guide

This guide is not a detailed description of the legislation. This guide is for:

- OHC co-chairpersons and members;
- Worker occupational health and safety representatives;
- Employers, managers and supervisors; and
- Incident investigators (i.e., health and safety professionals).

The guide helps you to investigate workplace incidents, find the causes and prevent a recurrence. You will learn to:

- Collect evidence;
- Analyze the evidence;
- Write the report; and
- Take action.

OHCs can use these principles and procedures to investigate other issues, such as refusals to work.

The role of the employer

Ultimately, the employer is responsible for the effectiveness of incident investigations. To have effective incident investigations, the employer can integrate them into the organization's health and safety system (emergency planning, etc.) and provide the investigation team with appropriate training and resources.

Incident investigations should not be blame-fixing exercises. Blaming the worker, supervisor or

employer won't produce results. Each incident usually has several contributing factors, not all of which are immediately obvious. Investigators must look for the deeper causes and simply not record events. These deeper causes must be corrected to ensure the effectiveness of the organization's health and safety system.

The role of investigations conducted by OHCs and representatives

Investigations conducted by OHC members or the representative and the employer will:

- Find and help correct root causes.
- Check the employer's health and safety management systems and suggest improvements (where required).
- Not assess blame.

The OHC or representative has no authority to implement corrective action. That is the employer's job. The role of the OHC or representative is to advise and recommend.

The employer may ask a specialist for help in the investigation. Examples: Insurance companies, health and safety professionals, technical specialists. Where this is done, the employer is expected to involve the OHC or representative, provide them with a copy of related reports and discuss their concerns. The OHC, or the representative, and employer, may conduct additional investigations.

How to use this guide

Review the table of contents and glossary. Identify interesting material. Skim the headings of each chapter to find what you are looking for. Refer to applicable legislation as required. Go over the material until you are satisfied that you understand it. Adapt it to your needs.

Part I covers what employers, OHCs and representatives must do to meet the requirements of the legislation.

Part II explains advanced techniques that can help you comply. Use as much of the information as you need to conduct a meaningful investigation. Employers and health and safety specialists can use this section to improve their investigations. OHCs and representatives can use it to check the effectiveness of the employer's investigation system.

Use the Appendix for resource information.

Sometimes you wear two hats

Workers and managers or supervisors sit on OHCs. In some organizations, the employer or owner is the employer co-chairperson. Members have many roles. They work together to identify and help resolve health and safety concerns. They identify defects in such things as equipment, tools, machinery, work practices and work area design. They discuss possible corrective action and make recommendations to the employer.

However, the managers on the OHC are often responsible for taking corrective action recommended by the committee. Worker OHC members may actually implement the recommendations.

Read this book with these points in mind. Consider the hats you wear. Think about how you are going to make the material here work for you. What is practical? What is realistic? What ideas can you use to make your workplace healthier and safer?

Notes

Part I:
Incidents and dangerous occurrences investigated by OHCs and representatives

- What incidents and dangerous occurrences must be reported to OHS Division?
- What must be in the notices sent to OHS Division?
- What must be investigated, reported and by whom?
- What else must be investigated?
- What information must be in regulations 29 and 31 reports?

Introduction

Part I explains how to comply with regulations 29, 30 and 31. Part II describes advanced investigation techniques that may help you to comply.

The employer is responsible for correcting problems that the OHC or representative identify. When an OHC or representative reports an unsafe condition or a contravention of the legislation, the employer must:

- Protect the health and safety of workers at risk until the unsafe condition or hazard is corrected;
- Correct the problem; and
- Inform workers and the OHC or representative about the taken or planned corrective action.

If the employer does not agree with recommendations made by the OHC or representative, the employer must give the OHC or representative a written reason for not resolving the problem or addressing the concern. The OHC or representative may contact OHS Division for assistance and advice (SEA 3-29 and regulation 28).

Experience suggests weaknesses in the workplace's health and safety management system are the underlying or root causes for many incidents. That is why it is as important to examine and correct system defects as it is to control hazards.

What incidents and dangerous occurrences must be reported to OHS Division?

Regulation 8, Accidents causing serious bodily injury

(1) An employer or contractor shall give notice to the division as soon as is reasonably possible of every accident at a place of employment that:

(a) causes or may cause the death of a workers; or

(b) will require a worker to be admitted to a hospital as an in-patient for a period of 72 hours or more.

Regulation 8 deals only with incidents that cause injury. OHS Division recommends that employers, contractors and owners report any incident requiring a worker to receive emergency medical attention in a hospital if the employer:

Knows or believes that the incident will cause the worker to be hospitalized for 72 hours or more; or

Is not notified the day after the incident that the worker will be discharged from hospital before the 72 hour period is up.

Regulation 9, Dangerous occurrences

(1) In this section, "dangerous occurrence" means any occurrence that does not result in, but could have resulted in, a condition or circumstance set out in subsection 8(1), and includes:

(a) the structural failure or collapse of:

(i) a structure, scaffold, temporary falsework or concrete formwork; or

(ii) all or any part of an excavated shaft, tunnel, caisson, coffer dam, trench or excavation;

(b) the failure of a crane or hoist or the overturning of a crane or unit of powered mobile equipment;

(c) an accidental contact with an energized electrical conductor;

(d) the bursting of a grinding wheel;

(e) an uncontrolled spill or escape of a toxic, corrosive or explosive substance;

(f) a premature detonation or accidental detonation of explosives;

(g) the failure of an elevated or suspended platform; and

(h) the failure of an atmosphere-supplying respirator.

(2) An employer, contractor or owner shall give notice to the division as soon as is reasonably possible of any dangerous occurrence that takes place at a place of employment, whether or not a worker sustains injury.

Regulation 9 discusses incidents that could have hurt someone, but did not (near misses). Dangerous occurrences have the following characteristics:

- **They are incidents and not conditions.** Example: An overloaded crane is not a dangerous occurrence — it is a condition. However, the condition becomes a dangerous occurrence if the crane overturns.
- **They could have hurt someone if circumstances had been slightly different.** This means that the factors (i.e., forces, chemicals, biohazards, etc.) involved in an incident were powerful enough to cause serious harm, but for luck's sake, they didn't.
- **They are listed in regulation 9(1)(a-h).** Regulation 9 does not list every dangerous occurrence that must be reported; it only provides examples.

Examples of dangerous occurrences:

- An atmosphere-supplying respirator has not been maintained properly. A worker using it is nearly overcome by poison gas.
- A partially cut tree in a logging area is left standing. It falls while workers are out of the area. Workers could have been struck had they been working there.
- A partially completed masonry wall is blown over during the night. If the wall had collapsed during the day, workers would almost certainly have been injured.

Incidents do not need to be reported to OHS Division as dangerous occurrences if the employer can conclude that they posed no risk or occurred in an area where workers are never allowed or permitted to work in.

What must be in the notices sent to OHS Division?

Regulation 8, Accidents causing serious bodily injury

(2) The notice required by subsection (1) must include:

(a) the name of each injury or deceased worker;

(b) the name of the employer of each injured or deceased worker;

(c) the date, time and location of the accident;

(d) the circumstances related to the accident;

(e) the apparent injuries; and

(f) the name, telephone number and fax number of the employer or contractor or a person designated by the employer or contractor to be contacted for additional information.

(3) An employer or contractor shall provide each co-chairperson or the representative with a copy of the notice required by subsection (1).

Regulation 9, Dangerous occurrences

(3) A notice required by subsection (2) must include:

(a) the name of each employer, contractor and owner at the place of employment;

(b) the date, time and location of the dangerous occurrence;

(c) the circumstances related to the dangerous occurrence; and

(d) the name, telephone number and fax number of the employer, contractor or owner or a person designated by the employer, contractor or owner to be contacted for additional information.

(4) An employer, contractor or owner shall provide each co-chairperson or the representative with a copy of the notice required by subsection (2).

What must be investigated, reported and by whom?

Regulation 29, Investigation of certain accidents

(1) Subject to section 30, an employer shall ensure that every accident that causes or may cause the death of a worker or that requires a worker to be admitted to a hospital as an in-patient for the period of 24 hours or more is investigated as soon as is reasonably possible by:

(a) the co-chairpersons or their designates;

(b) the employer and the representative; or

(c) where there is no committee or representative, the employer.

(2) After the investigation of an accident, an employer, in consultation with the co-chairpersons or their designates, or with the representative, shall prepare a written report that includes:

(a) a description of the accident;

(b) any graphics, photographs or other evidence that may assist in determining the cause or causes of the accident;

(c) an explanation of the cause or causes of the accident;

(d) the immediate corrective action taken; and

(e) any long-term action that will be taken to prevent the occurrence of a similar accident or the reasons for not taking action.

Regulation 30, Prohibition re scene of accident

(1) Unless expressly authorized by statute or by subsection (2), no person shall, except for the purpose of saving life or relieving human suffering, interfere with, destroy, carry away or alter the position of any wreckage, article, document or thing at the scene of or connected with an accident causing a death until an officer has completed an investigation of the circumstances surrounding the accident.

