US18038

Trainee Workbook

Unit Standard **18038**
Demonstrate knowledge of and apply health and safety in the electricity supply environment
Level **3** Credits **5**

Name:.....

Learning POWER
ESITO

www.esito.org.nz

Contents

Glossary

The words in this glossary are in green throughout the book.

When I see this word…	It means…
Assign	Give to people.
Busbar	An uninsulated conductor used in switchboards.
Confined space	Small area difficult to move in.
Competent	Able to do the job.
Comprehensive	Covering lots of things.
Compromises	Puts at risk.
Effective	If something is effective, it is working well.
Eliminating	Removing or getting rid of.
Enforcing	Making sure something happens.
Exemptions	Things that don't have to be done.
Hazard	Something that could cause harm or injury to you and/or the environment.
Hierachy	A system of organising people or things - ranking them in order.
Isolating	Setting something apart from – or keeping it away from – anything else.
Minimising	Reducing or lowering the effects of something.
Notify	Tell someone.
Notifiable work	A Health and Safety Inspector needs to be told of notifiable work 24 hours before it is started. Notification of the work must be given in writing.
Prevent	Stop or avoid.
Recommendations	If a person makes recommendations, they are giving ideas that they think are good ones, and should be acted on.
Requirements	Needs or must-dos.
Respiratory	To do with the lungs or breathing.
Significant	Large or important.
Systematically	Using a method or a plan to control.
Vision impairment	A lowering of the ability to see.

1. Introduction

Unit standard objectives

Unit standard 18038 forms part of the National Certificate in Electricity Supply (Level 2). It is an important part of the introduction to the electricity supply sector.

When you have worked your way through this workbook, you will be able to:

- describe what you and your employer must do to meet the safety requirements at your workplace
- describe how these health and safety requirements are met on site
- manage hazards
- maintain and monitor safety on site
- report site safety.

Prerequisite

There are no prerequisites for this unit standard.

Getting started

Icons are used throughout the ESITO trainee workbooks. The most common are listed below.

Pay attention: This information will be important.

Activity: The activities will help you prepare for the assessment task. The activity asks you to:

- think about your past experiences
- think about the information and ideas you have been studying
- think about how you can use new skills in the future.

Website: This icon refers to the world wide web.

Additional information that might be of interest. Sometimes, this space is used to explain ideas in more detail.

2. Knowledge check

This section looks at your prior knowledge and prepares you for what's to come. Answer the questions to find out what you do and don't already know.

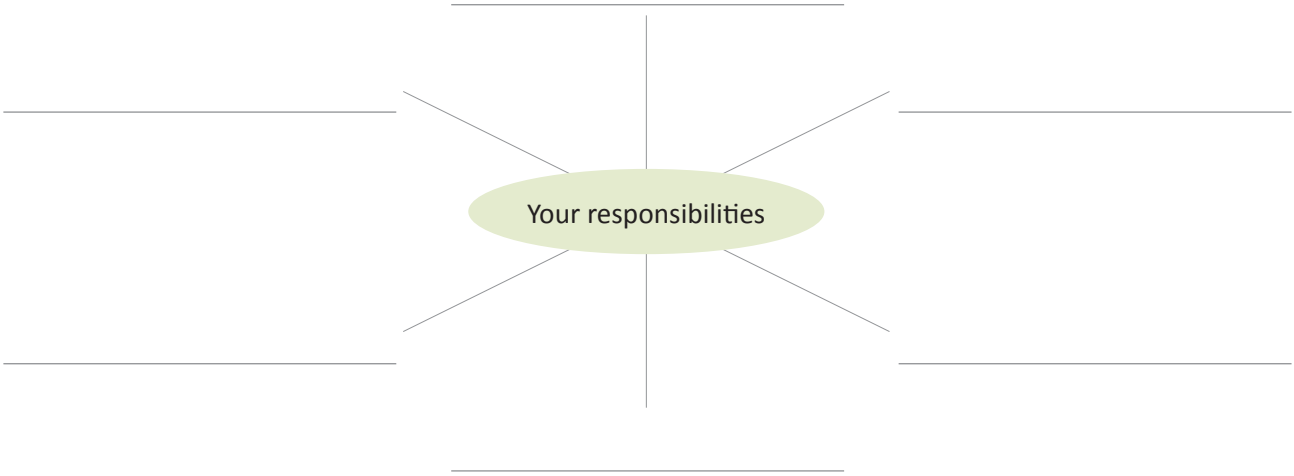
Name three Acts of legislation that apply to you in your workplace.

1 _____

2 _____

3 _____

Do you know what your responsibilities are for keeping your workplace healthy and safe?



Provide your own definition of the following terms, used when there are hazards in the workplace.

Eliminate: _____

Isolate: _____

Minimise: _____

Explain how you report hazards in your workplace. What forms do you use?

_____

Do you know what site safety measures are?

◯ Yes ◯ No

Briefly describe some different safety measures in your own words.

_____

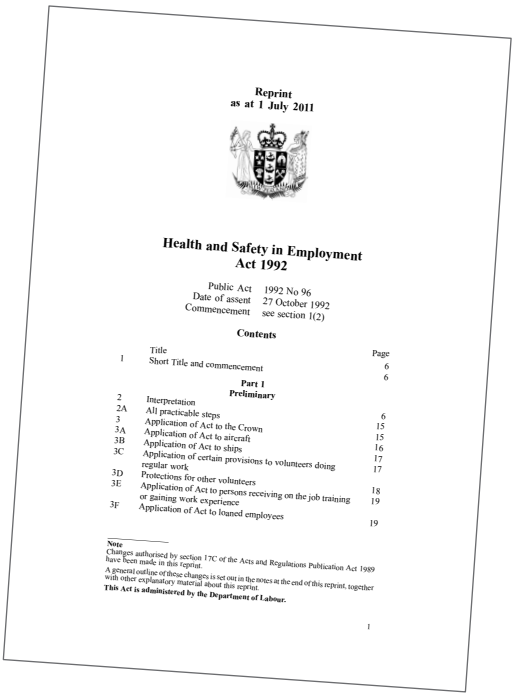
3. Health and safety legislation

Introduction

Because workers in the electricity supply industry (ESI) often work with very high voltage electricity, there is a great emphasis on health and safety in the workplace. Health and safety issues are a major consideration due to the large number of hazards and the high risk of harm associated with them.

