

Health And Safety Manual

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1.0

Introduction

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1.1 Health & Safety Policy

Techtric Engineering Ltd. recognizes that one of its primary duties is to ensure the health and safety of all its employees. **Techtric Engineering Ltd.** accepts the responsibility for providing a safe and healthy workplace, both at our own facility and when employees work in or around other facilities. At **Techtric Engineering Ltd.** we are striving for the elimination of any and all occupational related injuries and illnesses.

Health hazards and personal injuries are preventable through worker awareness, training and safe work practices. All employees must accept responsibility to comply with such measures if they are to attain the quality of working life they are entitled to.

The objective of a health and safety program is to implement measures to reduce and/or eliminate potential health hazards and personal injury in the workplace. A health and safety program is not initiated to lay blame or fault should an incident occur.

The ongoing active involvement and support of both employees and management, in the workplace health and safety program, is essential for its success.

In order for our work environment to be safe, each of us must do our part. The company can help to create a safe working environment by doing such things as 1) providing adequate training, and 2) encouraging safety awareness. However, each of us, employees and management alike, as individuals, must actively take safety seriously each and every day for our work environment to be truly safe.

1.2 Objectives

The general health and safety policy statement is intended to provide guidelines to:

- Reduce and/or eliminate health, safety and environmental hazards.
- Provide a safe and healthy work environment, no matter the location.
- Develop adequate training programs (internal and/or external) and establish appropriate procedures and measures to prevent personal injuries and eliminate health hazards.
- Comply with all current and proposed legislation governing occupational health and safety and the environment.

2.0

DUTIES AND RESPONSIBILITIES

UNDER THE

**OCCUPATIONAL HEALTH
AND SAFETY ACT**

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2.1 General Responsibilities

The Occupational Health and Safety Act (O.H.S.A.) of Ontario states that every Officer and Director of a corporation must take all reasonable care to ensure that the corporation complies with the Act and Regulations as well as with any orders and requirements of the Ministry of Labour (M.O.L.). This section (Part III) of the O.H.S.A. also applies to all managers, supervisors, workers and Engineers of **Techtric Engineering Ltd.**

Management personnel are responsible for conveying Health and Safety policies and procedures to the Supervisors/Forepersons and their subordinate employees to ensure that a healthy and safe workplace is maintained by;

- Familiarizing themselves with the Health and Safety Internal Responsibility System, safe work procedures and ensuring their effective application and compliance.
- Ensuring all accidents and/or incidents are investigated promptly, all required reports completed and corrective actions initiated.
- Ensuring all equipment and protective devices supplied are maintained to safe standards.
- Ensuring that all employees comply with regulatory requirements pertaining to the wearing of safety equipment provided.
- Ensuring that all employees are encouraged and able to participate in workplace health and safety training and education programs.

2.2 Employer

The O.H.S.A. places duties and responsibilities on each and every worker of **Techtric Engineering Ltd.** Under the Act we are obliged to:

- Instruct, inform and supervise each and every worker in order to protect their health and safety.
- Appoint competent persons as supervisors. "Competent Person" being he or she must:
 - Be qualified through knowledge, training and experience to organize work and its performance.
 - Be familiar with the Act and the Regulations that apply to the work being performed in the workplace.
 - Be knowledgeable about any actual or potential danger to health and safety in the

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workplace.

- Assist in any medical emergency by providing information, including confidential business information, to a qualified medical practitioner who may request the information in order to treat a person.
- Inform all workers or persons in authority over workers about any actual or potential hazards in the workplace. Train workers in the handling, storage, use, disposal and transport of any equipment, substance, tools, material, etc. exhibiting such hazards.
- Post, in each workplace, a copy of the O.H.S.A. as well as other explanatory material prepared by the M.O.L. that outlines the rights, responsibilities and duties of workers.
- Keep, maintain and make available to workers prescribed records of worker exposure to biological, chemical or physical agents.
- Establish and maintain an occupational health service for workers.
- Provide prescribed medical surveillance programs and safety related medical examinations and tests, for the benefit of workers.
- Ensure, where prescribed that only workers who have taken tests or x-rays and who have been found physically fit to work, be allowed to work or be in a workplace.
- Where prescribed, provide workers with written instructions on the measures and procedures to be taken for their protection.
- Carry out any prescribed training programs for workers and/or supervisors.

In addition, **Techtric Engineering Ltd.**, is obliged to notify certain people where:

- A person or persons have been critically injured or killed on the job. In this case, a representative of **Techtric Engineering Ltd.** must immediately notify the M.O.L. and any appropriate union(s). This notification must be direct, either by telephone or facsimile. A representative of **Techtric Engineering Ltd.** must also notify, in writing, a director of the M.O.L. within 48 hours.
- If, as a result of an accident, explosion or fire, a worker or workers are disabled or require medical attention - in these circumstances, **Techtric Engineering Ltd.** must notify, in writing, a director of the M.O.L. and appropriate union(s) within four days of the accident.
- The employer must keep records of basic health and safety awareness training provided to workers and supervisors.

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2.3 *Supervisor / Foreperson*

A supervisor/foreperson is a person who has charge of a workplace or authority over any worker.

Supervisors must:

- Ensure that worker(s) comply with the O.H.S.A. and Regulations.
- Ensure that all equipment, protective devices or clothing required by **Techtric Engineering Ltd.** is used or worn by the worker(s) and maintained to safe standard.
- Advise worker(s) of any potential or actual health or safety hazards known by the supervisor.
- Where prescribed, provide worker(s) with written instructions about the measures and procedures to be taken for the protection of the worker(s), and take every precaution reasonable in the circumstances for the protection of workers.
- Ensure he/she is thoroughly familiar with safe work methods for all jobs performed under his/her supervision.
- Develop and maintain a positive health and safety attitude among his/her employees.
- Promptly initiate appropriate action to correct any unsafe situation, condition, tool, equipment, process or practice that may be brought to his/her attention. Initiate all follow-up required to ensure completion.
- Immediately investigate all medical aid, lost time accidents and/or incidents.
- Instruct new, transferred or loaned employees with respect to Safe Working Procedures, including the issuing of personal protective equipment (P.P.E.) before employee begins the job.

Complete a basic health and safety awareness training course within one week of performing work as a supervisor.

Also require training topics on accident investigation, due diligence and bill C-45 Emergency response, supervisor H&S awareness, handling workplace violence and harassment for managers: bill-168.

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2.4 Worker

A worker is a person who is paid to perform work or supply services. Under the O.H.S.A. workers must:

- Work in compliance with the provisions of the O.H.S.A. and the Regulations.
- Use or wear the equipment, protective devices, or clothing that his/her employer requires to be used or worn.
- Report to his/her employer or supervisor the absence of or defect in any equipment or protective device of which he/she is aware and which may endanger him/herself or another worker.
- Report to his/her employer or supervisor any contravention of this Act or the Regulations or the existence of any hazard of which he/she knows; and
- Where so prescribed, have, at the expense of the employer, such medical examinations, tests or x-rays, at such time or times and at such place or places as prescribed.

No Worker Shall:

- Remove or make ineffective any protective device required by the Regulations or by his/her employer, without providing an adequate temporary protective device and when the need for removing or making ineffective the protective device has ceased, the protective device shall be replaced immediately.
- Use or operate any equipment, machine, device, or thing or work in a manner that may endanger him/herself or any other worker.
- Engage in any prank, contest, feat of strength, unnecessary running, or rough and boisterous conduct.

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Subcontractor Management Plan

- **Techtric confirms subcontractors have valid workers compensation coverage.**
- **HSE statistics are reviewed when selecting subcontractors. HSE statistics are obtained and analysed to ensure that only safe subcontractors are hired.**
- **HSE programs and training documentation are reviewed when selecting subcontractors.**
- **The procedures to be followed in the event that a subcontractor does not have a health and safety manual is that said subcontractor will follow Techtric's health and safety manual.**
- **Techtric is accountable for communicating the client's drug and alcohol policy to subcontractors.**
- **Subcontractors are included in pre-job meeting and hazard assessments.**
- **Techtric must report all incidents involving subcontractors to the hiring client, and participate, in the subcontractor's incident investigations.**
- **Post-job performance reviews are conducted for subcontractors by Techtric.**
- **Site orientation is provided to subcontractors.**

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Policies: 2-4A Disciplinary Action

Policy Description:

It is **Techtric Engineering Ltd.**'s Expectation that all employees and subcontractors will conduct themselves according to generally accepted standards of conduct and performance as described in the **Techtric Engineering Ltd Health and Safety Manual Section 2.4**. When employees of **Techtric Engineering Ltd** and Subcontractors hence with do not meet these standards, it is the President's responsibility to act in a timely manner to initiate a program of disciplinary steps to address the problem. Examples of situations which may require the President to take immediate action include, but are not limited to standards set in the **Techtric Engineering Ltd Health and Safety Manual Section 2.4**.