(2) Where an accident causing a death occurs and an officer is not able to complete an investigation of the circumstances surrounding the accident, an officer may, unless prohibited by statute, grant permission to move the wreckage, articles and things at the scene or connected with the accident to any extent that may be necessary to allow the work to proceed, if:

(a) graphics, photographs or other evidence showing details at the scene of the accident are made before the officer grants permission; and

(b) the co-chairpersons of a committee or the representative for the place of employment at which the accident occurred or their designates have inspected the site of the accident and agreed that the wreckage, article or thing may be moved.

Regulation 31, Investigation of dangerous occurrences

(1) An employer, contractor or owner shall ensure that every dangerous occurrence described in subsection 9(1) is investigated as soon as is reasonably possible by:

(a) the co-chairpersons or their designates;

(b) the employer, contractor or owner and the representative; or

(c) where there is no committee or representative, the employer, contractor or owner.

(2) After the investigation of a dangerous occurrence, an employer, contractor or owner, in consultation with the co-chairpersons or their designates or with the representative, shall prepare a written report that includes:

(a) a description of the dangerous occurrence;

(b) any graphics, photographs or other evidence that may assist in determining the cause or causes of the dangerous occurrence;

(c) an explanation of the cause or causes of the dangerous occurrence;

(d) the immediate corrective action taken; and

(e) any long-term action that will be taken to prevent the occurrence of a similar dangerous occurrence or the reasons for not taking action.

What else must be investigated?

Exposures to infectious materials or organisms

Regulation 85 requires the employer to arrange for the investigation and documentation of work-related exposures to materials or organisms listed in Table 14 of the regulations (such as hepatitis and tetanus). This is part of a plan for hazard identification and risk assessment, management and communication for infectious material and organisms. The OHC must be consulted about the development and review of the plan.

The employer must provide the OHC with a summary of the investigation report, as required by regulation 32. The OHC may not access confidential medical information.

Exposures to listed substances or organisms

Regulation 311 requires the employer, in consultation with the OHC, to investigate exposures resulting from accumulations, spills or leaks of substances or organisms listed in tables 19 or 20 of the regulations.

These include very dangerous materials (e.g., asbestos and mustard gas — many are known or suspected carcinogens or reproductive hazards. The regulation states what to include in the investigation reports.

Potentially harmful injuries, illnesses and conditions

The employer should also develop a plan for the investigation of injuries, illnesses and conditions that do not require hospitalization. Examples: Chronic illnesses, musculoskeletal injuries and the effects of exposures to chemical, physical or biological substances.

What information must be in regulations 29 and 31 reports?

The report must provide the following information:

Describe the incident or dangerous occurrence

State what you know about the incident. If workers were injured, describe who was injured and how seriously. Describe:

- What happened immediately before the incident or dangerous occurrence (including factors that set the stage, such as work done on the previous shift);
- What happened during the incident or dangerous occurrence; and
- What happened immediately afterwards (including what happened during the emergency response).

Include any graphics, photographs or other evidence that may assist to determine causes

Graphics may include:

- Maps
- Drawings
- Sketches

Other evidence may include:

- Witness statements
- Equipment manuals, policies, work procedures, etc.
- Safety data sheets (SDSs)

Making maps, sketches and drawings

Use maps to get a birds-eye view of the incident scene, locate the positions of equipment, tools, debris, workers, etc. Make your maps, sketches and photographs as soon as you can after you obtain initial statements from witnesses at the site.

Taking photographs

If you use photographs, start with shots of the general scene. Then shoot each important piece of evidence from several different directions to provide detailed information. Move the camera, but not the item that you are photographing. Moving the item may complicate subsequent examinations by specialists.

Select a way of clearly indicating distance, direction and perspective in your shots. Example: Include rulers and direction indicators.

Using other evidence (such as witness statements)[1]

Witness interviews may be needed to find the causes of the incident and how to prevent a recurrence. The regulations do not require witnesses to be interviewed in every investigation. However, OHS Division recommends that interviews be conducted whenever they are needed to identify causes and suggest corrective action. Interviewers should be experienced. They may or may not be on the workplace's OHC.

State what immediate corrective action was taken

Identify what corrective action the employer took to control the immediate causes of the incident or dangerous occurrence and prevent a reoccurrence. Examples:

- Repair or replace defective tools, equipment or machinery
- Change a work procedure
- Increase supervision and training

State any long-term action that the employer will take to prevent a reoccurrence

Long-term action should correct the root cause. Examples:

- Eliminate a hazard
- Control a hazard at its source (such as by using engineering controls or redesigning equipment)
- Control a hazard along the path to the worker by using barriers, containment, better ventilation, etc.
- More frequent monitoring, inspections, maintenance, or other administrative actions

1 This section deals with witness interviews. See Part II for a detailed description of how to use documentary evidence, such as equipment manuals, policies, work procedures, SDSs, etc.

Conducting an investigation

To investigate an incident, dangerous occurrence or refusal:

- Find out what caused the incident (i.e., immediate events leading up to the incident).
- Find out what contributed to the incident (i.e., unsafe activities and conditions).
- Find out what root causes set the stage (i.e., defective safety policies, procedures or attitudes).
- Find ways to prevent a similar incident.

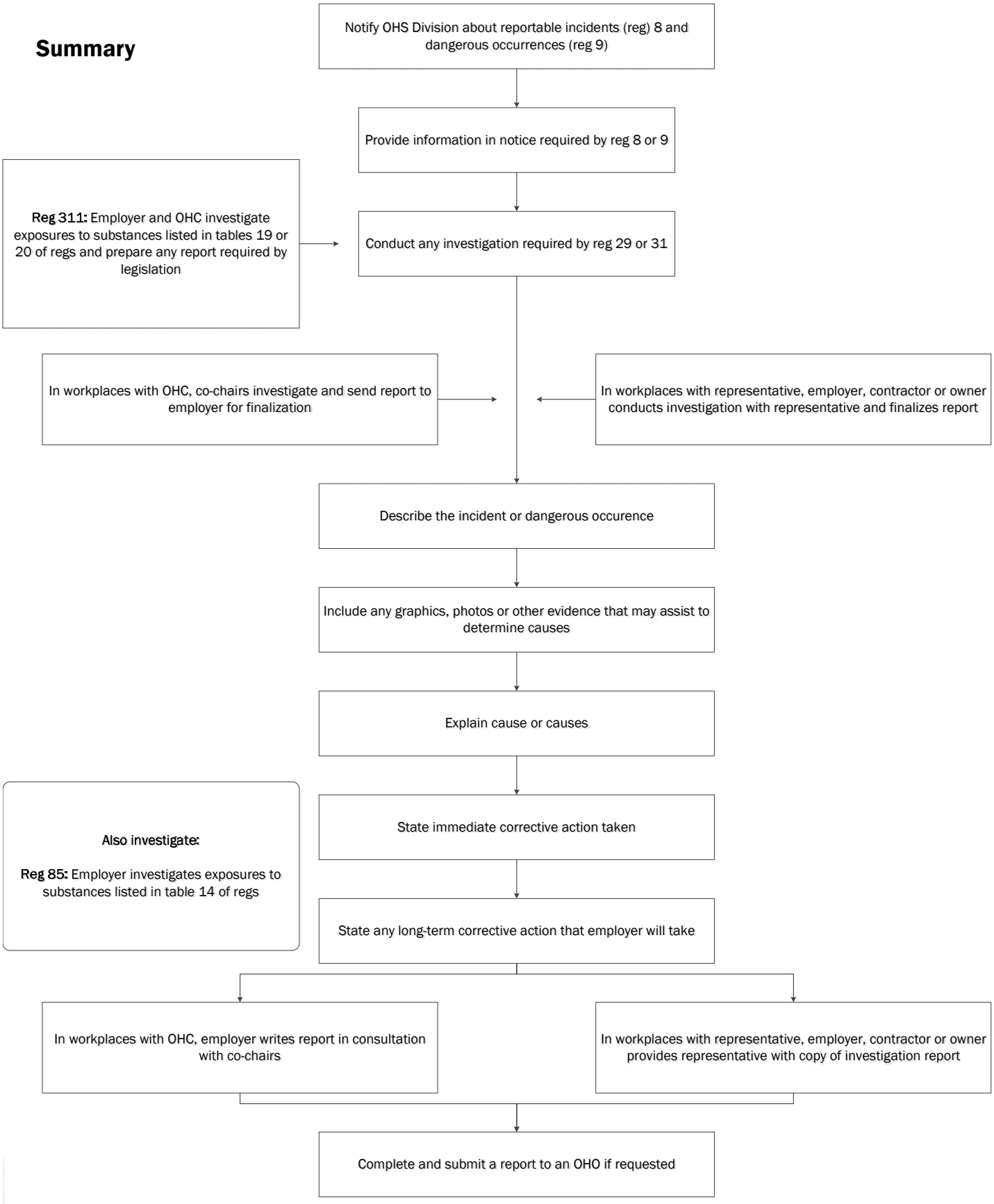
Don't disturb the evidence. If necessary, take photographs of the incident scene or make drawings. Interview anyone who saw the incident or was involved. Ask:

- WHO was involved?
- WHERE did the incident happen?
- WHEN did it happen?
- WHAT were the immediate causes?
- WHY did the incident happen (root cause)?
- HOW can a similar incident be prevented?