Legislation

Health and Safety in Employment Act 1992



Reprint
as at 1 July 2011

Health and Safety in Employment Act 1992

Public Act 1992 No 96
Date of assent 27 October 1992
Commencement see section 1(2)

Contents

Note
Changes authorised by section 17C of the Acts and Regulations Publication Act 1989 have been made in this reprint.
A general outline of these changes is set out in the notes at the end of this reprint, together with other explanatory material about this reprint.
This Act is administered by the Department of Labour.

1

The objective of this Act is to prevent harm to people while at work. It applies to all workplaces and encourages effective management of health and safety.

The Act defines harm and hazards, and the responsibilities employers and employees have to manage harm and hazards in the workplace. These responsibilities affect the self-employed, employers, employees, and contractors.

A workplace must have policies which:

- ensure that the employer or person in charge of the task identifies hazards and manages safety
- recognise that employees also have responsibilities, to themselves and others.

The Department of Labour (DOL) is responsible for enforcing the Act and employs Occupational Safety and Health (OSH) inspectors to regularly visit workplaces. Inspectors will audit processes, investigate complaints and investigate serious harm incidents.

3.1 What is the main objective of the Health and Safety in Employment Act?

Accident Compensation Act 2001

The purpose of this Act is to promote safety in the community in order to prevent accidents and minimise injury.

The Accident Compensation Corporation (ACC) operates under the guidelines of the Act. ACC provides comprehensive, no-fault personal injury insurance for all New Zealand residents and visitors to New Zealand.

Prevention. Care. Recovery.

Preventing injuries

Making sure people get treatment for their injuries

Helping people get back to everyday life as soon as possible

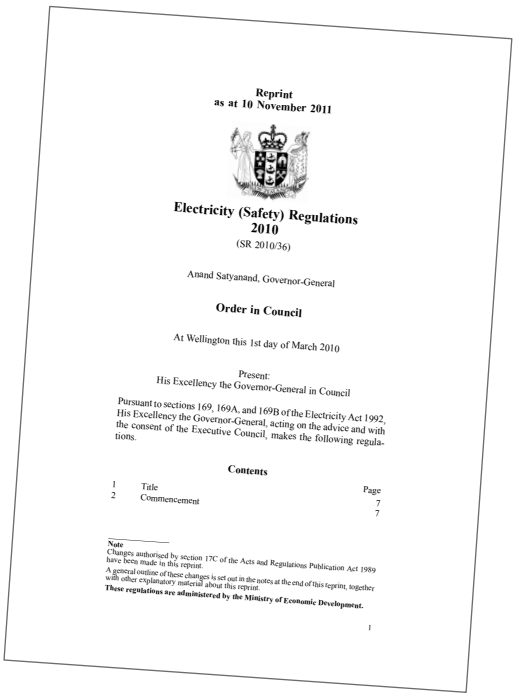
3.2 Have you had any dealings with ACC?

○ Yes ○ No

3.3 What is the main purpose of the Accident Compensation Act 2001 Act?

Electricity (Safety) Regulations 2010

These regulations relate directly to safety within the electricity industry. The Electricity (Safety) Regulations 2010 bring together the requirements of the Health and Safety in Employment Act and the Accident Compensation Act.



Reprint
as at 10 November 2011

Electricity (Safety) Regulations 2010
(SR 2010/36)

Anand Satyanand, Governor-General

Order in Council

At Wellington this 1st day of March 2010

Present:
His Excellency the Governor-General in Council

Pursuant to sections 169, 169A, and 169B of the Electricity Act 1992, His Excellency the Governor-General, acting on the advice and with the consent of the Executive Council, makes the following regulations.

Contents

1 Title Page
2 Commencement 7
7

Note
Changes authorised by section 17C of the Acts and Regulations Publication Act 1989 have been made in this reprint.
A general outline of these changes is set out in the notes at the end of this reprint, together with other explanatory material about this reprint.
These regulations are administered by the Ministry of Economic Development.

1

Amongst other features, the regulations:

- outline what electrical work is
- provide exemptions for domestic electrical wiring and the maintenance of appliances
- list the rules about the supply of electricity
- list the rules for testing, certification, and inspection of electrical work done on installations
- provide the general rules and requirements for electrical safety, and explain what electrically safe and electrically unsafe means
- establish standards for the design of works, installations, fittings, and appliances
- outline requirements relating to safety management systems.

More information about these regulations and how they affect you, can be found on the website: *www.energysafety.govt.nz*

Refer to the trainee workbook 12300 for an explanation of the difference between Acts and regulations.

3.4 What are three features of the Electricity (Safety) Regulations 2010?

1 _____

2 _____

3 _____

4. Health and safety responsibilities

Introduction

The Health and Safety in Employment Act 1992 requires all people in a workplace to take responsibility for health and safety. Ensuring health and safety involves a wide range of hazard management activities and responsibility for hazard management involves all workers at all levels within a business.

What your employer must do...

Your employer must ensure the health and safety of all those employed in, or visiting, the workplace. To do this, the employer must ensure the following.

- Hazards are systematically identified, controlled and managed (by eliminating them, isolating them or minimising them, in that order of preference).
- Suitable protective clothing and equipment (PPE) is provided to employees.
- Safety information is provided to all on site, in a manner that they can understand.
- Training or supervision is provided to employees so that work is done safely.
- The health of employees is monitored to ensure that their work is not having a detrimental effect on them.
- Employees have the opportunity to participate in all of the above.