This Policy presents the basic principles and procedures of a system of progressive discipline which is intended to ensure that all employees of Techtric Engineering Ltd are treated consistently and fairly as possible. The disciplinary program has four major purposes:

- 1) **to ensure that the employee knows what the problem is;**
- 2) **to communicate what the President's expectations are in order for the employee to correct the problem;**
- 3) **to provide appropriate penalties for improper work conduct;**
- 4) **to provide a record of corrective action taken by the President in such problem situations.**

Progressive Discipline:

Progressive discipline is a formal process which includes several steps or levels of discipline, each of which provides the employee or sub contractor of **Techtric Engineering Ltd** with the opportunity to correct the problem or inadequacy.

A) Management Preliminary Actions. Prior to moving to formal discipline management should do the following:

1. **Do a thorough fact-finding** which includes the collection of all information and applicable records.
2. **Hold a discussion in private** with the employee or subcontractor of **Techtric Engineering Ltd**. During this Discussion the President should state the problem clearly and allow the employee or subcontractor of **Techtric Engineering Ltd**. to respond.

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3. **Follow up with the employee or subcontractor of Techtric Engineering Ltd.** after the meeting and after all the information has been gathered, to report the findings. If the president intends to move to formal discipline, the employee or subcontractor of **Techtric Engineering Ltd.** should be told at the conclusion of the follow-up meeting or as soon after as possible. It should be made clear to the employee or subcontractor of **Techtric Engineering Ltd.** which level or step of discipline process is being applied.
4. **Provide a follow up letter** as soon after the meeting as possible. The letter should include the date and time of the follow-up meeting, a brief statement of the problem, management's expectations, and the conclusion reached in the meeting. The stage of discipline must be clearly noted and a statement made that lack of improvement will result in further discipline.

B) The Steps of Progressive Discipline. There are four steps in the progressive discipline process; however, in cases of misconduct or repeated infractions, the process may be shortened and the President may move directly to a later step in the process, including termination.

1. **Verbal Warning:** Verbal Warnings are appropriate for minor first offences. It is important that no more than two Verbal Warnings are issued for the same type of offense.
The President should have a full discussion with the employee or subcontractor of **Techtric Engineering Ltd.** before giving the warning to ensure that the employee or subcontractor of **Techtric Engineering Ltd.** has the opportunity to respond or give additional information. If the president believes that an oral warning is appropriate, it should be made clear to the employee or subcontractor of **Techtric Engineering Ltd.** that the verbal warning is the first step in the progressive discipline process. The verbal warning should be documented for **Techtric Engineering Ltd.** records and a note summarizing the warning is to be given to the employee or subcontractor of **Techtric Engineering Ltd.** The record and note should record the date, time and reason for the warning.
The verbal warning remains in effect for no less than 18 months.

2. **Written Warning.** After an employee or subcontractor of **Techtric Engineering Ltd.** has received no less than two verbal warnings, a subsequent offence should be addressed by a written reprimand as appropriate. The President must review the draft of the written reprimand. The President and employee or subcontractors of Techtric Engineering Ltd. first meet to discuss the problem. In the discussion, the President must review the incident or performance problem of which requires the reprimand and the President and employee or subcontractor of **Techtric Engineering Ltd.** should exchange ideas and information regarding solution (s) to the problem. The written reprimand should be given to the employee or subcontractor of **Techtric Engineering Ltd.** directly following the discussion, with copies placed in the employee or subcontractor of **Techtric Engineering Ltd.'s** personal record.

The Written Warning Should:

- Be identified as a disciplinary warning
- Describe as specifically as possible the situation which prompted the warning; including day, date, time, location and what was said and heard;
- Indicate why the behavior or performance is unacceptable;
- Review the decisions that were reached during the discussion regarding how the employee or subcontractor of **Techtric Engineering Ltd.** would correct the problem;
- State that if the behavior continues or other problems occur, additional corrective measures may be taken, which may result in the termination of the employee or subcontractor of **Techtric Engineering Ltd.** employment.

If the Written Warning is given without a prior discussion regarding the incident between the

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President and employee or subcontractor of **Techtric Engineering Ltd.** the President should discuss the matter with the employee or subcontractor of **Techtric Engineering Ltd.** when giving the employee or subcontractor of **Techtric Engineering Ltd.** the warning.

Written warnings are retained in the employees or subcontractor of **Techtric Engineering Ltd.** formal record for 18 months. No more than two written warnings will be issued for the same offense.

3. **Suspension.** Suspension is the third step of the disciplinary procedure. It is intended to indicate to the employee or subcontractor of **Techtric Engineering Ltd.** the seriousness of the infraction and the seriousness of the infraction and that the employee or subcontractor of **Techtric Engineering Ltd.** can reasonably expect that the next step is Termination of employment.

Before determining if an employee or subcontractor of **Techtric Engineering Ltd.** should be suspended, the President must meet with the employee to discuss the incident or problem. The employee or subcontractor of **Techtric Engineering Ltd.** should be notified in writing of the suspension as soon as possible. The letter should outline the reason for suspension and the dates of the suspension. Suspensions are normally for one (1) to three (3) consecutive work days and the dates are to be determined by the President. Longer suspensions because of severe infractions may be given and scheduled at the convenience of management. The employee or subcontractor of **Techtric Engineering Ltd.** should be warned that continuation of behavior may result in termination of employment.

Suspension is with out pay.

4. **Termination.** Termination of employment is the culmination of progressive discipline process or the penalty for very serious offences. When ever possible, the President should conduct a pre-termination meeting. The purpose of this meeting is to review with the employee or subcontractor of **Techtric Engineering Ltd.** the past record and any new circumstances leading to the termination of the employee or subcontractor of **Techtric Engineering Ltd.**

2.5 Engineers

Engineers of **Techtric Engineering Ltd.** are considered to be in violation of the O.H.S.A. if they negligently or incompetently give advice or a certification required under the Act and, as a result, worker(s) are endangered.

3.0

ADMINISTRATION

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3.1 Requirements Under The O.H.S.A.

Techtric Engineering Ltd. is not required to have a *Joint Health and Safety Committee* or a *Health and Safety Representative* under Part II, Subsection 9(3) of the Act, as:

- Establishments where fewer than 20 workers are regularly employed.
- Construction projects at which work is expected to last less than three months.
- Specifically exempted workplaces, employees or classes thereof that may be prescribed at a later date.

3.2 Health and Safety Inspections and Audits

Even though there is no requirement for a *Health and Safety Committee* or a *Health and safety Representative* at **Techtric Engineering Ltd.** regular inspections and audits are required and must include observation/consideration of the facility or workplace, equipment and materials, work activities, work procedures, personal protective equipment, housekeeping and emergency facilities/measures.

By definition, an *inspection* process is a method by which we ensure that what ought to be in place is in place. In other words - do work conditions, activities, and procedures meet the required operational standard and is that standard adequate for protecting the health and safety of the workers?

In addition to identifying defective items, the *inspection* should be concerned with identifying and correcting the reason or cause for the specific item particularly when the same defective items occur repeatedly.

While the primary purpose of *inspections* and *audits* is the same, the *audit* should be considered as a quality control check of regular *inspections*.

Inspections and *audits* are carried out to:

- ◆ identify and report existing or potential hazards in the workplace.
- ◆ ensure that protective measures adopted are effective and in use.
- ◆ initiate and follow-up on corrective action(s).

As *inspections* and *audits* are preventative activities that readily demonstrate to employees that management is committed to protecting the health and safety of employees. The supervisor/foreperson has the responsibility to ensure that work site *inspections* and *audits* are carried out regularly and effectively. The supervisor/foreperson's role in initiating and following

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through on corrective action(s) is critical to an effective *inspection* process.

Since meeting this responsibility will require the personal involvement of supervisors/forepersons, the effective supervisor/foreperson will involve other employees when appropriate.

Planning *inspections* will obviously require basic knowledge of the operation and relevant standards/Regulations. Equipment manuals, policies, procedures should provide appropriate references. The basic knowledge generally available in the workplace amongst managers, supervisors/forepersons and skilled employees also provides assistance.

Most planned *inspections* will use an appropriate checklist (**Appendix A**). Checklists are useful devices to ensure that no items are overlooked in an *inspection*. While many ready made checklists are available, checklists made up to adapt to specific requirements are best.

Recommended Inspection Practices for Supervisors/Forepersons

It is recommended that supervisors/forepersons plan and standardize regular inspections for their workplaces (job sites).

- ◆ Daily workplace inspections.
- ◆ Equipment pre-operation checks.
- ◆ Mobile equipment pre-operation checks.
- ◆ Weekly emergency equipment checks.

Each of the above should be itemized on appropriate checklists with critical items highlighted. Critical items are those components of machinery and/or equipment, materials, and/or areas that have the potential to result in serious injury or problems or loss when worn, damaged, abused, misused, or improperly applied. Critical safe operating procedures and work practices should be an integral part of these inspections.

It is recommended that the supervisor/foreperson involve appropriate employees in developing the regular inspections. Involving such employees in performing these regular inspections is only practical when the inspection can be part of the employee's normal job function. The supervisor must follow through to ensure these inspections are conducted.