Factors to think about:

- Inadequate planning, training, orientation or supervision
- Poorly designed work areas or job procedures
- Inadequate, defective or obsolete tools, machinery and equipment
- Unusual circumstances (e.g., an emergency that requires workers to perform jobs they normally don't do)
- Rarely-performed jobs

Summary

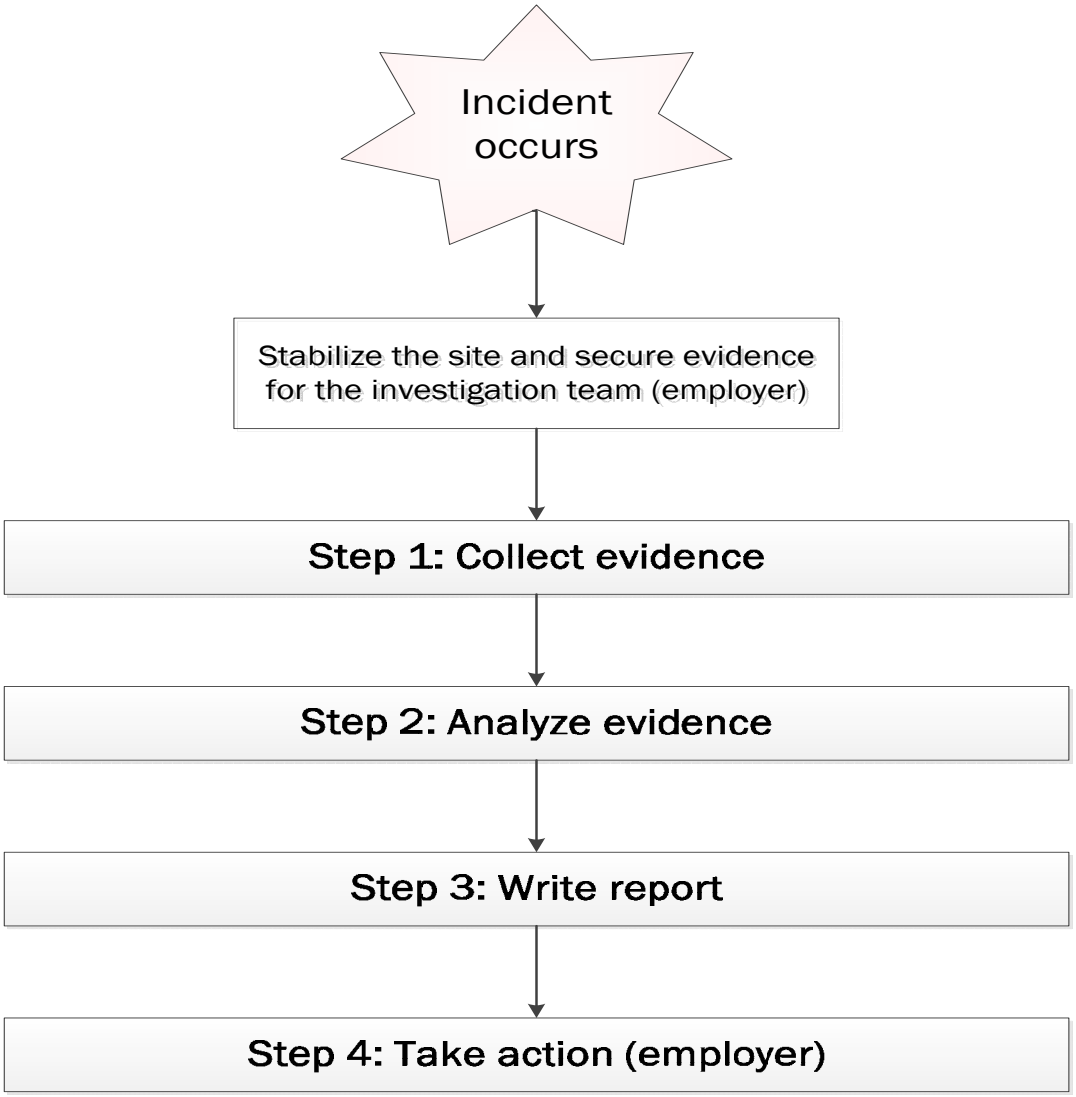

Notify OHS Division about reportable incidents (reg) 8 and dangerous occurrences (reg 9)
Provide information in notice required by reg 8 or 9
Reg 311: Employer and OHC investigate exposures to substances listed in tables 19 or 20 of regs and prepare any report required by legislation
Conduct any investigation required by reg 29 or 31
In workplaces with OHC, co-chairs investigate and send report to employer for finalization
In workplaces with representative, employer, contractor or owner conducts investigation with representative and finalizes report
Describe the incident or dangerous occurence
Include any graphics, photos or other evidence that may assist to determine causes
Explain cause or causes
Also investigate:
Reg 85: Employer investigates exposures to substances listed in table 14 of regs
State immediate corrective action taken
State any long-term corrective action that employer will take
In workplaces with OHC, employer writes report in consultation with co-chairs
In workplaces with representative, employer, contractor or owner provides representative with copy of investigation report
Complete and submit a report to an OHO if requested

Part II:
Advanced investigation techniques

Part II explains advanced investigation techniques. Employers and specialists can use this information to improve their investigations. OHCs and representatives can use it to check the effectiveness of the employer's investigations.

The guide lists the steps in conducting an investigation one after the other. In reality, many of these steps are carried out at the same time. Example: You may begin interviewing witnesses while you are still collecting physical evidence.

Summary of the investigation process



Step 1: Collect evidence

- Identify, collect, label and verify physical evidence
- Collect documentary evidence
- Interview witnesses

Introduction

When an incident happens, the employer's emergency response system stabilizes the scene and make it safe for the investigation team. Usually the supervisor collects initial evidence, such as the names of witnesses, and briefs the team about what happened.

An incident investigation essentially involves collecting and analyzing information. Your analysis (i.e., what caused the incident and how can another be prevented) depends on how well you collect information from:

- **Physical evidence:** Positions of incident debris, broken parts, skid marks and the type of damage done to tools, machinery and equipment.
- **Documents:** Equipment manuals, SDSs, work procedures, computer files and legislation.
- **Witnesses:** Those who saw the incident, were first on the scene and specialists familiar with the technology and work practices associated with the incident. Other witnesses include workers and supervisors working on shifts before the incident and those working in nearby areas.

Collecting information can be difficult and time consuming. Physical evidence may be damaged, lost or lacking. Relevant documents may not exist, be out of print or inaccessible. Witness statements can be contradictory or sketchy. Each new piece of information may generate more work. Examples: Interviews may suggest that certain documents be read. Physical evidence may indicate that more witness interviews are needed, etc. Hard, persistent and painstaking work may be required to find out what really happened and what can be done about it.

Identify, collect, label and verify physical evidence

Identifying, collecting, labeling, verifying and storing evidence are the first things that the investigation team does when it reaches the scene. Guidelines for dealing with evidence.

- Take appropriate safety precautions when dealing with evidence. Examples: There may be leaks of flammable or poisonous substances, unstable structures to deal with, etc.
- Systematically identify, collect, verify, record, store and analyze physical evidence to find out what caused the incident.

- If possible, do not remove evidence until witnesses have been interviewed. An intact incident scene sometimes helps witnesses to remember events more clearly.
- When appropriate, mark the locations of evidence you have removed with spray paint, tape or chalk. This may help you if the incident scene has to be looked at again later.

The following table illustrates some examples of the types of evidence your team may have to deal with. Take appropriate health and safety precautions when dealing with each type.

Examples of types of evidence	
Type of evidence	**Possible use**
Objects • Tools, equipment and materials (including damaged clothing and PPE) • Hardware • Facilities • Debris • Skid marks, patterns and other properties of items associated with incident	Can tell you what actually went wrong and why
Chemicals • Fluids and liquids • Gasses, smoke and fumes • Solids (e.g., pellets, dusts, powders, etc.) • Containers of chemical substances	• Hydraulic fluids and liquids can tell you a about the operability of machinery, mobile equipment and vehicles • Noxious gasses, smoke and fumes can help you identify hazards in the work area, work practices, adequacy of engineering controls, etc.
Biological substances • Blood, body fluids, etc. • Potentially contaminated food and drink • Plants, spores and pollens • Insects and other animals	Can tell you what caused harm and how the harm was done

Document physical evidence

Use a log form to document and track each piece of evidence as it is collected. See the Incident investigation report form in Appendix 1. You can also take notes and photographs, use videotape, make sketches and draw maps. See the Incident investigation photograph log, Incident investigation site sketch and the Incident investigation sketch of photograph locations and orientations in Appendix 1.

Making maps, sketches and drawings

Maps, sketches and drawings can come in handy if the site is disturbed, or equipment is moved

before the investigation is complete. Use maps to get a birds-eye view of the incident scene, locate the positions of equipment, tools, debris, workers, etc. Use scale drawings and maps to test theories about what caused the incident.

Obtain maps or drawings of the plant or worksite. The incident investigation team can make more detailed maps and drawings during its investigation. Make maps and sketches, and take photographs as soon as you get initial statements from witnesses at the site.

Take photographs and use video

Consider hiring professionals for complex photographic or video work. Inadequate photography can lead to incorrect conclusions and ineffective corrective action.