Identify and manage hazards

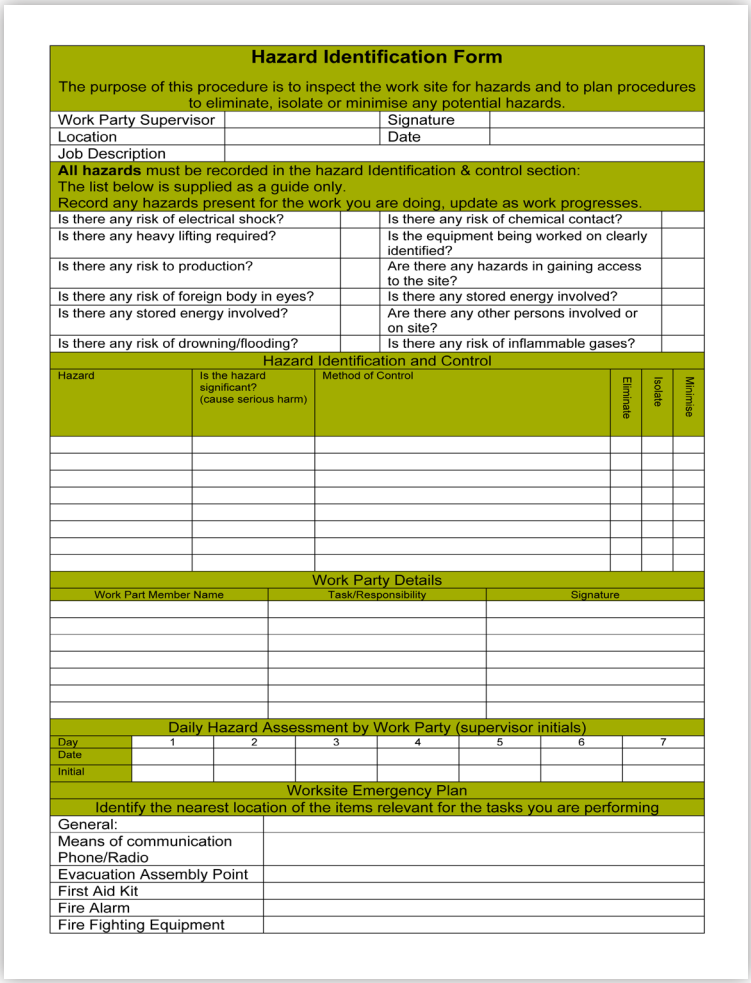
Your employer must have procedures to ensure that hazards are systematically identified, controlled and managed. It is your responsibility as an employee to know and follow these procedures so your employer must make sure that safety information is available for you to access.

Provide training and supervision

Your employer must provide trainees with supervision. They must provide training so that trainees can do the work safely and they must provide systems to check that trainees have understood the training.

Work with employees to improve health and safety

The law requires employees to be involved in improving workplace health and safety. Health and safety works best when there is input from management, employees and other key people or interest groups in the workplace.



Hazard Identification Form

The purpose of this procedure is to inspect the work site for hazards and to plan procedures to eliminate, isolate or minimise any potential hazards.

Work Party Supervisor		Signature	
Location		Date	
Job Description			

All hazards must be recorded in the hazard Identification & control section:
The list below is supplied as a guide only.
Record any hazards present for the work you are doing, update as work progresses.

Is there any risk of electrical shock?		Is there any risk of chemical contact?	
Is there any heavy lifting required?		Is the equipment being worked on clearly identified?	
Is there any risk to production?		Are there any hazards in gaining access to the site?	
Is there any risk of foreign body in eyes?		Is there any stored energy involved?	
Is there any stored energy involved?		Are there any other persons involved or on site?	
Is there any risk of drowning/flooding?		Is there any risk of inflammable gases?	

Hazard Identification and Control

Hazard	Is the hazard significant? (cause serious harm)	Method of Control	Eliminate	Isolate	Minimise

Work Party Details

Work Part Member Name	Task/Responsibility	Signature

Daily Hazard Assessment by Work Party (supervisor initials)

Day	1	2	3	4	5	6	7
Date							
Initial							

Worksite Emergency Plan

Identify the nearest location of the items relevant for the tasks you are performing

General:	
Means of communication Phone/Radio	
Evacuation Assembly Point	
First Aid Kit	
Fire Alarm	
Fire Fighting Equipment	

Example of a hazard identification form

What you and your team must do...

You are responsible for your own safety and you must make sure that any action or inaction on your part does not cause harm to any other person. This is the law. You can be liable for a careless work practice that compromises your own safety or the safety of others. This makes team work within the electricity supply industry a high priority.

Remember the law. No action or inaction should cause harm to others.

Identify and manage hazards

You and your workmates must identify and report hazards so that they can be managed. Managing hazards correctly will lower the risk of an incident, accident, or near miss. If an incident, accident or near miss occurs, you must report it, or make sure it is reported. Make sure that you also follow company procedures and use the correct forms.

Unsafe work situations and work practices are also hazards. If you are aware of an unsafe work situation or practice that you cannot make safe, you must inform your supervisor or manager. It is also your responsibility to make sure that you do not carry out work for which you have not been trained.

Your employer must provide you with the appropriate personal protective equipment (PPE) and you must use it correctly. If you are working in a team, all members of the team must take responsibility for the correct use of PPE. Caring for PPE is also a team responsibility and items must be maintained, stored and left ready for use. The Health and Safety in Employment Act 1992 is very clear on your responsibilities, as an employee.

Job related injury, pain or discomfort is also a hazard and must be reported. If you experience any of these while on the job, tell your supervisor as soon as possible.

Receive training and supervision

Your employer has a responsibility to offer training in health and safety and in return you have a responsibility to complete and act on that training. You must also make sure you have appropriate training for the work you are required to carry out.

Make sure you read any safety information provided and know your safety rules inside out. If you don't understand what you are learning or reading, speak up. Your life, or someone else's, may depend on it.

As a trainee, your employer must make sure you are supervised by a competent person at all times.