Inspections and Corrective Actions

Inspections serve a useful purpose only if corrective actions are implemented. Causes for repeated occurrences must be corrected. If an identified hazard poses an immediate threat, preventative or corrective measures must be taken at once. Set appropriate schedules for correction of less severe hazards that require lead time before such corrections can be made.

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3.3 Right To Refuse Work

For use in the event an employee or group of employees exercise their right to refuse work under *Part V, Section 43* of the O.H.S.A.

Purpose

- ◆ To ensure that worker(s) comply with the Act and Regulations.
- ◆ To ensure that all equipment, protective devices or clothing required by **Techtric Engineering Ltd.** is used or worn by the worker(s) and maintained to a safe standard.

The right to refuse may be exercised by a worker who *has reason to believe* that:

- ◆ any machine, equipment etc., that he/she is to work on is likely to endanger him/herself or another worker or workers, or
- ◆ the physical condition of the workplace is likely endanger the worker(s), or
- ◆ any machine or equipment that he/she is to use, or place he/she is to work, is in contravention of the Act and/or Regulations, and therefore likely to endanger him/herself or another worker or workers.

Procedure

1. The worker promptly reports the circumstances to his/her supervisor/foreperson.
2. Supervisor/foreperson will be responsible for completing the report of the incident and sending same to management.
3. While being investigated, the worker remains in a safe place or is assigned to alternative work in accordance with the O.H.S.A.
4. The supervisor/foreperson investigates promptly in the presence of the worker(s) or selected representative.

3.4 Management Of or On Construction Projects

In the course of normal business at **Techtric Engineering Ltd.** it is routine to have ongoing construction projects at existing facilities. The O.H.S.A. imposes a duty on **Techtric Engineering Ltd.** to take reasonable precautions for the protection of workers at all locations, not only its own workers, but those employed as sub-contractors, or employees of other contractors and or companies at each and every workplace.

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A. Definitions

The O.H.S.A. provides the following definitions:

- *Construction* includes any erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land clearing, earth moving, grading, excavating, trenching, digging, boring, drilling, blasting, or concreting, installation of any machinery or plant, and any work or undertaking in connection with a project.
 - *Project* refers to a construction project, whether public or private, including:
 - the construction of a building, structure, industrial establishment, mining plant, shaft, tunnel, caisson, trench/excavation, highway, railway, street, runway, parking lot, cofferdam, conduit, sewer, watermain, service connection, telegraph, telephone or electrical cable, pipe line, duct or well, or any combination thereof;
 - mining developments;
 - the moving of a building or structure; and
 - any work or undertaking, or any lands or appurtenances used in connection with construction.
 - *Owner* includes a trustee, receiver, mortgagee in possession, tenant, lessee, or occupier of any lands or premises used or to be used as a workplace, and a person who acts for or on behalf of an owner as his agent or delegate. **Techtric Engineering Ltd.**, in all cases, if not the constructor, will be the owner or project owner.
 - A *Constructor* means a person who undertakes a project for an owner and includes an owner who undertakes all or part of a project by him or herself or by more than one employer. A *Person* includes an individual or a corporation. Usually the Constructor is the general contractor or an owner acting as his or her own general contractor.
- Note: The Director of the Construction Health and Safety Program of the Ministry of Labour may designate any part of a construction project as an individual project for the purposes of the Act and Regulations. In doing this, the person or corporation who undertakes the work on that part of the project is designated the constructor. In effect, this could designate sub-contractors as constructors.
- An *Employer* means a person who employs one or more workers or contracts for the services of one or more workers and includes a contractor or sub-contractor who performs work or supplies services and a contractor or sub-contractor who undertakes with an owner, constructor, contractor or sub-contractor to perform work or supply services.

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- A *Contractor* refers to an individual or firm engaged by **Techtric Engineering Ltd.** on a contract, sub-contract, or consulting basis, to do work or supply services on behalf of **Techtric Engineering Ltd.** The term *Contractor* is not specifically defined under the O.H.S.A., rather *Employer* is defined and this definition makes reference to contractor or sub-contractor.

B. Legal Health and Safety Requirements

• **General**

The O.H.S.A. clearly states that constructors, upon undertaking a project, will ensure that:

- measures and procedures prescribed by the Act and the Regulations are carried out on the project;
- all employees and workers performing work on the project comply with the Act and Regulations; and
- the health and safety of workers on the project is protected.

• **Duties of Suppliers**

Every person who supplies workplace equipment of any kind under a rental, leasing or similar arrangement must ensure that the equipment complies with the Act and Regulations and is in good condition. The supplier must also maintain the equipment in good condition if this is his or her responsibility under the rental or leasing agreement.

• **Duty To Register**

In order to alert the M.O.L. of a project, every constructor engaged in construction, who is an employer of workers must register with the Director of the Construction Health and Safety Program within 30 days of first employing any workers. The Regulations set out what information the constructor/employer must provide to the director and require written notification within 30 days of any change to these particulars.

• **Duty To Give Notice**

Under the Construction Regulation, a constructor must post the following at each workplace:

- a notice with the constructor's name, address and telephone number of their head office or principle place of business in the province of Ontario, or the business name if it is carried out under another name than their own; and
- a notice with the address and telephone number of the head office and nearest district office of the Construction Health and Safety Program of the M.O.L.

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- **Duty To Appoint A Supervisor**

If the construction project is one for which a *Notice of Project* is required and on which five or more workers are working at the same time, the constructor must appoint a supervisor who must supervise the work at all times, or have an assistant, who is a competent person, do so personally.

- **Duty To Provide Written Notice Of Project**

The construction Regulations require that a *Notice of Project* be filed with the M.O.L. when:

- the total cost of labour and materials including labour and materials for work carried out by subcontractors exceeds \$50,000;
- the work is a new erection, alteration or demolition of a building more than two stories or 7.5 metres in height;
- the work is the erection, alteration or structural repair of a bridge, earth-retaining structure or water containing structure more than 3 metres in height or a silo, chimney, or similar structure more than 7.5 metres in height;
- work in compressed air is being carried out;
- a tunnel, caisson, cofferdam or well which a person may be required to enter or may enter for any purpose is to be constructed;
- a trench more than 30 metres long or 1.2 metres deep and over 30 metres long and into which a worker is required to enter or may be entered is to be excavated; and
- all or part of a permanent or temporary work site required by this Regulation to be designed by a Professional Engineer.

The *Notice of Project* must be posted or be made available before any work can commence. The only exception to this is if the work must be done immediately to prevent personal injury or property damage. In this case, notice must be given to the Director of the Construction Health and Safety Program as soon as practicable.

C. **Techtric Engineering Ltd. Health and Safety Requirements**

Techtric Engineering Ltd. is required to meet all health and Safety responsibilities when dealing with safety on construction projects at established facilities or our own facility. Mandatory requirements are listed below.

- Adequate barriers are in place to protect our own workers, sub-contractors and others from

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hazards at the workplace, be it at our facility or on a construction project.

Adequate barriers are methods of minimizing or controlling hazards, such as work design or warning devices and procedures.

- All Health and Safety stated in tender documents for projects are reviewed prior to the start of work.

Techtric Engineering Ltd. takes safety seriously and as such all requirements for Health and Safety outlined in Tender Documents for any project would constitute the minimum standard for workers on that project. Recommended practices are outlined in the following section.

- Corrective action is taken if unsafe work is observed up to and including worker discipline.

Safety is a condition of employment. Management of **Techtric Engineering Ltd.** will determine which corrective actions are required and implemented. All employees of **Techtric Engineering Ltd.** are responsible for maintaining a safe work place.

- All work will be stopped in life threatening situations.

An employee of **Techtric Engineering Ltd.** who observes any worker in a life-threatening situation should report it to their supervisor/foreperson immediately. Stopping work immediately takes precedence over any other concerns.

- Inspections and Audits shall be conducted to ensure all workers are following the requirements of the O.H.S.A. and Regulations or any other applicable federal, provincial, or municipal legislation.

The workplace should be inspected by the supervisor/foreperson or selected competent worker regularly and any and all deficiencies identified and corrective actions initiated.

D. Recommended Health and Safety Practices

While not mandatory, these practices are recommended. Not all recommended practices are applicable or intended for each project.

Pre-job Practices

- Hazard analysis, going beyond the legal requirement to assess the presence for any "Designated Substances" on a project. This should be done for all projects.
- Where high risks may exist on a contract, these risks should be analyzed to determine ways to reduce them.
- Where information or assistance is required to determine hazards, contact any and all sources

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as required.

Work Specifications

- Review safety requirements stated on each contract.
- Safety and hazard analyses should be verbally discussed prior to start of work.
- **Techtric Engineering Ltd.** personnel should visit the project site or attend pre-job meetings to discuss health and safety requirements.
- **Techtric Engineering Ltd.** should acknowledge the safety requirements of each project in writing to the constructor. In addition, specific safety requirements and safety equipment should be identified.
- In response to all bid requests, include a copy of specific safety practices to be followed or a copy of **Techtric Engineering Ltd.**'s general safety practices.
- On construction projects, if there is uncertainty, obtain advice as to who should be designated the constructor.