Use photographs (standard or computer cameras) and video to record information, especially information that cannot be collected in other ways. A thorough and complete video can reduce the number of trips you have to make to the incident site. Use video to cover the overall incident scene, as well as important locations and items.

Have an investigation team member direct the photographer to ensure that everything of importance is recorded. Move from general to specific shots. Start with shots of the general scene. Shoot each key item from several different directions to provide better information. Move the camera, but not the item that you are photographing. Moving an item may complicate subsequent examinations by specialists.

Select some way of clearly indicating distance, direction and perspective in your shots, such as including rulers and direction indicators.

Many cameras can print the date and time on each negative or slide. In some cases, this can be useful. In other instances, this feature can obscure evidence. If so, use a written log instead (see the Incident investigation photograph log sheet in the Appendix) to track each shot. Include the scene, subject, date, time, direction and the orientation (i.e., vertical or horizontal) of each photograph in the log.

Consider putting digital or scanned photographs in your report to illustrate key conclusions and recommendations.

Inspect physical evidence

Once evidence is collected, mapped and photographed, it can be examined.

- Check equipment, tools, facilities, etc., for signs of tool, machine and equipment failure, breakage, abuse, misuse, inadequate maintenance or non-use. See if key parts were missing, broken or out of place before the incident.
- Check safety devices (e.g., guards, interlocks, etc.) and control indicators (e.g., dials, readouts, instruments, position indicators, etc.) to see if they were working properly.

- Check damage and wear patterns, skid marks, the direction of debris, etc., to gather information about what happened before, during and after the incident.

For complex examinations, develop a checklist for equipment likely to be involved in an incident, or review electrical schematics, plans, etc. Put these checklists and schematics into the investigation kits.

Don't rely on your memory. Make notes, maps and drawings. Take photographs and use video. Use rulers and tape measures.

Remove and store physical evidence

Sometimes physical evidence must be removed, cleaned and tested to find out more about what caused the incident. Example: Biological samples or broken machinery parts may have to be sent to a lab for examination. If you will be removing, storing, or testing physical evidence, you will need a system to keep track of it and prevent contamination. The complexity of your system depends on your needs.

In complex investigations, you may need to prepare clean and clearly identified sample containers. Keep them in the investigation kit for ready access.

- Carefully note who removes each piece of evidence and how.
- Label each sample and its container. Make sure delicate or broken items are packaged and protected. Tag or otherwise identify samples that cannot be put in a container or bagged.
- Map and take photographs of each piece of evidence before it is removed. If a piece of evidence must be taken out of a tool, machine or structure, photograph each stage of the disassembly. Note any damage to each piece of evidence. Photograph each item before and after cleaning.
- Log when and where each item (or document) was found (i.e., date, time and location), is stored and who has access to it (i.e., when and for how long). If necessary, assign a specific person to control logs and ensure evidence is signed out by the person using it. Restrict access to sensitive evidence.

Always use safe work procedures to handle hazardous products (e.g., biohazards) and incident debris (e.g., sharp or heavy objects).

Collect documentary evidence

Documentary evidence can include:

- Work procedures and shift records;
- Maintenance files and inspection reports;

- Worker concerns and OHC minutes;
- Policies, procedures, plans, programs and specifications;
- Orientation and training records;
- Legislation and industry standards for the work performed;
- Computer files, photographs, video, diagrams and drawings; and
- Investigation reports dealing with similar incidents.

Documentary evidence is just as important as physical evidence. It can tell you what should have happened. Equipment readouts and other documents may even report what actually happened during some phases of the incident. The reasons for the difference between what should have happened and what actually happened are usually the causes of the incident.

Use the information you get from documentary evidence to help you:

- Identify which witnesses to interview and the questions to ask;
- Check statements given by witnesses; and
- Monitor the effectiveness of the employer's health and safety management system.

Interview witnesses

Much of the critical information in the investigation may be discovered through interviews. Effective witness interviews are crucial. We suggest that you plan interviews carefully and use experienced interviewers.

Limitations

Witness recollections are notoriously unstable. That is why it is important to interview witnesses within 24 hours (whenever possible) of the incident, while memories are still fresh. Prompt interviews help keep information reliable, detailed and accurate.

If possible, keep witnesses from talking with each other about the incident before they are interviewed. This avoids contamination of information.

Contradictions and conflicts in witness statements are normal. People interpret information differently. The same events seen from different angles and distances may look different.

Plan interviews

Put some thought into how the incident investigation team will conduct interviews. Ideally, your incident investigation system should provide some written guidelines. See the Incident investigation witness interview sheet in the Appendix.

Suggestions:

- Get as much information as you can. Talk to people who have information that can help. Review documents and physical evidence. Get a general understanding of the events of the incident, who was involved and where each witness was when it happened. Do not form any conclusions at this point. Don't go into the interview with preconceived ideas.
- Make sketches and diagrams during your initial visit to the incident site. Use them when planning your interviews to pinpoint where each witness was before, during and after the incident. Be sure to map out the locations of equipment, machinery, etc. Use sketches and diagrams during the interview to clarify issues and refresh the witness' memory.
- Identify all witnesses you want to interview. Ideally, the first supervisor on the incident scene will have made a list of witnesses and obtained initial statements from them.
- Decide who will conduct each interview. Experience suggests that it is best to have one experienced, credible, person do all the interviews. This provides greater consistency, depth and focus. If more than one team member (e.g., OHC co-chairs) will be conducting interviews, make sure they are consistent in their approach and in the questions they ask.
- Discuss what you want to get from each interview. Determine what information each witness may be able to provide. Think about how you can get the most useful information. Set goals for each interview and list the topics you will cover. You might find it helpful to make a table showing:
    - Each witness's name, job title and phone number;
    - A list of questions you want answered; and
    - A summary of each witness' initial statement and where they were during the incident.
- Develop a standard set of interview questions. Use these questions to check the reliability of each witness. Make a table to help you compare the answers from each witness to your standard questions. See the questions listed in the Incident investigation witness interview form in the Appendix for suggestions.
- Agree on how records will be made. Are you going to take notes,or use a tape recorder? If you use a tape recorder, will you need to produce a transcript? Do you want to take written witness statements? The employer can provide secretarial and administrative support.
- Schedule interviews. Find out when each witness can be interviewed. Find a neutral place where interviews can be held in private and without interruptions. Small meeting or conference rooms work well.
- Be prepared to interview each witness more than once. Be prepared to conduct initial interviews to gather general information and subsequent interviews to clarify important points.

Sequencing

1. Interview those involved first. Start by separately interviewing those witnesses who were involved in the incident, saw it or were the first on the scene. Example: Interview the incident victim(s), the supervisor who gave instructions to the worker(s) and the supervisor, workers and first-aid responders who were first on the scene after the incident. If you don't interview these people within 24 hours of the event, they may forget important details.
2. Interview those who know something about what was going on before the incident. Example: Interview the supervisor of the previous shift and the workers who were using the equipment or performing the job involved in the incident. Find out if supervisors and workers in nearby areas have anything to contribute.
3. Interview technical specialists who are familiar with the technology and work practices involved. Example: Interview supplier representatives about the hazards of the equipment, chemicals or safe work practices associated with the job.

Conduct interviews

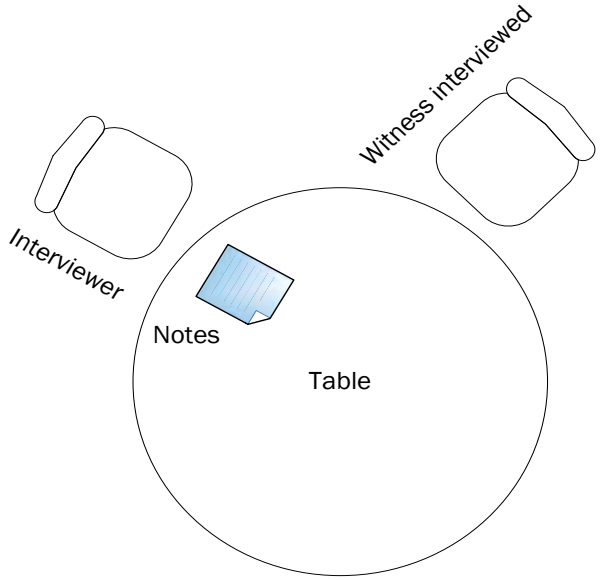
There are many ways of conducting an interview. The format explained here has proven to be successful under a variety of conditions.

Set the tone

An incident investigation interview is not an interrogation. Incident investigations should find facts and not fix blame. Here are some tips for creating a productive environment for your interviews.

Treat everyone with courtesy and respect. Be sensitive to the emotional condition of each witness.

Create an informal environment. Don't put barriers between you and the person being interviewed. Sit on the same side of the table.



Reassure each witness. Make sure each witness knows why they are interviewed and what the interview is about. Some witnesses may think that the real purpose of the interview is to find who should be punished. Make it clear that the purpose of the interview is to find what caused the incident and not to conduct a witch hunt. Put each witness at ease. Start with questions that are easy to answer.

Don't rush. Tell witnesses they can help prevent another incident by sharing what they know. Let them know if they might be asked to come for follow-up interview. Encourage them to contact you if they have any questions or remember something new.

Assess each witness

During each interview, think about:

Time. How much time has passed since the incident? People often forget from 50 to 80 percent of the details within 24 hours of an incident.