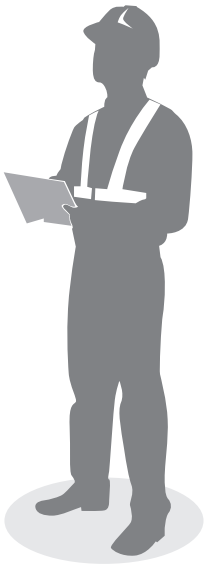
Work with the employer to improve health and safety

The Act recognises that the best people to advise on health and safety in the workplace are usually the people doing the work. You and your workmates are in a position to offer advice about hazards and the management of these. You must be active in reporting safety concerns to your supervisor or the company health and safety representative. Alerting new employees, trainees and visitors to hazards and safety procedures in your workplace will help to maintain a safe work environment.

Working together to create a safer workplace

Creating a safe workplace is a shared goal. Your employer and you have responsibilities to achieve a workplace with a good safety record. This is especially true of the electricity supply industry, which has a large number of hazards and high risk activities.

Health and safety representatives



In many businesses an employer will arrange for someone to act as a health and safety representative. In some cases, this person is elected by the employees. The 'health and safety rep' will be familiar with the health and safety issues of the business and make recommendations regarding how they can be successfully managed. This health and safety rep is likely to be responsible for arranging induction and on-going health and safety training. They may also be responsible for putting in place health and safety plans and reporting new hazards to management.

Many larger businesses have a Health and Safety Committee, in which case several people will share responsibility for the health and safety activities mentioned above.

The committee and/or the representative will generally conduct health and safety audits on behalf of the employer to check that employees are following safety procedures.

4.1 Describe at least three health and safety responsibilities of the following people.

	Health and safety responsibilities:
Employer	1
	2
	3
Employees	1
	2
	3
Health and safety representative	1
	2
	3

5. Health and safety resources

Introduction

There are many ways in which the electricity supply industry and its businesses keep their employees informed of health and safety issues, training and requirements. Let's look at some of these…

Department of Labour

The Department of Labour (DOL) is responsible for the enforcement of the Health and Safety in Employment Act 1992. This Act (the HSE Act) allows for the development and approval of occupational safety and health codes of practice.

The DOL employs Occupational Safety and Health (OSH) inspectors who independently investigate the following:

- complaints related to health and safety in the workplace
- accidents involving serious injuries or death
- situations which have resulted in occupational disease.

Safety Manual – Electricity Industry

The Electricity Engineers' Association publishes the Safety Manual – Electricity Industry (SM-EI). The SM-EI is in three parts and presents the minimum safety requirements for the industry. The SM-EI rules bring together the many recommendations and demands of legislation and industry codes of practice.

The three parts of the SM-EI are presented in two separate booklets.

Book 1 Part 1 Minimum Safety Requirements, and Part 2 General Safety Guide.

Book 2 Part 3 Rules for Work on Equipment.

Your workplace should have a copy of the latest version of these booklets available to all employees. Ask your supervisor where you would find a copy you can use.

Health and safety procedures

Your workplace will have procedures which clearly describe the health and safety requirements for work undertaken. These procedures will generally require you to:

- use the appropriate personal protective equipment (PPE)
- complete a task in a specific way
- follow certain steps in the event of an incident, accident, near miss and other hazard identification
- follow certain steps if you identify someone working in an unsafe manner
- complete forms to: identify hazards, indicate you have read and understood the hazards identified and indicate you have read and understood the safety requirements of the job.

Training and courses

When you are working on-site it is important that you have completed the training needed to deal with any health and safety issues that may arise. This training could be delivered in several ways, for example:

- onsite, as it's needed, by a person who is competent in the task
- through a block course, which you attend at an external training provider (for example: basic first aid)
- paper based workbooks and exercises
- workshops based at your workplace
- activities/tasks completed on the job which give evidence of your competency
- distance learning, which may be paper based or completed online

It is your employer's responsibility to provide the health and safety training required for your work. It is your responsibility to complete that training successfully within the time given.

A trainee's minimum training requirements are listed in SM-EI Part 1, 1.403.

5.1 Do you know what your minimum training requirements are?

○ Yes ○ No

If no, speak to your supervisor.

Warning signs and notices

Employees must comply with all instructions given on signs and notices relating to health and safety.

Warning signs and notices are commonly used in hazardous areas to make you aware of hazards so that you can keep yourself and others safe while on-site. They can identify a hazard, give the minimum PPE needed for the site and/or give specific safety information. Signs and notices minimise the potential harm a hazard might cause. It is important to read and act on warning signs and notices.

Message boards

Message boards are generally used on-site to list the hazards present and the actions needed to control them. They are regularly updated and often come in the form of whiteboards or clipboards. Message boards state the person responsible for a hazard so you can contact them if you have any concerns or updates.

5.2 What are three reasons for using warning signs and notices?

1 _____

2 _____

3 _____

6. Hazard management

Introduction

The electricity supply industry has many hazards that workers deal with on a daily basis. Your employer will ensure you have the supervision and training you need to safely identify and deal with hazards.

As already mentioned, your employer must have methods which systematically and effectively identify and manage hazards in the workplace. This means having hazard management plans in place and reviewing these in a regular and systematic way. Hazards can include those which have been previously identified, are new, or could possibly become hazards in the future. The Health and Safety in Employment Act specifies the control measures that must be applied in all circumstances. The main purpose of systematic hazard management is to avoid harm.

Hazards and harm

Hazards are associated with 'harm' and 'serious harm'.

Harm

Harm relates to illness, injury or both. It includes physical or mental harm caused by work related stress.

Serious harm

Serious harm is any harm that causes death or causes the person harmed to be hospitalised for a period of 48 hours. It includes injuries that relate to permanent loss of function (for example: losing an arm or eye) and temporary severe loss of function (for example: burns, respiratory disease, noise-induced hearing loss, illness caused by exposure to infected material, vision impairment and bone fracture).

6.1 Tick the injury, or injuries, that could be defined as serious harm.

- ○ Permanent or severe loss of bodily function
- ○ Amputation of a body part
- ○ A cut on the arm that does not require stitches
- ○ Burns or loss of consciousness requiring specialist attention
- ○ Sunburn.