Contract Managers

- These personnel should know their roles and responsibilities, typical safety hazards and precautionary measures, as well as how to respond when safety requirements of a job are not followed.
- Wherever possible contact and deal with the constructor's safety representative. Establish a direct line of communication to avoid misinterpretations when dealing with potential site safety deficiencies or concerns.
- Resolution of site safety deficiencies may require notification in writing to the constructor's safety representative, follow-up meetings with the constructors safety representative and/or M.O.L. inspectors.
- Maintain ongoing notes concerning safety performance throughout the duration of the project.

Site Orientation

- Where appropriate, attend site orientation meetings and review available site plans.

Communications

- Meetings held with owner and/or constructor representatives should be fully utilized to

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discuss health and safety matters, when necessary.

Post Job Practices

Records of health and safety performance of workers should be kept for each project for consideration on future work.

In certain work locations, **Techtric Engineering Ltd.** or *Employer* may be designated the *Constructor*. Under these circumstances, additional responsibilities have been assigned to ensure that:

- the measures and procedures in the O.H.S.A. are carried out.
- every employer or worker on the project complies with the O.H.S.A. and Regulations.
- the health and safety of workers on the project is protected.
- prospective contractors and subcontractors on a project are given a written copy of any designated substances present at the site.
- a constructor may also be required to give written notice to a Director of the M.O.L. containing prescribed information before work begins on a project.
- Engineers of Techtric Engineering Ltd. are considered to be in violation of the Act if they negligently or incompetently give advice or a certification required under the Act and, as a result, worker(s) are endangered.

3.5 Purchasing

Part IV, Section 37(1) of the O.H.S.A. and WHMIS Regulations states:

An Employer,

- a) shall ensure that all hazardous materials present in the workplace are identified in the prescribed manner.
- b) shall obtain or prepare, as may be prescribed, an unexpired material safety data sheet for all hazardous materials present in the workplace.
- c) shall ensure that the identification required by clause a) and material safety data sheets required by clause b) are available in English and such other languages as may be prescribed.

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Procedure

1. The purchaser, when preparing a purchase requisition, shall ensure that a current Material Safety Data Sheet (M.S.D.S.) is on file for the product ordered. If not on file, the purchaser shall indicate on the purchase requisition that an M.S.D.S. is required.
2. The onus is on the individual requesting the purchase to ensure that an up-to-date M.S.D.S. is on file.
3. M.S.D.S.s have a three (3) year life. It should be noted that an M.S.D.S. must be received before or with the shipment of the product.

If an M.S.D.S. is not received with the shipment, or there is not one on file, the purchaser shall contact the supplier immediately to obtain them.

4. Add newly acquired M.S.D.S. information (product name and issue date) to the M.S.D.S. Index Manual and forward copies to the worksite manuals.

3.6 Training

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Training

Techtric Engineering LTD. basic occupational health and safety awareness training program for workers include instruction on the following.

- **The duties and right of workers under the act**
- **The duties of employers and supervisors under the act**
- **The role of health and safety representatives and joint health and safety committees under the act**
- **The role of the ministry, the workplace safety and insurance board and entities designated under the act**
- **Common workplace hazards**
- **(WHMIS)**

Techtric Engineering LTD. Basic occupational health and safety awareness training program for supervisors include instruction on the following.

- **The duties and right of workers under the act**
- **The duties of employers and supervisors under the act**
- **The role of the health and safety representatives and joint health and safety committees under the act**
- **The role of the ministry, the workplace safety and insurance board and entities designated under section 22.5 of the act**
- **How to recognize, assess and control workplace hazards, and evaluate those controls**
- **Sources of information on occupational health and safety**

Ammonia Awareness

- **The widespread use of ammonia on farms and in industrial and commercial locations also means that exposure can occur from an accidental release.**
- **Ammonia is a colorless, highly irritating gas with a pungent, suffocating odor.**
- **Exposure to high concentrations of ammonia in air causes immediate burning of the nose, throat and respiratory tract.**
- **Contact with concentrated ammonia solutions such as industrial cleaners**

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- may cause corrosive injury including skin burns, permanent eye damage or blindness.
- Employees will use impervious clothing gloves and face shields if there is a possibility of skin contact with ammonia.
- Employees will be aware of provisions of site specific emergency plans.

Hazard identification and risk assessment

- All Techtrics employees and subcontractors are trained in identifying hazards.
- A hazard is any source of potential damage, harm or adverse health effects on something or someone under certain conditions at work.
- Risk is the chance or probability that a person will be harmed or experience an adverse health effect if exposed to a hazard.
- Risk assessment is the process where you:
 - Identify hazards
 - Analyse or evaluate the risk associated with that hazard, and
 - Determine appropriate ways to eliminate or control the hazard.
- Hazards are classified and ranked according to risk, controls are implemented to reduce the risk of harm, employees participate in training on hazard identification and risk assessment in our online program
- The formal hazard identification and risk assessment process must be when exposed to hazards in the workplace.
- Our hazard assessments are performed before work for all tasks and updated daily and/or whenever changes occur.

Lockout Tagout

- All Techtrics employees are provided lockout tagout training.
- All workers involved in maintenance activity must place their own lock and tag on each energy control point.
- A state of zero energy must be verified after lockout device is installed.
- Once maintenance activities are complete a supervisor must ensure that personnel are out of harm's way, each worker who affixed a lock to an energy control point must remove his own lock, and all guards have been replaced, area cleared of all hazards. Equipment start up may occur after all of the above are complete.

Temporary Work Platforms

- Load limits for temporary work platforms must not be exceeded.
- Temporary work platforms are inspected before every use and that they are not used if defects are found.

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- **Operators of elevating work platforms are provided full training.**

Techtric Engineering Ltd. is committed to the Health and safety of all employees in the

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To this end we believe an integral part of this commitment is *training*. In order to facilitate this end, training to all employees is essential.

The training program for employees will include, but not be limited to:

- Employee Orientation
- Workplace Hazardous Materials Information System
- Safe Use And Handling Of Hazardous Materials
- Initial Job Training
- Personal Protective Equipment
- Policy, Procedures and Rules, with updates to employees of changes
- Special Procedures
- Hazard Recognition
- First Aid (per WCB Regulation)
- Accident/Incident Investigation

The training of all employees will be documented as to what and when, including updates and refresher sessions. Evaluation of the effectiveness and requirements for changes of training programs will include:

- ◆ Usage (compliance when working)
- ◆ Personal Surveys (interviews with employees)
- ◆ Performance Appraisals

It is the belief at **Techtric Engineering Ltd.** that all employees must work together to achieve an effective health and safety program resulting in a safe workplace.

3.7 Government Enforcement Practices

Government inspectors are appointed to inspect workplaces to ensure that companies operate in compliance with the Health and Safety Act and the regulations. Inspectors have the right to enter the workplace without advance notice, to ask/obtain any records pertaining to health and safety, and to request/receive information from employees within the workplace.

Government inspectors carry suitable personal identification to certify that they are authorized to conduct workplace inspections. It is policy to facilitate any inspections under the authority of the O.H.S.A.

A management representative has the right to accompany an inspector while in or on **Techtric Engineering Ltd.** premises or job sites. However, it is important to understand that the inspector has the right to visit any part of the workplace and may obtain information from any person in the

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workforce.

Special provisions apply to potential confidential or proprietary information. It is recommended that a supervisor/foreperson participate in any inspections involving their worksites. View the government inspector as an objective observer and resource whose primary objective is to ensure that the health and safety of workers is protected. A positive attitude towards inspectors shows that **Techtric Engineering Ltd.** is a responsible employer. It is our experience that a positive rapport with inspectors ensures that compliance issues will be resolved in a cooperative rather than an adversarial manner.

Following an inspection, the inspector will usually leave a written report. If, in the opinion of the inspector, a deficiency was found during the inspection, an order to correct the deficiency will be given. For serious deficiencies, a stop work order may be issued. A stop work order is to be obeyed at once. It is important to know that stop work orders stand until removed, subject to correction or successful appeal. For other orders, the inspector will generally specify a time frame for corrective measures to be undertaken and completed.

If you are asked to sign an inspection report, read the report thoroughly to ensure you understand what the order(s) means. Obtain clarification if you are not sure why the order was issued. If you are in disagreement with an order, seek assistance from supervisor/foreperson and/or management. However, do not argue about orders. Signing the report is primarily an indication that you have received the report. The inspector has the right to give an order if they feel that we are not in compliance with the Act or Regulations. Your signature does not imply agreement with the report or any order.

3.8 Employee Orientation

This program is designed to provide new employees with a general outline of our Health and Safety Program, but in no way replaces a thorough workplace orientation. The workplace supervisor/foreperson has specific responsibilities with regard to employee health and safety. The employee orientation is the start of these responsibilities. The supervisor/foreperson must ensure that the employee:

- works in a manner and with protective devices, measures and procedures required by company policy and/or legislative requirements.
- uses or wears the equipment, protective devices or clothing that the employer requires to be used or worn.
- is advised (made aware) of the existence of any potential or actual danger to health and safety of the worker.
- is provided with instructions in the measures and procedures to be taken for the protection of the worker.
- takes every precaution reasonable in the circumstances for the protection of the worker.