Contamination. Have witnesses been in contact with each other? When witnesses talk about what they saw during the incident, their statements tend to become the same.

Signs of stress, illness, shock or amnesia resulting from the trauma of the incident. Physical or mental health can affect the accuracy of a statement. Unpleasant events are often forgotten. Stress can distort events and reduce the reliability of testimony. Injured or emotionally affected witnesses may have little or no memory of events. Some need time to recover before being interviewed.

To evaluate reliability during the interview, use questions of fact (i.e., questions that you already know the answers to, such as when and where the incident happened and who was involved). After the interview, compare the answers of witnesses to the standard questions you prepared.

Use effective information gathering techniques

1. Start by gathering basic information from each witness. Ask general questions first and then go into detail to flush out the information. At the end of the interview, read the final statement of each witness back to him or her (or summarize what the witness told you if you aren't going to use written statements). Clear up uncertainties. Be an active listener. Keep an open mind.
2. Ask each witness to describe how he or she became aware of the incident (i.e., When did you find out about the incident and how?) Example: A witness may have heard a loud noise or seen something wrong immediately before the incident. Information like this might help discover why the mishap happened.
3. Ask each person to describe what they heard, felt and did before, during and immediately after the incident. Let the witness explain events in their own words. Give each witness all the time they need to tell you what they saw and how they feel.

Ask questions

Sample format

1. Ask a specific question. Example: What time did you arrive at the scene of the incident?
2. Ask a clarifying question. Example: Who else was there?
3. Pause for a few moments to give the interviewee a chance to remember events and provide additional information.
4. Then ask an open question. Example: Can you describe the position of the damaged tools, equipment, and machinery?

Sample questions

- When did you find out about the incident? How?
- What time did the incident occur? Where
- Who was involved (i.e., supervisors, injured workers, witnesses, first responders, etc.)?
- What work was being done before and at the time of the incident?
- What had the supervisor instructed the workers to do?
- What supervision and training were provided?
- What was being used to do the work (e.g., tools, equipment, machinery, supplies, chemicals, etc.)?
- What was the condition of the work environment before, during and after the incident (i.e., weather, noise, chemical smells, temperature, distractions, etc.)?
- What was moved or repositioned after the incident (including casualties)?
- What tools, equipment, supplies and people were brought to the incident scene to respond?
- How did the response and rescue crews perform?
- How do you think a similar incident could be avoided? (Each person's views about how to prevent the incident may help you develop recommendations for corrective action.)

Keep the interview on track

Use the goals of your interview and your list of interview questions to keep the interview on track. Ask questions that require specific answers to keep statements from wandering.

Take notes

Make your notes complete, specific and legible. Keep separate notes for each interview. Use notes to help plan subsequent interviews.

Don't try to take notes and interview at the same time. Have one person take notes and another conduct the interview. If one person is responsible for both, prepare notes immediately after each interview is over.

Concentrate on recording important facts. Don't try to record everything.

Use written statements

There is no regulatory requirement for OHCs, representatives or employers to take signed written statements during incident investigations. Some OHCs and representatives prefer to have the employer take written statements.

If you decide to obtain written statements, take them near the end of your investigation after you are satisfied that you know what happened. Review each statement with the person who gave it before it is finalized. Clear up any uncertainties before the statement is signed.

Take written statements only from those who can provide critical information.

What to include in a statement

Add on the top or bottom of each page of each statement:

- Name of the person being interviewed
- Page number and the total number of pages in the statement
- Date

Example: Statement of John Smith, page 4 of 5; Given on this date _____.

This can prevent confusion if statements get mixed together or pages become separated.

Identify who conducted the interview on the first page of each statement.

Follow up

Conduct follow-up interviews as new information surfaces.

How to get the most out of every interview

Create a relaxed atmosphere

Welcome each witness. If the witness doesn't know you, introduce yourself and shake hands. Be polite, patient and friendly. Treat everyone with respect. Put each witness at ease.

Prepare each witness

- Remind each witness that the purpose of the interview is to prevent another incident — not to attach blame.
- Explain that each witness may need to be interviewed more than once as new information emerges.
- Advise each witness that information they provide may have to be disclosed to others in the course of the investigation.
- Express how important the information they provide will be in finding out what happened and in preventing a recurrence.

Record information

- Explain how information will be recorded and what will be done with it. If you are going to take written statements, reassure each witness that they will be able to review their statement before it is finalized.
- If someone else will be recording each statement, rely on that person to provide a detailed account of what was said. Concentrate on noting important points and using them to ask questions and obtain information.

Ask questions

- Allow the witness to generalize. Ask each witness to describe what they saw in full before you ask detailed questions. Use an opening line, like "Would you please tell me what you saw/did?" Some interviewers have each witness write out a statement immediately before the interview and then use this statement as a basis for their questions.
- Other interviewers like to have witnesses prepare their statements after the interview has reminded them of the events they saw.
- Begin with easy yes or no questions. Then ask the witness to tell you what happened. Once the witness is finished, ask more detailed questions to flush out details.
- Keep your questions focused. Explore unexpected information that comes up, but keep to your interview plan and get the information you planned to obtain. Ask each witness to answer each one of the standard interview questions you prepared before the interview. Use the answers to corroborate information.
- Use comparisons and reference points to help each witness answer the questions. Example: "How did the outdoor temperature at the site compare with today's temperature?" Use drawings, photographs, sketches, etc., to help witnesses remember.
- Ask open-ended questions that cannot be answered with a yes or no. Probe for missing information. Ask questions to clarify what other witnesses have said.
- Watch for body language, inflections in the voice, gestures, etc. Body language may suggest other areas to explore in the interview.
- Listen actively. Give witnesses feedback. Summarize and feedback key points of each statement. Keep an open mind. Don't jump to conclusions.

End the interview on a positive note

- If possible, provide each witness with a written copy of his or her verbal statement. Go over it with them and clear up any misunderstandings. If a copy will not be available until later, make an appointment to review it with the witness. Encourage each witness to contact you if he or she remembers something or has questions. Provide your phone and FAX number(s).
- Remind witnesses that more interviews may be needed later. Thank each for taking the time to talk with you.

What to avoid during interviews

- Do not rush the witness while he or she is describing the incident or answering questions. Avoid cutting off anyone's statement.
- Do not judge, display anger, refute someone's statement, threaten, intimidate or blame a witness.
- Do not make promises you can't keep, such as promising to keep interview material confidential.
- Do not antagonize any witness by using inflammatory words or terms (e.g., stupid, careless or not concerned with safety).
- Do not omit questions because you may already know the answer. You may not really know as much as you think.
- Do not suggest answers. Examples:

  Wrong: They didn't use the right work procedure did they?

  Right: How were they instructed to perform the job? What procedures did they use?

  Wrong: Was there a rotten egg smell?

  Right: Was there a smell? What did it smell like?

Summary

This step explains how to collect evidence. How well you carry this out determines how well you perform the next step — analyze the evidence.

Usually the first supervisor on the scene takes command and stabilizes the situation. Once this is done, the investigation can begin. Generally, the investigation team will get the information it needs to find the cause of an incident from three sources: Physical evidence, documents and witnesses.

Collect physical evidence. Systematically gather, document and preserve physical and documentary evidence as quickly as possible. Use a log form (see the example in the Appendix) to document and track each piece of evidence as it is collected. Take notes and photographs, use videotape, make sketches and draw maps. Always use safe work procedures to handle hazardous products (e.g., biohazards) and incident debris (e.g., sharp or heavy objects).

Collect documents. Documentary evidence is just as important as physical evidence. Documents can tell you what should have happened and, in some cases, what actually happened. The reasons for the difference between what should have happened and what actually happened are usually the causes of the incident.

Interview witnesses. Identify and interview key witnesses within 24 hours of the incident while memories are still fresh. If possible, keep witnesses from talking with each other about the incident before they are interviewed. This avoids contamination of information.

Start by interviewing witnesses who were involved in the incident, saw it, or were the first on the scene. Next, interview those who know something about what was going on before the incident. Finally, interview technical specialists who are familiar with the technology and work practices involved. Example: Interview supplier representatives about the hazards of the equipment, chemicals or safe work practices associated with the job. Conduct follow-up interviews as new information surfaces. Physical or mental health can affect the accuracy of a statement.

What happens next? Once you have identified, collected and verified physical evidence, collected documents and completed witness interviews, you must analyze the evidence to discover what caused the incident.

Notes

Step 2: Analyze the evidence

- Analyze incident factors
- Identify the direct cause
- Identify the indirect causes
- Identify the root causes

Introduction

After you've completed and summarized witness interviews, examine each statement to determine what facts it reveals about the incident. Verify each fact by checking it against the physical and documentary evidence and the statements of witnesses.

As you examine physical and documentary evidence, you may need to conduct follow-up interviews. Unfortunately, the information from follow-up interviews may not be very reliable. Witnesses talk to each other, forget details, and fill in the gaps of their memories.

Organize your facts then begin your analysis and find:

1. **Direct causes.** Determine what directly led to the incident. This will often be an unsafe act or condition. Separate facts from theory and opinion as much as possible. Avoid jumping to conclusions and continue looking for any underlying causes.
2. I**ndirect causes.** Identify what working conditions that set the stage.
3. **Root causes.** Examine the employer's health and safety system (i.e., policies, procedures, plans, employee assistance programs, etc.) to see if there are any fundamental flaws. Look for interactions across system components.