What is a hazard?

Hazard

A hazard is any actual or possible future cause of harm. A hazard could come about from:

- an activity (such as using ladders and tools), occurrence, circumstance, process, event or chemical substance
- a situation which results from a mental or physical condition (including temporary conditions that can affect a person's behaviour, such as fatigue, shock)
- a situation which results from the use of drugs and alcohol.

Significant hazard

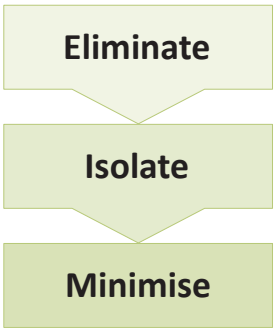
A hazard which has the identified potential for serious harm is known as a significant hazard. For example, asbestos is widely recognised as a significant hazard. Significant hazards within the electricity supply industry include live electricity, working at heights, and confined space entry.

Hazard control measures

Once a hazard is identified it must be controlled. The control measures specified by the Health and Safety Act are known as the hazard control hierarchy.

Hazard control hierarchy

There are three measures of control in the hazard control hierarchy and they must be applied in order. The first control measure is to eliminate (remove) the hazard, where this is possible and a practical option. If the hazard is not able to be eliminated then the next control measure is to isolate it. If the hazard is not able to be isolated then the third control measure is to minimise the risk of harm. Any control measures put in place must meet the needs of standard industry practices, OSH and SM-EI rules.



Eliminate

Eliminate

Remove the hazard or its source from the workplace completely.

Isolate

Isolate

Remove the hazard from the worker or the worker from the hazard.

This might be done by placing a guard over the moving parts of a machine, or building a sound proof cover for plant, to remove a noise hazard. It is any protection that isolates the hazard from the worker.

Minimise

Minimise

Where hazards can't be eliminated or isolated, they must be minimised.

A common minimising control measure is to ensure workers are adequately trained. Using an observer is another minimising control measure in the electricity supply industry. When you are working on a task that has minimum approach distances (MAD) someone will always be responsible for making sure that the MADs are kept so that safety is maintained. For example, observers are required for maintaining MAD for work involving cranes, elevated work platforms and confined spaces.

6.2 Read the scenario below and answer the questions.

Scenario

There is a machine with exposed rotating shafts at a busy work site and the machine operates continuously. The machine is necessary to the running of the site. The machine has been identified as a hazard and two solutions are suggested.

1. Use sensors so that if anyone comes within a certain distance of the shafts the machine shuts down or an alarm sounds.
2. Place guards around the shafts to stop anyone being exposed to them

Questions:

a What is the hazard?

b Can it be eliminated?

○ Yes ○ No

Explain your answer:

c Is there a suggestion which describes how the hazard could be isolated?

○ Yes ○ No

If yes, what is suggested?

d Is there a suggestion which describes how the hazard could be minimised?

○ Yes ○ No

If yes, what is suggested?

Tailgate meetings

Tailgate meetings are an important part of ensuring hazard control in the electricity supply industry. These meetings are known as 'tailgate' or tool box meetings as they often happen around the trucks.

Team meetings take place before the team begins any task and a hazard identification form should be completed as part of these meetings. The team will gather to discuss and agree on the following:

- how the work will be done
- the hazards and how to manage them
- the personal protective equipment (PPE) needed
- emergency response planning
- responsibilities of each member of the team.

Hazard register

A hazard register provides a written reference of all known hazards at a worksite. There may be more than one hazard register per worksite or company, depending on a number of factors such as the different types of work being undertaken or the number of worksites.

A hazard register shows where hazards are located, the tasks, machinery or situations associated with the hazard, and the control measures and review processes the company has in place to manage the hazard.

A hazard register must be maintained. It will be constantly updated to include new hazards and hazards that are no longer current will be deleted.

Reporting

Reporting provides a way for hazards to be brought to the attention of those with the authority to do something about them. Reporting is required for the following.

1. Where an incident, accident or a near miss has happened.
2. Where a possible hazard has been noticed which could have resulted from any of the following:
   - unsafe acts
   - unsafe workmanship
   - unsafe equipment
   - unsafe environment.

To keep yourself and your workmates safe, it is vital that you follow company reporting procedures when reporting incidents, accidents, near misses and hazards. Reporting allows hazards to be tracked and the forms and registers provide permanent records that can be reviewed by the company.

Follow your company procedure for reporting accidents or hazards.

Reporting hazards

Make sure you know where to find the forms and registers at your workplace. You should also know who to give the forms to once you have filled them out. Some types of registers and forms to be aware of are listed below.

Hazard identification forms

Hazard identification forms provide vital information for hazard identification, control and management. The forms are referred to in a number of ways, for example, Hazard IDs, Worksite Safety Plans and Tailgates. Whichever name is used, it is important that you read and understand the information on hazard identification forms. Then, take the agreed actions to keep yourself and members of the team safe.

Most hazard identification forms require all the members of the work party to sign it. This ensures that everyone has had the opportunity to read and understand the work requirements, the related hazards and the hazard control methods that will be used.

Safety Data Sheet registers

This type of register is used to record all materials, chemicals and substances used in the business operation. The Safety Data Sheets listed in the register will provide information on emergency first response, possible long term exposure dangers and the PPE required.

Hazard checklists

Hazard checklists will list all the hazards in the work environment so they can be re-assessed on a regular basis. Checklists are typically updated:

- at the onset of a task
- at least daily
- when a hazard is identified
- when the hazard document states a review or check is needed.