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In addition, this is the supervisor/forepersons opportunity to ensure that the employee understands his/her responsibilities under the Act:

- to adhere to measures, procedures and instructions provided by or on behalf of **Techtric Engineering Ltd.**
- to report any unsafe conditions, defective equipment, machinery, protective devices, unsafe acts and any personal injury.

Method

To meet the responsibilities for employee orientation, we recommend that new employees be introduced with the following:

- ◆ Any specific training/procedures (including WHMIS).
- ◆ Specific emergency procedures.
- ◆ General workplace health and safety hazards.
- ◆ Location of first aid and medical response procedures.
- ◆ Reporting procedures: accidents, hazards, safety concerns.

As a supervisor/foreperson this opportunity of the employee orientation is essential, not only to meet **Techtric Engineering Ltd.**'s responsibilities, but also to ensure that the employee understands not only our commitment to health and safety but also yours as his/her supervisor/foreperson.

3.9 Worker's Compensation

The Worker's Compensation Act provides employees with coverage for medical benefits, wage-loss and/or pensions in case of injury or illness resulting from or caused by accidents, events, conditions, and/or activities arising out of/and in the course of employment.

Medical benefits are provided for medical treatment and required prescriptions. Wage-loss benefits become payable if the injury or illness disables the employee from employment in the opinion of the treating physician. Pension benefits are subject to the acceptance of a claim by the Workers' Compensation Board (W.C.B.).

To be accepted, a claim must fall within the following criteria:

- The employee must have suffered an injury.
- The injury must have arisen out of employment.
- The injury must have occurred in the course of employment.

While for most work related injuries W.C.B. entitlement is easy to determine, occasionally situations develop where the criteria is subject to interpretation. Therefore, employees and employers have the

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right to appeal decisions by the W.C.B. should they disagree with the acceptance or disallowance of a claim. Specific appeal procedures must be followed.

Workers' Compensation is funded by **Techtric Engineering Ltd.** as outlined under Schedules 1 and/or 2 of the *Workers' Compensation Act*. Employees are not registered with the board on an individual basis. Coverage is effective from the moment a person enters the employment of **Techtric Engineering Ltd.**, including full time, part time and casual employees.

Employer Duties In Case Of Injury

In cases of injury requiring immediate care, the employer has to ensure that the employee is provided with this care. For emergency medical care, the employer is to provide the employee with suitable transportation to the nearest medical care facility. Following this initial care, and in cases of non-emergency injuries, the employee has the right to seek care from the medical practitioner of their choice. The provisions of the *Workers' Compensation Act* require that employees report immediately to the employer any injury they have sustained at work. The supervisor/foreperson has direct responsibility for ensuring that the duties of the employer are met in all cases of employee injury.

The employer has the obligation to report injuries to the W.C.B. within 3 days of the occurrence, if medical care is or needs to be obtained by the employee. For this purpose, the company prepares the *Employers' Report of Injury*. Prior to preparing this report, it is expected that supervisor/foreperson accident investigation is conducted. If the employer cannot verify or accept the employees' statement of injury, then he/she must report to the W.C.B. that the employer does not accept the employees' version of the injury or the event leading to the injury. The best protection against W.C.B. claim abuse is insisting on early reporting of injury and on thoroughly investigating injury and accident reports.

W.C.B. Claims Cost Control

Workers' Compensation cost is a significant cost of operating. Controlling this cost is important. The most effective means of controlling this cost is to run with a low incidence of injury. Our emphasis on a pro-active health and safety program is to ensure that our operations can benefit from low injury incidents. The benefit of preventing injury improves profitability by protecting both our human, as well as financial resources.

In addition to preventing injury by good operating practices, W.C.B. claims management is important to reducing this cost. Claims management means ensuring that workers can return to work as soon as they are able and ensuring that abuse of W.C.B. benefits is minimized.

It is important to instill in your employees that you expect injuries to be reported to the site supervisor/foreperson when an injury is sustained. First you want to ensure that appropriate treatment is provided and second, you want to insure that the cause of the injury is identified as work related, in the manner that the employee states.

Summary: The Supervisor/Foreperson And W.C.B.

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The following are the basic steps to be followed by the supervisor/foreperson to ensure workplace injuries and Workers' Compensation requirements are handled effectively:

- Instruct employees to report injuries immediately.
- Provide or arrange for emergency care (first aid).
- Arrange for emergency transportation to medical facility if medical care is required.
- Conduct preliminary accident/injury investigation by taking statements from the injured person and any witnesses to determine what, where, when and how the injury was sustained.
- Conduct Accident Investigation.
- Ensure any required preventative measures are taken to prevent re-occurrence of the accident.
- Follow-up with employee to inquire about the extent of the injury and/or recovery. Advise the employee of the results of the accident investigation.
- When the employee returns to work, review the accident event, discuss corrective actions taken and issue appropriate instructions to prevent recurrence.

Policies: 3-9A Early and Safe Return to Work

Policy Description:

The following policy is written to provide the operating guidelines for an early and safe return to work process. A return to work program is an essential part of **Techtric Engineering Ltd.** loss control effort. It is the intention of **Techtric Engineering Ltd** to return injured employees, on a temporary basis, with the appropriate medical release, to light or modified duty at the earliest possible opportunity.

Scope:

This policy addresses **Techtric Engineering Ltd.** employees and subcontractors who are injured in the course of their employment. An employee or subcontractor of **Techtric Engineering Ltd.** will be eligible for light or modified duty based on:

- the employee or subcontractor of **Techtric Engineering Ltd.** medically determined physical limitations,
- the availability of light/modified duty positions or assignments,
- the employee or subcontractor of **Techtric Engineering Ltd.** vocational skills, additional abilities, and work experience, and,
- Specific work force needs and fiscal responsibilities of Techtric Engineering Ltd.

Light or modified duty is provided on a temporary basis only. Unless unusual circumstances warrant, this period shall not exceed 90 days. If the disability will extend beyond 90 days, the president of **Techtric Engineering**

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Ltd will hold a meeting with the employee or subcontractor of **Techtric Engineering Ltd** to determine the employee or subcontractors considerations.

Definitions:

Light Duty: Work that consists of only duties that are light in nature. This may constitute *choosing* only a portion of the worker's usual duties that fits within a physician's recommended release, but it is more likely to occur when the employee or subcontractor of **Techtric Engineering Ltd.** normal job cannot be performed to the extent other "light" duties must be found e.g. Electrician with an injured back performs a variety of office duties or marketing duties during the day.

Modified Duty: Modification of work duties that are usually within the employee or subcontractor of **Techtric Engineering Ltd.** normal duties, this constitutes *changing* any duties that are outside of the physical capacity of the employee or subcontractor of **Techtric Engineering Ltd.** so they fit with in a physicians recommended release. Generally, this type of duty is appropriate for situations where the essential functions of the job at injury, with modification, can still be performed, e.g. Electrician who sustains a back injury that results in a restriction by there physician of "standing for only one hour at a time" duties shall be "modified" to allow that employee or subcontractor of **Techtric Engineering Ltd** to sit once an hour.

Early and Safe Return to Work Program Benefits and Objectives:

Program Benefits:

According to articles in various professional safety periodicals and studies conducted by professional safety and insurance organizations:

- Injured workers off longer than six months have only a 50% chance of returning to their job. If time lost exceeds only one year, there is a 90% chance they will never return to work.
- Early and Safe Return to Work Programs reduces medical costs. The injured worker heals faster; shortening the time medical treatment is required.
- Early and Safe Return to Work Programs reduces legal costs. Workers are less likely to feel their rights have been violated causing them to hire legal counsel.
- Cost reductions resulting from Early and Safe Return to Work Programs directly impact organization's workers compensation premium rate.

Objectives:

1. Attempt to return injured employees and subcontractors of **Techtric Engineering Ltd.** to good health and productive employment as soon as possible.
2. Develop temporary assignments which assist the employees and subcontractors of **Techtric Engineering Ltd.** return to their original positions through a gradual process.
3. Provide an effective means for employees and subcontractors of **Techtric Engineering Ltd** to continue to contribute to the company's service goals.
4. Minimize the impact of Workers' Compensation claims cost by reducing the amount of lost time and productivity of the injured employee or subcontractor of **Techtric Engineering Ltd.**

4.0

SAFETY PROGRAM

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4.1 General Safety Rules

As **Techtric Engineering Ltd.** is responsible for providing a safe work environment, every employee has a legal obligation to act in a safe and responsible manner and use personal protective equipment, as required, at all times.