Analyze incident factors

A simple, but effective way of finding the causes for an incident is to keep asking who, what, where, when and how for every essential event until you are satisfied that you know why the incident happened.

Go through each event before, during and immediately after the incident. Ask why each happened. Evaluate the role of every factor, including:

- People factors
- Material factors
- Work environment factors (e.g., workplace conditions)

- Work process factors (e.g., work flow design)
- Health and safety system factors (i.e., policies, plans and procedures)

People factors

Examples:

- Supervision
- Instructions given at the time of the incident
- Training and experience of everyone involved
- Personal factors (e.g., inexperience, illness, medication, stress, etc.)

Material factors

Examples:

- Substances and materials
- Tools, equipment and machinery
- Personal protective equipment

Work environment factors

Examples:

- Weather conditions (e.g., temperature, light, ice, rain, etc.)
- Work environment (e.g., visibility, noise, heat, etc.)
- Time of the day, shift or week when the incident happened

Work process factors

Examples:

- Job itself (i.e., worker selection and orientation, work procedures, ergonomics, etc.)
- Work area and workflow (i.e., production pressures)
- Controls and safety devices on equipment and machinery

Health and safety system factors

Examine:

- Health and safety system, including programs, policies, procedures, standards and specifications to find out what created the work environment in which the incident happened;
- OHC minutes forms, OHO reports, notices of contravention, inspection reports and incident records for information about the health of the safety culture in the workplace;
- Any written instructions and work procedures indicating what the employer wanted done at the time of the incident;
- Operator's manuals and manufacturer's specifications to find out how tools, equipment, materials, and supplies should have been used; and
- Legislation and other standards for information about health and safety precautions that should have been in place.

Questions to ask

- Are there clearly measurable performance objectives and accountabilities for health and safety?
- Are enough resources allocated to health and safety?
- Is adequate training provided to workers and supervisors?

Identify the direct cause

The direct (immediate) cause(s) usually precipitates the incident and occur(s) immediately before it.

Example: An employer asks a newly-hired teenager to load and drive a half-ton truck to a storage site through a large, crowded, confusing, industrial yard. On the way, the teenager drives into a hidden sewage lagoon and drowns. The immediate cause was driving into the lagoon.

Identify the indirect causes

Indirect causes set the stage for an incident and can include:

- Lack of training and supervision;
- Inadequate tools, equipment and materials; and
- Departures from safe work procedures.

Try to find out if there were any symptoms of a problem before the incident. If so, why were no concerns expressed? Why did the health and safety system fail?

Using the previous example, the indirect causes could include the following:

- The teenager had not been trained to drive the truck and had never driven in the yard before;
- Traffic routes and the lagoon were poorly marked; and
- Supervision was inadequate.

Identify the root causes

An incident may or may not have one ultimate root cause. Examples:

- Inexperience (i.e., employer/worker)
- Inadequate mechanisms to identify and control hazards
- Design flaws (i.e., job, equipment, tools, installations)

Using the same example, the employer had a health and safety program. However, no one had ever had a traffic incident in the yard, so no one considered the hazards of driving near the lagoon. There were no written policies or safety procedures regarding company vehicles or traffic safety in the yard. Worker orientation did not include vehicle safety or yard hazards.

Review any system interactions

Sometimes one problem leads to others, creating a string of falling dominoes. In other instances, problems randomly interact, creating a unique, incident-producing situation.

Sometimes improving the entire health and safety management system is the best way of preventing recurrences.

Using the same example, the workplace's OHC might recommend to:

- Remove the direct cause:
    - Ensure prompt identification of hazards in the company's yards, roadways and lagoons, assess the harm of risks and put in place effective controls.
    - Clean up the yard and ensure roadways are in good condition.
    - Mark the lagoon and all roadways. Install traffic barriers along the shore of the lagoon.
- Remove the indirect causes:
    - Ensure company vehicles and driving practices meet appropriate health and safety standards.

    - Ensure workers are informed of hazards in the yard and in operating vehicles and mobile equipment.
    - Provide inexperienced workers with instruction in how to drive company vehicles, particularly loaded trucks.
    - Ensure inexperienced workers are supervised closely by a competent supervisor.
    - Require workers to use safe driving practices as a condition of employment.
- Correct the root cause by removing weaknesses in the organization's health and safety system:
    - Identify and take steps to prevent foreseeable incidents.
    - Provide written procedures specifying who can drive company vehicles and driving rules that must be followed in the yard.
    - Improve the system used to provide yard supervision, housekeeping, roadway maintenance and hazard control.
    - Improve worker orientation and training.

If your workplace does not already have an occupational health and safety program, visit saskatchewan.ca for information and publications on how to set up an occupational health and safety program.

An occupational health and safety program consists of these components:

- A written policy to demonstrate the employer's commitment
- A system to identify and control hazards and emergencies
- A system to identify people and resources to respond to emergencies
- A statement of responsibilities and accountabilities
- A schedule of inspections
- A plan to control chemicals and biohazards
- A training plan for supervisors and workers
- A procedure to investigate incidents, dangerous occurrences and refusals to work under SEA 3-31.
- A strategy to involve workers
- A mechanism to regularly evaluate and revise the program

Summary

After completing and summarizing witness interviews, examine each statement to determine what facts it reveals about the incident. Verify each fact by checking it against the physical and documentary evidence and the statements of other witnesses. Then, begin the analysis:

1. Identify the direct cause that precipitated the incident.
2. Identify the indirect causes that set the stage.
3. Identify any weaknesses in the employer's health and safety system (i.e., policies, procedures, plans, etc.) to see if there are any fundamental flaws (root causes).

Go through each event before, during and immediately after the incident. Evaluate the role of every factor, including:

- People factors;
- Material factors;
- Work environment factors (e.g., workplace conditions);
- Work process factors (e.g., work flow design); and
- System factors (i.e., policies, plans and procedures).

Spend time examining the workplace's health and safety management system (i.e., programs, policies, procedures, standards and specifications) to find out what created the work environment within which the incident happened.

Keep asking why until you are satisfied you know what caused the incident.

Fixing the entire health and safety management system is often the best way of preventing recurrences.

Step 3: Write the final report

- Report introduction
- Methodology and equipment
- Incident summary
- Investigators
- Why the incident happened
- Recommendations
- Conclusions
- Appendices

Introduction

Once you are satisfied that you know why the incident happened, write a report in simple, easy-to-understand language.

- Explain what happened and why
- Propose what must be done immediately to prevent the incident from happening again
- Propose what should be done in the long term to remove fundamental weaknesses in the health and safety systems (if any) that led to the incident

The employer is responsible for taking the corrective action. The OHC or representative helps the employer to monitor the effectiveness of the corrective action.

The SEA and regulations do not require you to use a specific investigation report format. Select a report format that meets the level of sophistication you require. Or, adapt the following format example to suit your needs.

Sample incident investigation report format

I Introduction
- A. Purpose of the investigation
- B. What it covers

II Methodology and equipment
- A. Techniques, methods and equipment
- B. Sources for information and experts

III Incident summary
- A. Brief description
- B. Resulting injuries and losses

IV Why the incident happened
- A. Explanation of what happened
- B. Description of the three phases of the incident:
  1. Pre-contact
  2. Contact
  3. Post-contact

V Findings and recommendations
- A. Causes
  1. Direct cause(s)
  2. Indirect causes
  3. Root causes
- B. Recommendations
  1. Short-term recommendations to correct the direct cause of the incident
  2. Long-term recommendations to correct the underlying causes of the incident

VI Conclusions
- A. Summary of events
- B. Summary of recommendations

VII Appendices
- A. Forms
- B. Photographs, maps and drawings
- C. Witness statements
- D. Applicable standards
- E. Technical terms and abbreviations used
- F. Miscellaneous information

Report introduction

The introduction:

- Provides an overview of the investigation report;
- Outlines the purpose of the investigation report (i.e., to find and correct the underlying causes of the incident and not fix blame); and
- Discusses what it covers and the extent of the report (e.g., what health and safety systems were reviewed).

Methodology and equipment

In formal reports and investigations of complex incidents, this section explains the techniques, methods and equipment used by the investigators, such as gas monitoring processes, engineering analyses, etc. It states where technical information in the report comes from and identifies any labs and other professional help used.

A discussion of methodology is useful to convince readers that the investigation is thorough and complete.

Incident summary

Use this section to provide an executive summary of the incident and the injuries and losses resulting. Don't state your conclusions here. Simply tell the reader what happened, when, where and how. Include a paragraph identifying who (i.e., victims, witnesses and supervisors) and what (e.g., chemicals, equipment and tools) were involved.

Why the incident happened

This is the meat of your report. It tells the reader what happened in detail, but does not provide conclusions or recommendations.

Explain everything you know about the incident here, simply and directly. Describe:

- What happened immediately before the incident (including factors that set the stage for the incident, such as work done on the previous shift);
- What happened during the incident; and
- What happened immediately after the incident (including what happened during the response to the incident).

Describe who was injured and how seriously. Describe how tools, equipment and materials were damaged and the severity of loss.