Hazard check schedules

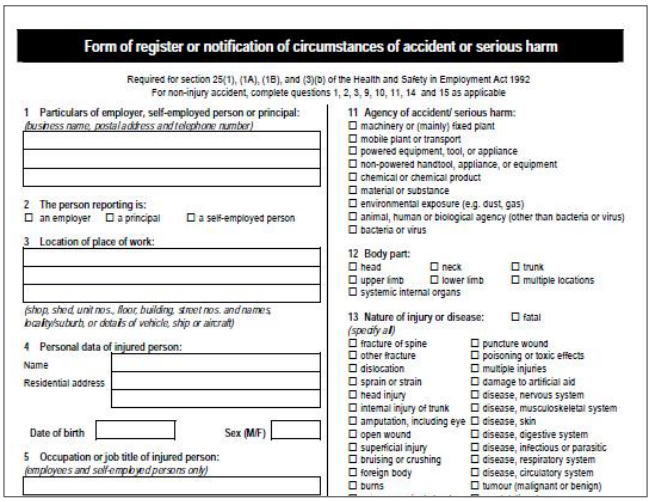
This a timetable to schedule hazard inspections. These are often known as hazard audits and will be performed by a company authorised worker.

6.3 Ask your supervisor where these forms are kept and who you should give them to when completed.

Type of form	Where forms are kept	Who to give when completed
Hazard register		
Accident and incident registers		
Accident and incident report form		
Safety data sheet register		
Plant and equipment register		
Hazard check schedule		
Other (include name of form)		

Reporting incidents, accidents and near misses

The reporting of incidents, accidents and near misses is vital to hazard management. All incidents, accidents or near misses must be reported using the forms provided by your company. Reports will be followed up by health and safety trained staff who will determine the control or management plan for the accident or hazard reported.



Form of register or notification of circumstances of accident or serious harm

Required for section 25(1), (1A), (1B), and (3)(b) of the Health and Safety in Employment Act 1992
For non-injury accident, complete questions 1, 2, 3, 9, 10, 11, 14 and 15 as applicable

1 Particulars of employer, self-employed person or principal:
(business name, postal address and telephone number)

2 The person reporting is:
☐ an employer ☐ a principal ☐ a self-employed person

3 Location of place of work:
(shop, shed, unit nos., floor, building, street nos. and names, locality/suburb, or details of vehicle, ship or aircraft)

4 Personal data of injured person:
Name
Residential address
Date of birth
Sex (M/F)

5 Occupation or job title of injured person:
(employees and self-employed persons only)

11 Agency of accident/ serious harm:
☐ machinery or (mainly) fixed plant
☐ mobile plant or transport
☐ powered equipment, tool, or appliance
☐ non-powered handtool, appliance, or equipment
☐ chemical or chemical product
☐ material or substance
☐ environmental exposure (e.g. dust, gas)
☐ animal, human or biological agency (other than bacteria or virus)
☐ bacteria or virus

12 Body part:
☐ head ☐ neck ☐ trunk
☐ upper limb ☐ lower limb ☐ multiple locations
☐ systemic internal organs

13 Nature of injury or disease: ☐ fatal
(specify all)
☐ fracture of spine
☐ other fracture
☐ dislocation
☐ sprain or strain
☐ head injury
☐ internal injury of trunk
☐ amputation, including eye
☐ open wound
☐ superficial injury
☐ bruising or crushing
☐ foreign body
☐ burns
☐ puncture wound
☐ poisoning or toxic effects
☐ multiple injuries
☐ damage to artificial aid
☐ disease, nervous system
☐ disease, musculoskeletal system
☐ disease, skin
☐ disease, digestive system
☐ disease, infectious or parasitic
☐ disease, respiratory system
☐ disease, circulatory system
☐ tumour (malignant or benign)

In the event of any incident, accident or near miss at your worksite, the employer and the company that owns the site should be notified. As a trainee, you are likely to notify your supervisor first. If the incident or accident involves serious harm it is important that, once the emergency first response has been alerted, the Department of Labour is notified. In the case of fatal accident (death), the police must also be notified.

Serious harm

The Department of Labour (DOL) requires that businesses report any serious harm incident as soon as possible by phone, fax or email. This initial report must be followed up by a written form or report within seven days. An Occupational Safety and Health (OSH) contact person will then be assigned to the business.

Reporting forms

Your employer may have standard reporting forms which are used within your company.

Department of Labour forms are available on their website:
www.osh.govt.nz/services/notification/accident.shtml
www.osh.govt.nz/services/notification/nods.shtml

6.4 Look at your company procedures. In the case of an accident involving injury, who should be notified?

7. Maintaining health and safety

Introduction

There are various health and safety procedures which are common on any site. This section looks at the most common.

Accident and emergency plans and procedures

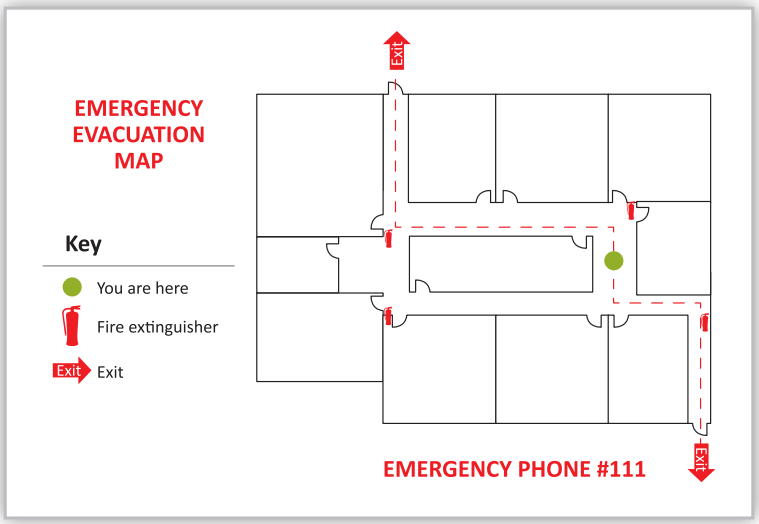
Businesses must put together detailed plans and procedures on how to handle an accident or emergency. In an emergency, the priority is to firstly respond to the emergency and secondly to minimise any further harm to people.

Emergency procedures regarding the site you are working on should be discussed before any job has begun.