The following rules shall be reviewed annually:

1. Report immediately any incident/accident of ensuing nature to his/her supervisor/foreperson:
 - a) Any injury or accident.
 - b) Fire, spill or other apparent emergency.
 - c) Any defective machinery, equipment or unsafe condition.
 - d) When medical attention is sought for a work related incident.
2. Smoking is prohibited except in designated areas.
3. It is the responsibility of all employees to keep their work area clean and tidy at all times.
4. Access routes to fire exits, emergency equipment and electrical control panels must be kept free of obstructions at all times.
5. It is every employees responsibility to wear the appropriate personal protective equipment.
 - a) Safety eyewear when operating and or loading machinery.
 - b) Safety footwear is required in designated areas.
 - c) Hearing protection, when in posted areas.
 - d) Gloves, where required.
 - e) Fluorescent vests, when in danger of vehicular incident.

The proper use of personal protective equipment (P.P.E.) is essential for the safety of all employees safety. Take good care of it and wear it properly. Any equipment not in working order or found to be defective must be returned to the supervisor/foreperson for repair or replacement.

6. the wearing and playing of radio earphones is prohibited.
7. Unless scheduled, no employee shall be in a work area without permission of the supervisor/foreperson.
8. Only designated personnel are to work on specified electrical equipment. Proper lock-out procedures must be followed.
9. Employees are forbidden to remove lock-out devices attached by others. In the event such a lock must be removed, the supervisor/foreperson will assess the situation prior to any action.

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- Only after all alternatives have been reviewed, and removal deemed safe, shall the lock be removed.
10. Horseplay endangers the safety of workers and is not permitted.
 11. Only those employees authorized by supervisor/foreperson shall use or operate any company vehicle, machine or equipment.
 12. Proper material handling procedures must be adhered to when lifting or carrying heavy objects. Lift safely, knees bent, back straight and load close to body. Ask for help with heavy loads.
 13. Possession and/or consumption of alcoholic beverages or the possession and/or use of mind altering drugs in **Techtric Engineering Ltd.** facilities and project work sites or reporting to work in an unfit condition due to the consumption of alcohol or the use of mind altering drugs is strictly forbidden.
Techtric does not perform safety-sensitive job tasks.
Techtric employees are informed of the company's drug and alcohol policy by internal material and our health and safety manual.
Supervisors are educated to recognize impairment and the proper response to persons under the influence drug and alcohol.
 14. All safety procedures must be adhered to when using ladders. A portable ladder shall be free from broken and/or loose members or other faults. The ladder must have non-slip feet and be placed on a firm footing where it exceeds six metres in length and is not securely fastened, or is likely to be endangered by traffic (vehicular and/or pedestrian). A ladder must be held in place by one or more workers while being used, and when not securely fastened, be inclined so that the horizontal distance from the top support to the foot of the ladder is not less than $\frac{1}{4}$ and not more than $\frac{1}{2}$ of the length of the ladder.
 15. Read and obey all posted signs and instructions.
 16. Employees operating a machine or equipment should be approached from the front, or in a manner as to not startle them. Talking to or otherwise distracting an operator of a machine or equipment while in operation, is prohibited.
 17. No machine or equipment shall be left running unattended.
 18. Mandatory machine guards must be place while operating.
 19. All electrical and mechanical equipment must be repaired by personnel authorized by management. Any tampering with or adjusting of electrical or mechanical equipment by unauthorized personnel is prohibited.

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20. Compressed gas cylinders are dangerous and are to be handled, where required, with utmost care. Valve protective caps shall always be in place when moving and/or storing cylinders. Gas cylinders shall always be chained in place when stored. Gas cylinders must be secured to prevent falling (on proper cart) when in use or connected for use.
21. Sabotage or wilful damage of **Techtric Engineering Ltd.** property, or the property of others while on **Techtric Engineering Ltd.** premises or job sites is prohibited.
22. All portable electrical equipment used outdoor or in damp locations should be equipped with ground circuit interrupters.
23. All equipment with defective electrical components is immediately removed from service.
24. All employees must not wear loose fitting clothing and/or jewellery if they could come into contact with moving parts.
25. Workplace Violence is not permitted all workers are informed of the company's policies and procedures on workplace violence, we educate all workers by posting policy in lunch room and new employee orientation.
26. Risk assessment must be conducted to evaluate the risk of workplace violence.
27. All incidents of workplace violence must be reported and investigated.
28. Tools or equipment capable of conducting electricity shall not be used in close proximity to any live electrical installation or equipment.
29. A worker required to wear or use any protective clothing equipment or device shall be instructed and trained in its care and use before wearing the protective clothing, equipment or device. R.R.O.1990,Reg. 851, s. 79.

4.2 Electrical Lockouts

600/347 Volt and 208/120 Volt Distribution

The following lock out procedures must be adhered to at all times, and all necessary and appropriate personal safety equipment must be worn, prior to attempting to service, repair, maintain or test any electrically operated device.

1. Verify using panelboard schedule description or lamacoide name plate on disconnect switch for equipment to be isolated.
2. Clean floor area before switch operation.
3. Wear gloves, 'UV' rated safety flash glasses and hard hat. Operate disconnect switch or

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circuit breaker to 'open' position.

4. Open door of the switch board and verify that all phases are 'open', check for potential on the load side of the switch. Use fuse puller and pull fuses and remove.
5. For moulded case circuit breakers, check for voltage on the load side of the breaker if possible. If not, check for voltage at the equipment terminal box.
6. Pad lock disconnect switch or circuit breaker in 'open' position. If circuit breaker is not fitted with padlock device, tape extra tag to circuit breaker toggle.
7. Close door.
8. Tag the disconnect switch or circuit breaker in 'open' position. **Note:** All information on tags must be filled in.

13800 Volts High Voltage Power Distribution

1. Verify using single line drawing and high voltage switch gear identification of load break switch that is to be operated on.
2. Verify neon potential indicators operation prior to isolation.
3. Thoroughly examine and air test minimum class 2 rubber gloves before use (must be used with leather protection).
4. Open all secondary load.
5. Clean floor area before switch operation.
6. Wear gloves, 'UV' rated safety flash glasses and hard hat. Stand on concrete floor and operate switch to 'open' position.
7. Verify with the use of flash light through the inspection window that all 3 phase of switch blades are *open*. If fitted with neon indicators - neon light will be "off".
8. All personnel in the near vicinity must wear rubber gloves, flash glasses and hard hat protection.
9. Open door and re-verify that switch blades are in *open* position.
10. Use high voltage potential indicator and check potential. Re-verify potential indicator operation on any known power source.
11. Use rubber gloves with grip all to pull fuses out from fuse holder.

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12. Use grip all to apply grounding cable on feeder that is isolated. Apply grounding cable to ground bus first then "isolated"feeder terminal last. **Note:** Inspect cable for continuity before installation.
13. Close door, apply pad locks and tag with switch in the *open* position. **Note:** All information on tags must be filled in.

4160 Volts High Voltage Power Distribution

1. Verify using single line drawing and high voltage switch gear identification of load break switch that is to be operated on.
2. Verify neon potential indicators operation prior to isolation.
3. Thoroughly examine and air test minimum class 1. rubber gloves before use (must be used with leather protection).
4. Open all secondary load.
5. Clean floor area before switch operation.
6. Wear gloves, 'UV' rated safety flash glasses and hard hat. Stand on concrete floor and operate switch to '*open*' position.

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7. Verify with the use of flash light through the inspection window that all 3 phase of switch blades are *open*. If fitted with neon indicators - neon light will be "*off*".
8. All personnel in the near vicinity must wear rubber gloves, flash glasses and hard hat protection.
9. Open door and re-verify that switch blades are in *open* position.
10. Use high voltage potential indicator and check potential. Re-verify potential indicator operation on any known power source.
11. Use rubber gloves with grip all to pull fuse out from fuse holder.
12. Use grip all to apply grounding cable on feeder that is isolated. Apply grounds to ground bus first then "isolated" feeder terminal last. **Note:** Inspect grounding cable for continuity before installation.
13. Close door, apply pad locks and tag with switch in the *open* position. **Note:** All information on tags must be filled in.

4.2-A Insert #1 - September 2002

The following sections are taken from OSHA legislation.

Lock Out

- 188
- 1) The power supply to electrical installations, equipment or conductors shall be disconnected, locked out of service and tagged before any work is done, and while it is being done, on or near live parts of the installation, equipment or conductors.
 - 2) Locking out is not required,
 - (1) if the conductors are adequately grounded with a visible grounding mechanism; or
 - (2) if the voltage is less than 300 volts and there is no locking device for the circuit breakers or fuses and procedures are in place adequate to ensure that the circuit is not inadvertently energized.
 - 3) If locking out is not required, the employer shall ensure that the procedures set out in clause 2)(b) are carried out.
 - 4) Before beginning the work, each worker shall determine if the requirements of subsection 1) have been complied with.

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- 5) If more than one worker is involved in the work referred to in subsection 2), a means of communicating the purpose and status of the locking out shall be provided.
- 6) If a tag is used as a means of communication, the tag,
 - (1) shall be made of non-conducting material
 - (2) shall be secured to prevent its inadvertent removal
 - (3) shall be placed in a conspicuous location
 - (4) shall state the reason the switch is open
 - (5) shall show the name of the person responsible for opening the switch; and
 - (6) shall show the date on which the switch was opened.
- 7) Written procedures for compliance with this section shall be established and implemented.