Describe what information each piece of evidence provides.

Findings and recommendations

Use this section to describe the causes of the incident (i.e., direct, indirect and root) and make your recommendations (short term and long term). The first part (findings) will describe the causes and the second part will contain your recommendations.

Findings

Clearly present the facts (evidence) and what conclusions logically flow from them. Make sure that your conclusions about what caused the incident are supported by evidence in the previous sections of the report.

Avoid fixing blame or jumping to conclusions.

Recommendations

Once you've presented your conclusion, propose short-term recommendations to correct the direct cause of the incident and long-term recommendations to correct each of the underlying (root) causes.

Where appropriate, include:

- Who should see the report. Include anyone with authority over the employees, tools, equipment and materials involved in the incident;
- What corrective actions should be taken;
- Who should take them;
- When. Suggest target dates for each recommendation;
- What resources are required (e.g., money, time, materials, etc.); and
- Who should monitor the corrective action.

Conclusions

Sum up what happened, why and what to do to prevent a recurrence.

Appendices

Use this section to list:

- Forms;
- Photographs, maps and drawings;

- Witness statements;
- Applicable standards; and
- Technical terms and abbreviations used and miscellaneous information.

Summary

Once you are satisfied that you know why the incident happened, write a report.

Explain what happened and why.

Propose what must be done immediately to prevent the incident from happening again.

Propose what should be done in the long term to remove the fundamental causes in the employer's health and safety management system (if any) that led to the incident.

The legislation does not require you to use a specific format for your investigation report.

Notes

Step 4: Take action

- Control hazards
- Correct weaknesses in the health and safety system
- Assign responsibilities to implement corrective action
- Monitor the effectiveness of corrective action
- Tell the workers what was done

Introduction

Regulation 28 states that on written notice by the OHC or the representative of an unsafe condition or a contravention of the law, the employer must:

1. Take immediate steps to protect the health and safety of any worker who may be at risk until the unsafe condition is corrected;
2. Correct the unsafe condition as soon as possible; and
3. Inform the OHC or representative in writing of:
    (a) The actions that the employer has taken or will take; or
    (b) The employer's reasons for not taking action.

The employer corrects problems identified in the investigation report. This includes making final decisions on:

- Health and safety system improvements to make;
- Hazard controls to use;
- Resources to allocate; and
- Responsibilities and accountabilities to assign.

The OHC or representative helps the employer by providing input and checking the effectiveness of the employer's actions.

The corrective action required to correct problems depends on workplace needs. There is no master plan for all workplaces. The employer and workers in each workplace must cooperate to develop solutions suited to their needs.

Use industry health and safety literature (from suppliers, manufacturers, employer associations, etc.), to identify specific workplace hazard controls.

Control hazards

Correct the direct and indirect causes of an incident. This usually involves controlling specific hazards. The closer a control is to the source of the hazard, the better.

1. Determine if the hazards can be eliminated or controlled at their source (i.e., where the problem is created) through applied engineering.
2. If this does not work, try to put controls between the source and the worker.
3. If this is not possible, control hazards at the worker's level.

One type of hazard control may not be effective completely. A combination of several different types of hazard controls often works well.

Whatever method is used, try to find the best control for the root cause of each problem identified in the report. Don't just address the symptoms. Example: It is better to control the cause of an eye injury than to simply issue workers eye protection.

Control at the source

Elimination

First, try eliminating the hazard. Getting rid of a hazardous job, tool, process, machine or substance may be the best way of protecting workers. Example: A salvage firm might decide to stop buying and cutting up scrapped bulk fuel tanks (due to explosion hazards).

Substitution

If elimination is not practical, try replacing hazardous substances with something less dangerous. Example: A hazardous chemical can be replaced with a less hazardous one or a safer work practice can be used. Be sure to also identify, assess and control the hazards of substitutes.

Redesign

Sometimes engineering can be used to redesign the layout of the workplace, workstations, work processes and jobs to prevent ergonomic hazards. Example: Redesign containers for easier holding and lifting. Engineering may be able to improve workplace lighting, ventilation, temperature, process controls, etc.

Isolation

Isolating, containing or enclosing the hazard is often used to control chemical hazards and biohazards. Example: Negative pressure glove boxes are used in medical labs to isolate biohazards.

Automation

Dangerous processes can sometimes be automated or mechanized. Example: Computer-controlled robots can handle spot welding operations in car plants. However, workers must now be protected from robotic hazards.

Control along the path from the hazard to the worker

Hazards that cannot be isolated, replaced, enclosed or automated can sometimes be removed, blocked, absorbed or diluted before they reach workers. Usually, the further a control keeps hazards away from workers, the more effective it is.

Barriers

A hazard can be blocked. Examples: Proper equipment guarding can protect workers from contacting moving parts. Screens and barriers can block welding flash from reaching workers. Machinery lockout systems can protect maintenance workers from physical agents such as electricity, heat, pressure and radiation.

Absorption

Baffles can block or absorb noise. Local exhaust ventilation can remove toxic gasses, dusts and fumes where they are produced.

Dilution

Some hazards can be diluted or dissipated. Example: General ventilation might dilute the concentration of a hazardous gas with clean, tempered air from the outside. Dilution ventilation is often quite suitable for less toxic products. However, it is not effective for substances that are harmful in low concentrations. It may also spread dusts through the workplace rather than completely removing them.

Control at the worker's level

Sometimes it is not possible to control a hazard adequately at its source or between it and the worker. Workers must be protected in other ways.

Administrative controls

Introduce new policies, improve work procedures and require workers to use specific PPE and hygiene practices. Example: Job rotations and scheduling can reduce the time that workers are exposed to a hazard. Rotate workers through jobs requiring repetitive tendon and muscle movements to prevent cumulative trauma injuries. Schedule noisy processes when few workers are

in the workplace. Standardized written work procedures ensure that work is done safely. Require employees to use shower and change facilities to prevent absorption of chemical contaminants.

The employer is responsible for enforcing administrative controls.

Work procedures, training and supervision

Train supervisors to apply modern safety management and supervisory practices. Train workers to use standardized safe work practices.

The OHC or representative should help the employer review and update operating procedures and worker training periodically. Refresher training should be offered periodically. The employer is expected to ensure that employees follow safe work practices.

Emergency planning

Written plans should be in place to handle fires, chemical spills and other emergencies. Train workers to follow these procedures and use appropriate equipment. Provide refresher training regularly.

Housekeeping, repair and maintenance programs

Housekeeping includes cleaning, waste disposal and spill cleanup. Tools, equipment and machinery are less likely to cause injury if they are kept clean and well maintained.

Hygiene practices and facilities

Hygiene practices can reduce the risk of toxic materials absorbed by workers or carried home to their families. Keep street clothing n separate lockers to avoid contamination from work clothing. Segregate eating areas from work areas. Forbid eating, drinking and smoking in toxic work areas. Where applicable, required workers to shower and change clothes at the end of a shift.

Personal protective equipment (PPE) and clothing

Use PPE and clothing when:

- Other controls aren't feasible (e.g., to protect workers from noise when they use chainsaws);
- Additional protection is needed; or
- The task or process is temporary (e.g., periodic maintenance work).

The employer must require workers to use PPE wherever the regulations or organizational work procedures prescribe its use. Workers must be trained to use, store and maintain their equipment properly. The employer, supervisor and workers must understand the limitations of their PPE.

Selecting controls

Selecting a control involves:

- Evaluating and selecting temporary and permanent controls ;
- Implementing temporary measures until permanent (i.e., engineering) controls can be put in place; and
- Implementing permanent controls when reasonably practicable.

Example: Suppose an eye injury hazard is identified (e.g., flying chips from a machine). Temporary measures might require workers to use eye protection. Long-term, permanent controls might use engineering to remove or isolate the source of the flying chips.

Correct weaknesses in the health and safety system

Experience suggests that the underlying or root causes for many incidents involve weaknesses in the organization's health and safety system, particularly:

- Lack of a safety culture (i.e., inadequate policies, responsibilities, accountabilities, follow-up mechanisms, attitudes, etc.);
- Inadequate design (e.g., facilities, jobs, etc.);
- Inadequate hazard identification and risk assessment;
- Inadequate or unclear procedures;
- Insufficient training of workers and supervisors;
- Insufficient orientation, induction and supervision of inexperienced workers; and
- Failure to ensure that all employees comply with workplace requirements.

Weaknesses in the organization's health and safety system make incidents and loss more likely. That is why it is as important to identify and correct systems defects, as it is to control individual hazards. The corrective action required depends on workplace needs.

Assign responsibilities to implement corrective action

The employer should make specific managers and supervisors accountable for implementing each corrective action put forward in the incident report:

- Assign specific responsibilities and put them in writing.
- Accompany assignments with a monitoring system to ensure compliance.

- State what consequences follow when they do not carry out health and safety responsibilities.

Document what was done and keep copies on file.

Monitor the effectiveness of corrective action

Sometimes the employer's corrective action does not work as well as expected. Therefore, the OHC or representative should monitor what was done. The OHC or representative can ask these types of questions during inspections and other activities:

- Has the corrective action controlled the hazards and improved the workplace's health and safety system?
- Is the risk posed by the original hazard or system defect contained?
- Is the risk posed by similar situations in other work areas controlled?
- Have any new hazards been created?
- Are new hazards appropriately controlled?
- Are monitoring and follow-up processes adequate?
- Have workers been informed about the situation adequately?
- Have orientation, training and the workplace health and safety system been modified to deal with the new situation?
- Are any other measures required?