Emergency plans

Your SM-EI gives you some guidelines on the minimum emergency procedures required in the electricity supply industry. In general, an emergency plan should:

- state the procedures for raising an alarm
- assign roles and responsibilities and ensure that everyone is aware of their responsibility
- clearly define escape routes from the site
- make sure that all of those within the site are evacuated to a previously agreed assembly area
- ensure that a list of all of those within the site is checked to make sure that everyone is present
- state who the emergency is to be reported to.



Emergency procedures

You should expect any site that you are working on to have accident and emergency procedures based around the following events:

- fire
- flood
- landslide
- chemical spill
- gas leak
- live electricity
- injury to someone onsite
- traffic
- trench collapse.

7.1 Answer the following questions.

a Where would you find accident or emergency safety procedures at your workplace?

b Briefly describe the procedures you would use in your workplace in the following emergency situations.

Injuries to personnel:

A chemical spill:

A fire:

Live electricity (for example, live conductor on the ground):

Site safety measures

When you are on-site there will be safety measures that you need to be aware of and follow.

Written safety procedures

These will list the site procedures to be followed.

Fences or barriers

These restrict un-authorised access.

Warning signs/notices

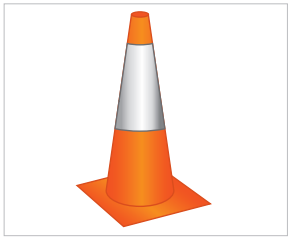
Signs/notices may warn of hazards onsite, precautions for entering the site as well as the PPE to be worn.

Restricted areas

Restricted areas may only be entered by authorised persons.

Safety tape

Safety tape is used to warn others of an area of risk.



Cones

Cones are used to indicate a work area or a hazard.

Hazard boards

These list the hazards present on a site along with what needs to be done to avoid them and the person/s responsible for managing them.

Defined entry and exit points

These are used to control the way that people enter or exit a site.

Emergency exits

Emergency exits allow for safe exit from an area. They are carefully planned to allow for the safest and easiest place to exit in an emergency.

Emergency equipment

Safety equipment that is kept on site.

Safety equipment must be immediately available in an emergency - for example, fire fighting equipment, defibrillator and wash down equipment (chemical spills).

Notifiable work

From time to time you may need to take on a task which has been identified as notifiable work. Notifiable work generally means that there is a higher level of risk when completing the task. It's important that you have either successfully attended the training needed for the task or are being supervised by a competent person.

For further information about notifiable work, refer to SM-EI Parts 1 and 2, Appendix A.

Personal Protective Equipment

Most work you undertake will require PPE and your workplace will have detailed procedures regarding how to use it correctly. PPE includes the following gear.

Industrial workwear

For example, flame retardant protective clothing that must cover the arms, body and legs.

High visibility (high viz) garments

For example, a high viz jacket. High viz garments are worn so that people can be readily identified.

Eye protection

Can be in the form of glasses, goggles or a face shield, whichever meets the procedures and best suits the task.

Hearing protection

Earplugs or earmuffs, whichever option fits you best and is more comfortable.

Head protection

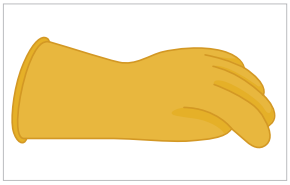
Safety helmets (hard hats).

Respirators

Used in an area where the air quality is compromised by dust or gases.

Footwear

Footwear must fit correctly, offer the appropriate protection and resist slipping.



Hand protection

Gloves offer hand protection against the environment and materials you are working with. Insulating gloves protect against the voltage you are working on.

Sun protection

When working outside you should wear the appropriate sun screen and sun protection clothing.

It is important that any PPE you are using has been well maintained, is checked regularly and stored properly so that it keeps its protective properties.

7.2 Your workmate does not wear the correct PPE when carrying out certain tasks as they say it is uncomfortable. What do you do?

Procedures when working with plant and equipment

Plant and equipment generally are the combination of:

- moving metal parts
- mechanical and electrical componentry.

Combining plant and equipment with live conductors in the same working area means that there are very important and specific safety procedures that need to be followed. When working with plant and equipment you must ensure you have received the training needed to use it safely.

Warning signals

There will be times when you will need to direct the movement of plant. You may need to communicate with the machine operator so it's important that you have an understanding of the basic movement signals.

You must make sure that you know the signals used at the site you are working on and your employer will provide you with the necessary information. If you are working with cranes, an 'Approved Code of Practice for Cranes' is available from the Occupational Health and Safety Service (OSH).

7.3 Complete this activity.

a Where, at your workplace, can you find information on the warning signals used to direct plant movement?

b Name and draw the warning signals used in your workplace to direct plant movement.

7.4 This final scenario brings together the information in this workbook. Read the scenario and answer the questions.

Scenario

A new trainee electrician was replacing a circuit breaker on an electricity supply switchboard for a high school. Before starting work, the trainee had switched off the main power supply to isolate the faulty circuit breaker. After starting work he received a complaint from a teacher that his computer was not working and it was urgently required.

In response to pressure from the teacher, the trainee restored the power and continued working on the live switchboard. The trainee was not trained to work on a live switchboard and was not aware of the additional hazards.

The trainee had difficulty with the alignment of the new replacement circuit breaker with the main busbar. In his attempt to relocate the circuit breaker his pliers made contact between the earth bar and the main busbar causing a flash over and a large fault current to flow.

The trainee received burns to fingers and hand. The inside of the switchboard was coated with blobs of copper from the melted busbar.

Questions

1 Identify the responsibilities of the employer in this scenario.

2 Identify the responsibilities of the employee trainee in this scenario.

3 Identify the electrical hazards for this scenario.

4 Name the PPE gear a trainee should be wearing to work on a live main supply switchboard.

8. Make connections

Think about how the information you have read applies to what you do at work. Read the questions and answer in the spaces provided.

Have you received any health and safety training in your workplace?