Live Line Work

- 189
- 1) Despite section 188, this section applies if it is not practicable to disconnect electrical equipment or conductors from the power supply before working on, or near, live exposed parts of the equipment or conductors.
 - 2) Only a worker with the qualifications described in section 181 shall perform the work.
 - 3) The worker shall use rubber gloves, mats, shields and other personal protective equipment and procedures adequate to ensure protection from electrical shock and burns while performing the work.
 - 4) If the equipment or conductor is operating at a nominal voltage of 300 volts or more, a suitably equipped competent worker who is able to recognize the hazards and perform rescue operations including artificial respiration shall be able to see the worker who is performing the work.
 - 5) Subsection 4) does not apply to equipment testing and trouble-shooting operations.

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4.3 *Personal Protective Equipment*

For the safe performance of work, **Techtric Engineering Ltd.** provides approved protective equipment and safety devices, some of which include:

- **Hard Hats**

Hard hats are provided and must be worn by all employees exposed to the potential hazard of head injury. They must also be worn by visitors to job sites where protective head gear is required.

- **Eye Protection**

Eye protection is provided for all employees who may be exposed to potential eye injury from sharp flying objects, hazardous substances, and harmful lights or rays.

- **Hand Protection**

Appropriate work gloves must be worn where there is a danger of hand injury from electrical burns, chemical burns, splinters, blows, cuts or abrasions.

- **Foot Protection**

Safety footwear is supplied and must be worn by personnel, where required, during all hours of their employ.

Others, including all visitors to job sites, exposed to hazard of potential foot injury shall wear foot protection appropriate to the circumstances.

- **Noise Protection**

When one of the following conditions exists, it is considered that a worker is exposed to a potential hazardous noise level. Earplugs/earmuffs are provided and must be worn by all employee exposed to the potential hazardous noise level.

- There is difficulty in carrying on a normal conversation in the work area.
- There is a temporary loss of hearing after being exposed to noise.
- There is a ringing or pain in the ears during or after exposure.
- Hearing protection is available and required in areas where a worker is exposed to hazardous noise levels.

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- **Fall Protection**

Unless a safety net or travel restraint system is being used, a worker shall wear a fall arrest system if the worker may fall (a) a distance of more than three metres; (b) into operating machinery; (c) into water or another liquid; (d) into or onto a hazardous substance or object.

A fall arrest system, shall be adequately secured to a fixed support or to a lifeline that is securely fastened to the project; shall be so arranged that if the wearer falls, the wearer will be suspended not more than 1.5 metres below his or her location before the fall; and shall apply a peak fall arrest force not greater than eight kilonewtons to the wearer. Defective fall protection equipment must be removed from service immediately.

All workers are provided fall protection training

All fall protection equipment must be inspected before every use.

A fall arrest rescue plan must be, developed before workers may use a fall arrest system at work site.

- **Respiratory Protection**

Masks and breathing equipment would be made available and worn whenever a worker is potentially exposed to excessive dust, mists or fumes.

4.4 Confined Space Entry

Techtric Engineering Ltd. will, where applicable, develop, implement and maintain written procedures for confined space entry.

Minimum Requirements

- A general procedure which controls all entry into confined spaces at each location must be established, in writing.
- Site inspection, acceptable testing and documentation prior to entry and training in entry must be completed for supervisors/forepersons and workers.
- Methods will be developed for physical isolation, cleaning, purging, ensuring zero energy, ventilating, providing air for breathing and control of hazardous materials during entry into confined spaces.
- Precautions are required when entering oxygen-deficient or hazardous atmospheres.

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- There must be provisions for periodic reviews of procedures.
- All exceptions must be clearly defined prior to approval.

4.5 Workplace Hazardous Materials Information System

This system was developed in conjunction with government, labour and employer groups. Why? Because both labour and employers recognized that chemicals in the workplace could be potentially hazardous and they, in many cases, could not get the necessary information to protect against these hazards. There are three (3) major parts:

1. Warning Symbols
2. Material Safety Data Sheets (M.S.D.S.)
3. Employee Education/Training

Responsibilities

- **Supplier:** The supplier must label products, provide labels and develop and send M.S.D.S.s to employers prior to or with their first shipment.
- **Employer:** The employer must ensure proper labelling in the workplace. Provide M.S.D.S.s to workers and educate all employees and specifically train those who work with WHMIS controlled substances.
All labels must be affixed to the original containers of controlled products, if labels are missing or illegible they should be replaced with workplace labels.
Workplace labels must be affixed to controlled products that have been transferred from the original container into another container. Material safety data sheets are obtained for all controlled products.
- **Employees:** Employees must attend programs intended to educate or train them in the safety use and handling of substances.
- **Hazards:** There are three (3) major hazards;
 - ❖ **Health**
Poisoning, local effects.
 - ❖ **Flammable**
Materials that easily ignite.
 - ❖ **Reactivity**
Substances, that when mixed with other substances, air, water, etc., may explode, burn or produce a vapour.

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4.6 Scaffolds / Workplace Platforms

All scaffolds/work platforms must meet the requirements of CSA Standard B345.1-1-M82, B345.2-M82 and B345.4-M82 or equivalent.

Minimum Requirements

- Footing and anchorage must be sound, rigid and rated for at least two times the maximum load to which it is subjected to without settling or displacement.
- Guard rails and toe boards must be on all open sides of the work platform.
- A lifting device shall be operated only by a competent person, or a worker being instructed who is accompanied by a competent person.
- The rated load capacity and or load chart must be clearly marked on a lifting device.
- There is a visual inspection preform on lifting devices before every use.
- A signal person must be utilized when the operator's view is obstructed.
- Damaged or weakened scaffold/work platforms must be repaired or replaced immediately.
- Tools, material or equipment should not be carried while climbing into position on a scaffold/work platform.
- The supply and erecting of a scaffold/work platform must be in accordance with approved safety methods and existing legislation.
- Provisions must be made for diversion of vehicular traffic and personnel by means of signs, barricades, traffic cones, fences and a flag person, if required.
- Consideration must be given to electrical lockout procedures if the scaffold/work platform is near an electrical source.
- The appropriate personal protective equipment must be worn when installing, working off of, or dismantling a scaffold/work platform.

4.7 Ladders

All ladders must meet the requirements of CSA Standard Z11-M81 or equivalent. The following lists the minimum requirements.

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- Only approved ladders will be used.
- Ladders must be checked visually before use for the following: side rails, raising rope, spreaders, hinges, stops, safety feet and steps or rungs.
- The maximum length of a ladder measured along its side rail shall not be more than six metres for step-ladders.
- Ladders may only be used on firm level footing.
- The top two steps of a portable ladder must not be stood on.
- Only one worker may work on a ladder at a time.
- Ensure that step ladders are opened fully and braces are locked before use.
- Step ladders may not be used as straight ladders.
- Ladders must not be placed on a box or table to gain additional height.
- Ladders must not be placed in front of a door unless the door is locked or guarded.
- Ladders may only be used in an upright position and never vertically for the purpose of a runway or scaffold.
- For access to a roof, ladders must be extended at least one metre above the point of support.
- Portable metal ladders must not be used for electrical work.
- Ladders exceeding seven metres in length must be held in place.
- Portable, straight or extension ladders must be inclined so that the horizontal distance from the top support to the foot of the ladder is at least one quarter of the length of the ladder.
- Both hands must be free for climbing. A haul line will be used for handling materials.
- Ladders to be used against window sash must be equipped with a board fastened across the top of the ladder and long enough to span the window.

4.8 Housekeeping

Poor housekeeping leads to decreased morale and an increase of accidents. Everyone has an obligation to keep their workplace, lunch facilities and washrooms clean.

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After use, materials and tools shall be removed and stored properly. Time is never wasted by stopping to clean up. It is much easier to work in a clean area than one cluttered with materials and tools.

The following five (5) are the basic rules for housekeeping:

1. Every employee should take pride in their workplace. Report any unsafe conditions or accident hazards of which you have knowledge to your supervisor/foreperson. If the hazard or unsafe condition can be safely and readily remedied by employees, they are expected to do so.
2. Fire exits and fire extinguishers should be maintained and kept clear of obstructions at all times. All workers who may be required to use fire extinguishing equipment are provided training. All fire extinguishers are of suitable types and sizes. All fire extinguishers are inspected monthly.
3. Keep the floors clear of tripping or slipping hazards. Oil or liquid spills should be cleaned up immediately.
4. Place oil, solvent, paint or grease soaked rags in metal containers provided for them.
5. Anyone using the smoking areas must use all precautionary measures in the disposal of butts, pipe ashes or matches.

REMEMBER: A clean Job is a safe job!!!

4.9 Power And Hand Tools

Techtric Engineering Ltd. will ensure that all workers receive adequate training in the use of and limitations of all power and hand tools and equipment.

Minimum Requirements

- All electric power tools are potential electric hazards. Ground all Electric tools.
- Keys or adjusting wrenches must be removed from the tool before turning it on.
- The power cord from the electrical outlet must be removed before changing tool attachments.
- Electric power tools must not be used while standing on wet or damp floors or in hazardous locations that have ignitable gases or chemicals.