Document the effectiveness of corrective action.

Tell the workers what was done

Make sure workers know what is happening. Use inspection reports, OHC minutes, etc. to communicate:

- The hazards and system problems involved in the mishap;
- What short-term controls are used (i.e., what is being done now); and
- What will be done to remove or permanently control those hazards and fix the health and safety system (i.e., long-term controls).

The employer can help by asking supervisors to communicate this information to workers during tool box talks, worker training and orientation.

The OHC or representative can check to see that the employer carries out each corrective action. Find out if the action taken by the employer has solved the problem. Tell your employer about any worker or supervisor concerns about what was done.

Summary

Make final decisions about what system improvements, hazard controls, resources and accountabilities to apply.

The OHC or representative provides input and checking the effectiveness of the employer's actions.

The corrective action required depends on the needs of each workplace. In order of effectiveness, hazards should be controlled:

1. At their source (i.e., where the problem is created) through:
    (a) elimination of the hazard
    (b) redesign of the work process
    (c) substitution of a safer item, material or substance
    (d) process automation
2. Between the source and the worker through:
    (a) barriers between the hazard and the workers
    (b) absorbing the hazard (e.g., noise, chemicals, etc.)
    (c) diluting the concentration of the hazardous substance to an acceptable level
3. At the worker's level through:
    (a) administrative controls, including new policies, improved procedures and practices
    (b) improved work procedures, training and supervision
    (c) written emergency plans to handle fires, chemical spills and other emergencies
    (d) housekeeping, repair and maintenance programs to control contamination and keep the tools and technologies of production working properly
    (e) hygiene practices and facilities to reduce the risk of toxic materials being absorbed by workers or carried home to their families
    (f) PPE and clothing

Experience suggests that the underlying or root causes for many incidents involve weaknesses in

the organization's health and safety system. The corrective action required depends on workplace needs.

The employer should make specific managers and supervisors accountable for implementing each corrective action put forward in the incident report.

Sometimes the employer's corrective action does not work as well as expected. Therefore, the OHC or representative should monitor what was done and help the employer identify any shortcomings.

Make sure workers know what is happening. Use inspection reports, OHC minutes, etc., to communicate what was done.

Notes

Appendix 1:
Incident investigation forms

Incident investigation report form

The Incident Investigation Report form provides the supervisor or first responder with a tool to collect initial information at the incident site. Provide this form and the more detailed forms to the OHC to complete its investigation.

Guidelines for a report

- The report format should fit the needs of the workplace.
- Information should be complete and easy to understand.
- Make it only as long as is necessary to communicate effectively.
- For best results, write the report as soon as possible after the investigation.
- Post a summary in the workplace to keep workers informed.

Report format

1. Summarize how the incident happened.

   Provide a brief description of what happened without conclusions (incident summary).

2. Summarize the direct cause.

   Describe the immediate cause of the incident (what happened just before the incident).

3. Summarize the root cause.

   Describe the underlying problems in the WRS that set the chain of events in motion that produced the incident.

4. What actions are recommended to control the immediate causes of the incident?

   Describe short-term controls that should be implemented to prevent another incident until longer-term (engineering) controls can be put in place.

5. Describe what actions are recommended to control the root causes of the incident.

   Identify engineering and other measures that will remove the fundamental flaws in the WRS that caused the incident.

6. Sketch the site of the incident.

   A picture is worth a thousand words. Use illustrations to show what happened.

Incident Investigation Report Form

(Adapt to suit your needs)

Company or division:		Department:	
Location:		Date:	Time: AM / PM
Reported to OHS Division? Yes ❑ No ❑	Date reported:	Contact/ Phone:	
Injury or illness	**Type of incident (fall, cut, etc.)**	**Property damage**	
Name of injured worker(s):	Description:	Description:	
Experience:		Severity of damage/loss:	
Occupation:	Object or substance inflicting harm:	Collateral damage to equipment/ object/substance related to incident:	
Exact location of incident:			
Part of body affected:	Person in control of activity:	Estimated cost:	
		Final cost:	
Nature of injury or illness:	Number of work days lost:	Supervisor:	
Summarize how the incident happened.			

Incident Investigation Report Form *(Adapt to suit your needs)*
Summarize the direct cause.
Summarize the indirect and root causes.
What actions are recommended to control the immediate causes of the incident?
Describe what actions are recommended to control the root causes of the incident.

Incident Investigation Report Form

(Adapt to suit your needs)

Sketch the site of the incident.			
Physical evidence	**Condition**	**Where stored?**	**Contact person**
Witness	**Phone number**	**Where and when witnesses work**	

Investigators	Position on OHC	Signature
1.		
2.		

Signature of OHC co-chairpersons	
Employer co-chairperson	Worker co-chairperson

Incident investigation physical evidence log						
Item tag number	Evidence description	Original location	Where stored	Inventoried and tagged by (name/signature/date/time)	Acknowledgements of transfer	
					Released by (name/signature/date/time)	Received by (name/signature/date/time)

Incident investigation site sketch

Investigator:

Date/time: (Attach a copy of the position map form)

Site orientation

Incident investigation position map

Investigator:

Date/time: (Attach a copy of the site sketch form)

Site orientation

Incident investigation sketch of physical evidence locations and operations

Investigator:

Date/time: (Attach a copy of the physical evidence log form)

Site orientation

Incident investigation photograph log						
Photographer: Camera type: Lighting type: Film roll number:			Location: Date: Time: Weather (direct sun, overcast, etc.):			
Photo number	Scene/Subject	Date	Time	Lens focal length	Direction of camera	Distance from subject

Incident investigation sketch of photograph locations and orientations

Investigator:

Date/time: (Attach a copy of the photograph log sheet)

Site orientation

Incident investigation physical evidence log

Date/Time of interview	Location	Interviewer	Witness	Job/Position	Notes

Incident investigation witness interview
(Adapt to suit your needs)

Witness:	Interviewer(s):	Page _____ of _____
		Date:
Position/Title:	Position/Title(s)	Time:
		Place:

Describe what you saw/did/heard before the incident (attach/staple more sheets as needed).

Describe what you saw/did/heard during the incident.

Describe what you saw/did/heard after the incident.

Incident investigation witness interview

(Adapt to suit your needs)

Witness:	Interviewer(s):	Page _____ of _____
		Date:
Position/Title:	Position/Title(s)	Time:
		Place:

List questions that deal with the statement, knowledge of the hazards, job procedures, training, supervision, etc.

List questions that are not covered by other questions you have asked.

Ask witness how they think the incident may have been prevented.

Appendix 2:
Equipment and resource checklist

Equipment and tools

Your employer is responsible for providing the equipment and tools you need. Examples:

- Incident investigation forms (i.e., witness interview form, photographic log, map form, etc.)
- Adhesive labels
- Clipboards
- Conference or meeting room and resources for interviews
- Flashlight
- Machinery and equipment lockout supplies
- Measuring tape or ruler
- Monitoring equipment (e.g., noise meters, etc.)
- Office support services for transcribing statements, filing, etc.
- Pens, pencils, chalk, felt markers and paper
- Personal protective clothing and equipment
- Plastic storage bags and containers for evidence (various sizes)
- Sampling containers for collecting monitoring samples and other physical evidence
- Security barrier tapes and marker poles to secure the site
- Still/video camera and related equipment
- Tape recorder

Resources

This publication is not a stand-alone guide. You may find additional publications and the resources listed below useful.

OHS Division and WorkSafe publications and government legislation

Visit saskatchewan.ca/work for online documents, publications and legislation. Copies of the SEA and regulations are available online and from the Queen's Printer. Visit worksafesask.ca for useful publications, resources and training information.

Websites

Source	Website
Canadian Centre for Occupational Health and Safety (CCOHS)	www.ccohs.ca
Canadian Manufacturers and Exporters (formerly the Canadian Manufacturers Association)	www.cme-mec.ca
CSA Group (formerly the Canadian Standards Association)	www.csagroup.org
Det Norske Veritas (risk management services)	www.dnvusa.com
International Organization for Standardization (ISO)	www.iso.org
Manitoba Workplace Safety and Health	www.gov.mb.ca
National Fire Protection Association (NFPA)	www.nfpa.org
National Institute for Occupational Safety and Health (NIOSH)	www.cdc.gov/niosh
National Safety Council (US)	www.nsc.org
Queen's Printer	www.saskatchewan.ca
Saskatchewan Workers' Compensation Board	www.wcbsask.com
US Department of Labour, Occupational Safety and Health Administration (OHSA)	www.osha.gov
WorkSafeBC	www.worksafebc.com
LRWS Occupational Health and Safety Division	www.saskatchewan.ca/work
WorkSafe Saskatchewan	www.worksafesask.ca

Labour Relations and Workplace Safety

Occupational Health and Safety Division
300 - 1870 Albert Street
Regina SK S4P 4W1
Phone 306.787.4496
Toll free 1.800.567.7233

Online **www.**saskatchewan.ca

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