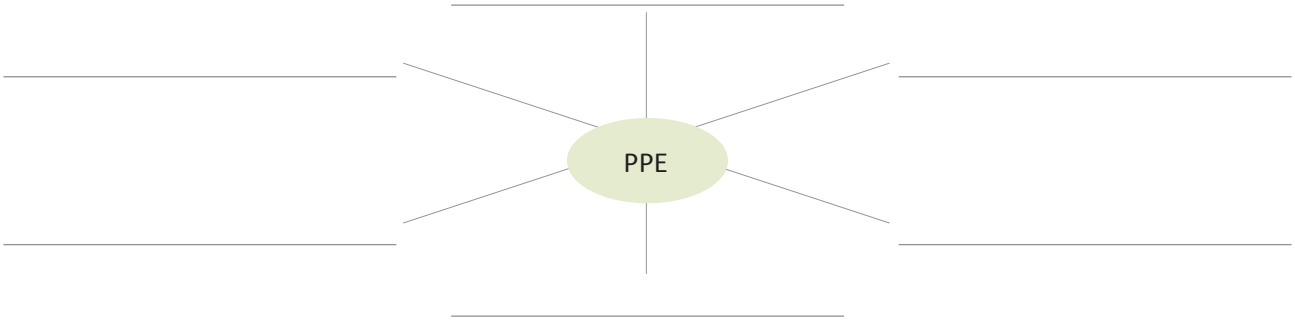
◯ Yes ◯ No

If no, talk to your supervisor.

Tick the person responsible for the tasks below (it could be both the employee and the employer).

Task	Employee	Employer
Identify and manage hazards.	◯	◯
Provide training and supervision	◯	◯
Provide suitable PPE	◯	◯
Receive training	◯	◯
Work to improve health and safety in the workplace	◯	◯

Which items of PPE do you use, or are aware of being used, in your workplace?



9. Answers to activities

3.1 The Act is about making work activities safe and healthy for everyone connected with them.

3.2 The answer will depend on your own situation.

3.3 The purpose of this Act is to promote safety in the community in order to prevent accidents and minimise injury.

3.4 Answers can be any three of the following:

- Hazards are systematically identified, controlled and managed (by eliminating them, isolating them or minimising them, in that order of preference)
- Suitable protective clothing and equipment is provided to employees
- Safety information is provided to all on site
- Training or supervision is provided to employees so that work is done safely
- The health of employees is monitored to ensure that their work is not having a detrimental effect on them
- Employees have the opportunity to participate in all of the above.

4.1 Answers could be any of the following:

	Health and safety responsibilities:
Employer	1 Hazards are systematically identified, controlled and managed (by eliminating them, isolating them or minimising them, in that order of preference) 2 Suitable protective clothing and equipment is provided to employees 3 Safety information is provided to all on site 4 Training or supervision is provided to employees so that work is done safely 5 The health of employees is monitored to ensure that their work is not having a detrimental effect on them 6 Employees have the opportunity to participate in all of the above.
Employees	1 Identify and manage hazards 2 Receive training and supervision 3 Work with the employer to improve health and safety 4 Take action or inaction towards a hazard 5 Responsible for your own safety.
Health and Safety representative	1 Make recommendations regarding how they can be successfully managed 2 Responsible for arranging induction and on-going health and safety training 3 Responsible for putting in place health and safety plans 4 Responsible for reporting new hazards to management.

9. Answers to activities

5.1 The answer will depend on your own situation.

5.2

- To keep you and others safe while onsite.
- Identify a hazard.
- Give the minimum PPE needed for the site and/or give specific safety information.

6.1 Tick the statement(s) that could be defined as serious harm:

- ✔ Permanent or severe loss of bodily function
- ✔ Amputation of a body part
- ○ A cut on the arm that does not require stitches
- ✔ Burns or loss of consciousness requiring specialist attention
- ✔ Sunburn.

6.2

e Machine running with exposed rotating shafts

f No, the machine is necessary to the running of the site

g Yes, the suggestion for isolating the hazard is to place guards around the shafts to stop anyone being exposed to them.

h Yes, the suggestion to minimise harm is for sensors to be used so that if anyone comes within a certain distance of the shafts the machine shuts down or an alarm sounds.

6.3 The answer will depend on the company you work for.

6.4 The answer will depend on the company you work for.

7.1

a The answer will depend on the company you work for.

b All responses will depend on company procedures: examples are given below.

Injuries to personnel – follow emergency procedures, advise supervisor/ management, and complete accident report form.

Chemical spill – use spill kit to clean up and report to supervisor.

A fire – raise the alarm, only fight it if you can do so safely, evacuate the area.

Live electricity – keep yourself safe, keep people away, make the area safe, isolate if possible, advise supervisor.

7.2 Advise your workmate that they must use the correct PPE and if they don't, it is your responsibility to bring it to the attention of your supervisor.

9. Answers to activities

7.3 a & b. The answer will depend on the company you work for and the type of plant you are using. Reference can be found in the approved code of practice for cranes.

7.4

1. **Employer responsibilities:** Trainee should have been supervised. A new trainee without suitable training should not have been working on a live switchboard without close supervision.
   A new hazard identification plan should have been developed between supervisor and trainee to manage and control the additional hazards involved when working on the live board.
   The employer was responsible for providing suitable PPE equipment. We can expect that the employer had an accident and emergency plan in place, that they produced an accident/incident report and reported the accident to Department of Labour within seven days.
2. **Trainee responsibilities:** In the first instance, the trainee should have directed the teacher to the supervisor. If his supervisor had directed him to turn the power on and continue working, the trainee should have identified to his supervisor that he was not trained to work on a live switchboard.
   The trainee should have been wearing appropriate PPE. For example, wearing rubber insulating gloves when the circuit was live.
3. **Electrical hazards:** Electric shock; burns as a result of electrical energy flash; and burns eye and ear damage from molten metal and noise of explosion. Electric shock can also cause a violent muscular reaction that could throw the trainee to the ground or into buildings or machinery. Injuries that could occur as a result include head injuries, broken bones and cuts.
4. **PPE gear:** Flame retardant overalls, safety glasses, hearing protection, rubber insulating gloves, head protection, safety footwear.