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- Power tool adjustments must be made before starting tool.
- The right tool for the job must always be selected.
- Tools must be maintained in good condition.
- Tools must be secured in place when not in use.
- Pneumatic-operated tools must have the air shut off and bled before disconnecting.

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4.10 General Work Practices For Vehicle Drivers

Only authorized persons will be permitted to operate any of **Techtric Engineering Ltd.** vehicles. Vehicles must be operated at safe speeds and kept under proper control. Highway and road signs must be strictly observed and complied with. As the operator, you are responsible for the safety and proper operation of the vehicle assigned to you.

- Make circle checks of the vehicle daily.
- Report any malfunctions to your supervisor/foreperson.
- Use seat belts when required.
- Observe speed limits and traffic controls and regulations. Allow for different handling of a loaded vehicle.
- Do not exceed maximum passenger or load capacity.
- Watch out for low-hanging objects - branches, wires, etc.
- Use four way flashers while vehicle is parked on roadways.
- No cell phone usage while operating a motor vehicle.
- All employees driving on company business carry a driver's license for the class of vehicle they will be driving.
- We maintain all company vehicles according to manufacturer's specifications.
- We require drivers to legally secure loads.
- Employees are required to assess the risk of a journey before driving and plan their driving route based on the journey risk assessment.

Vehicle Backing Procedure

- Where possible use a spotter to guide in backing up.
- Attempt to back out of traffic rather than back into it.
- Do not back up on an incline; your backward view will be hampered by the angle of your vehicle.
- Always ensure that the reverse warning device is working.

4.11 Weather

A worker must always be prepared for changing weather. You may go out on your assigned task in the morning with the sun shining and within an hour, it may be raining or snowing. Be prepared. If possible, keep your protective clothing with you.

During the winter months, in our climate, snow and ice are a fact of life. Always be aware of your footing, when walking in slippery conditions, and when driving. Watch out for icicles as they will fall from eaves of buildings. They pose a danger of falling and striking you. When working around buildings, glance upward occasionally and report dangerous formations to your supervisor/foreperson.

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When snow shovelling, always shovel facing traffic. Make sure you have a safety vest on and watch for pedestrians.

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4.12 First Aid

Techtric Engineering Ltd. will train and provide qualified first aid attendants, as outlined in the Workers' Compensation Act.

- The names of trained individuals shall be posted at a conspicuous place in the job site, in close proximity to the first aid kit/station.
- All supervisors/forepersons shall be offered training in first aid at the Emergency Level and in CPR to the Heartsaver Level.

All injuries, no matter how minor, must be reported to first aid.

- The first aid attendant will care for the injury. After treatment has been rendered, the accident must be reported to the supervisor/foreperson. The accident will then be investigated in order to determine preventative measures so that recurrences will not occur.
- Witnesses to an accident should assist the injured person to the first aid station, if required.
- If the injury is of a serious nature and the worker cannot or should not be moved, get help and get first aid.
 - First aid supplies are readily available.
 - All work related injuries and illnesses are documented.
 - All workers certified in first aid are readily available to assist injured workers.

4.13 Emergency Plans

Techtric Engineering Ltd. will establish written procedures which outline actions to be taken in specified emergency situations. The procedures must be reviewed on an annual basis or if workplace conditions change that might warrant a review.

Emergency Communication / Call List

- Each work location will ensure that an emergency communication system exists and is available for use, when necessary, to ensure that all workers follow the proper procedure in communicating significant emergencies.
- At all locations an emergency on-call list will be established to ensure the proper communication of significant emergencies.

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- The list will include the names and phone numbers of responsible line management and community emergency response organizations.
- The list will be available at all times, readily identifiable in a designated location(s).
- All workers will be informed of this list, its purpose and its use.
- Emergency situations will be communicated, as per written location procedures. Designated line management will be responsible for contact with the appropriate local, provincial and/or federal agencies.
- Designated workers will be trained in the use of this procedure to communicate emergencies.

5.0

**ACCIDENT / INCIDENT
PROGRAM**

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5.1 Accident Investigation

There are various reasons why accidents in the workplace are investigated. The most important reason for investigating an accident is to find out what happened and why, so that steps can be taken to prevent recurrence of such accidents. Investigations are also done to fulfil both legal and company requirements as well as to determine the costs associated with an accident.

Although the exception, and not the rule, we want to confirm or deny that the accident and/or disability that the employee is claiming indeed happened and/or resulted from a work related accident. This is the essential starting place for effective accident claims control.

Policy

It is **Techtric Engineering Ltd.** policy that a written investigation be completed on every accident leading to lost time or medical aid injury. Written investigation should also be completed for potentially serious first aid accidents, near misses and accidents involving significant property damage.

Introduction To Accident Investigation

Supervisors/forepersons will become fully knowledgeable with all work procedures, programs and overall relations in the workplace. These are key basics that all accident investigators must possess or become familiar with. Supervisors/forepersons are provided full training and investigation techniques.

Creation of a standard accident investigation form is recommended (**Appendix A**). These forms should allow the user to put comments down with limited structure. Although accident investigations are reactive in nature and can be seen as just a method for "*putting out fires*", it is a process that identifies weaknesses in work procedures. Important information can be learned from these incidents and deficiencies can be corrected to ensure that there are no recurrences.

Incident / Accident Investigation & Reporting

For use in all site work related accidents/incidents involving **Techtric Engineering Ltd.** personnel and/or property.

Definitions

Accident means an occurrence which is neither expected nor planned resulting in personal injury and/or property damage.

Incident means an occurrence which, under different circumstances, would have or could have caused damage to property or injury and includes a complaint about a hazard and a report of the existence of a hazard.

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General

All serious or potentially serious incidents/accidents including personal injury and property damage, will be thoroughly investigated. The purpose of the investigation is to determine the facts and circumstances surrounding the incident/accident in order to identify cause and most importantly, a means of prevention. Investigations are to be conducted immediately, and every effort should be made to co-operate in preserving evidence and assembling information.

Supervisors/forepersons will investigate every lost time, medical aid accident as soon as possible after it occurs and submit the Accident Investigation Report to management within 24 hours. In no way is the investigation to be considered complete until management is satisfied that the basic cause of the accident has been identified and corrective actions taken.

Purpose

- To comply with all legislation.
- To provide a condensation of facts regarding the occurrence, upon which to base present and future decisions.
- To determine and record the causes and contributing factors of the occurrence so as to identify high risks and recommend corrective actions.
- To create interest in health and safety amongst employees by giving them information about experiences directly related to their work places and procedures.
- To provide information for improvement in work procedures and practices.

Objectives

- Determine all conditions and practices contributing to the accident, illness or incident.
- Evaluate the severity of the issue and potential for recurrence.
- Communicate control information to those directly concerned.
- Analyze trends for development of appropriate loss control methods, procedures and programs.
- Recommend and implement remedial action(s).

Procedure For Accident/Incident Investigations By Supervisors/Forepersons

1. Assume control of the site until all preliminary evidence is gathered.
2. Carry out formal investigation as soon as possible.
3. Preserve all relevant evidence.
4. Identify and interview witnesses and anyone else who may have relevant information and document.
5. Photograph and map evidence (if necessary).
6. Prepare diagrams of zones and location of evidence (if necessary).
7. Collect, record and examine equipment, materials, substance(s) and tool(s) (if necessary).
8. Analyze evidence to determine the immediate cause (symptoms) and basic causes (origins).

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9. Recommend remedial action(s) and/or alternative(s).
10. Monitor implementation of both immediate and long term corrective actions.
11. Complete written documentation indicating action(s) undertaken.

Critical Injury Defined

From Ontario Regulation 714/82, under the Occupational Health and Safety Act, critical injury means an injury of a serious nature that:

- places life in jeopardy.
- produces unconsciousness.
- results in substantial loss of blood.
- involves the fracture of a leg or arm but not a finger or toe.
- involves the amputation of a leg, arm, hand or foot, not a finger or a toe.
- consists of burns to a major portion of the body.
- causes the loss of sight in an eye.

Procedure

The following must be notified immediately in the case of a critical injury:

- Manager/Employer
- The Ministry of Labour

The initial notification may take place by telephone, FAX or other direct means.

If in doubt or unsure whether an injury is critical, treat it as critical and advise the Ministry of Labour that you "*believe you might have had a critical injury.*"

APPENDICES

APPENDIX A
FORMS

APPENDIX B

MATERIAL SAFETY DATA SHEETS
(M.S.D.S.)

ACCIDENT / INCIDENT REPORT

Location: _____

Last Name: _____

First Name: _____

Date and Hour of Accident/Incident

Date and Hour Reported

Day/Month/Year Time

Day/Month/Year Time

If delayed in reporting, please explain.

What specific location did this accident occur?

In your own words describe the events/conditions leading up to and including the accident. Include types of equipment (if any), weight, size and condition of any object(s) which were involved. What effort was involved in performing the work.

Describe any pain, and its location.

Give names of any witnesses having knowledge of accident.

Signature

Date