Health and Safety Issues in the Solid Waste and Resources Industry
FOREWORD

Determining how to better manage health and safety issues in a constructive and useful way is an important part of improving the performance of a business.

This document is the result of many hours of deliberation and expert advice by members of Safety@WasteMINZ. The first draft drew on successful documents prepared overseas.

Opportunities for others to provide their views on the content resulted in a revised approach more targeted to our operations in New Zealand.

An improved safety culture within the industry is needed in order to make positive changes in the way health and safety is managed. A primary aim of this document is to highlight what should be standard health and safety practice across the solid waste and resources industry. Part one provides an outline of the health and safety legislation in New Zealand. Part two provides information on how health and safety can be managed. Part three of the document provides detailed guidance on standard health and safety practice in the solid waste and resources industry sector.

In time, the work programme Safety@WasteMINZ has in place will result in additional resources being prepared and made available for use by organisations in the industry.

I would like to thank the sub-committee that has done much of the work on this document; in particular Shane Burke and Robyn Stewart of Envirowaste, for without their contribution this document would not have been developed.

ACC has again been very supportive of this project and we would like to acknowledge its significant financial contribution to this project.

Safety@WasteMINZ hopes that implementation of the procedures set out in the document will significantly improve the industry’s health and safety performance.

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**INTRODUCTION**

**Safety@WasteMINZ**

The New Zealand solid waste and resources industry has recognised that a change in culture is required across the industry in order to improve the health and safety attitudes, behaviours and performance of those working in the industry.

A working group was set up in April 2002 to address health and safety issues related to a number of significant events that had occurred in previous years and a generally low level of focus on health and safety throughout the industry. This initial group consisted of members of a selection of waste industry companies including Envirowaste Services Ltd, Waste Management NZ Ltd, Metropolitan Waste, Onyx Services Ltd and Streetsmart.

In 2004 the group was set up as a sector group within WasteMINZ to further the aims of this initial working group.

WasteMINZ is the Waste Management Institute of New Zealand, a non-profit society founded in 1989. Members are from all areas of the waste management world and include collectors and disposers of waste, recyclers, engineers, scientists, educators, government departments, territorial and regional councils, and consultants. Members range from large multinationals and medium-sized businesses to small rural councils and one-person consultancies.

Safety@WasteMINZ is a recognised safer industry group working to improve health and safety in the solid waste and resources industry.
Purpose of this Document

In the first part of this document, a brief outline of the requirements of the Health and Safety in Employment Act 1992 is provided. The requirements are standard across all areas of employment. This section is there to ensure that all those in the solid waste and resources industry are clearly aware of these legislative requirements.

The second part provides some guidance on how to manage health and safety in a workplace and the types of procedure that should be put in place by employers and adhered to by employees.

The third part provides some detailed best practice health and safety guidance in areas of the solid waste and resources industry that have been identified as exposing industry workers to significant risks and hazards. With appropriate implementation, these guidance notes should significantly improve the health and safety culture and performance of the industry.

The document covers:

- Operating waste and recoverable resources collection vehicles
- Plant and fleet
- Workplace hazards specific to the solid waste and resources industry
- Specifications for waste collection vehicles
- Personal protective clothing and equipment.

This document does not replace legislation or relevant New Zealand standards and is designed to complement these documents.
The Industry Strategy and the Future

This document should be read in conjunction with the industry strategy. The strategy sets out an expectation of health and safety performance and a way forward for industry participants.

Health and safety in the solid waste and resources sector is an industry responsibility. Safety@WasteMINZ is committed to working with others in the industry and with partners to ensure positive health and safety outcomes in the solid waste and resources sector.
Part One - The Health and Safety in Employment Act 1992, an Overview

1. Principal Objective

The Health and Safety in Employment Act 1992 has the principal objective of providing for the prevention of harm to all persons at work and other persons in, or in the vicinity of, a place of work by:

- Promoting excellence in health and safety management
- Defining hazards and harm
- Imposing duties
- Taking all practicable steps to ensure health and safety
- Protecting volunteers
- Dealing with employees in good faith/employee participation
- Requiring and enforcing compliance
- Prohibiting indemnification against fines and infringement fees.

Regulations are legally enforceable; codes of practice and guidelines are not mandatory to operate from but are generally considered to be the minimum standard of practice and are based on New Zealand and international standards. These should be referred to when organisations are carrying out their responsibilities.

2. Duties

2.1 Duties of Everyone

The Act places duties on employers, self-employed people and employees to ensure that their work activities do not harm themselves or other people. Other people include site visitors, people passing or around the waste-collection operation, and the general public who may be in the vicinity of an operation.

Any person in control of a place of work (e.g. a principal, contractor or subcontractor) shall ensure that people are not harmed by any hazard resulting from work activities.
2.2 Duties of Employers

2.2.1 General

Under the Act, employers are required to:

- Provide and maintain a safe working environment
- Provide and maintain facilities for the safety and health of employees
- Ensure that machinery and equipment are safe for employees
- Ensure that working arrangements are not hazardous to employees
- Provide procedures to deal with emergencies that may arise while the employees are at work
- Ensure that no action or inaction of any employee while at work harms any other person.

2.2.2 Employers’ duties in relation to managing hazards

Employers shall have a systematic approach for managing hazards at work that includes:

- Identifying new and existing hazards
- Assessing each hazard to determine whether it is a significant hazard
- Managing or controlling significant hazards.

Options for managing or controlling hazards include elimination, isolation and minimisation:

- A hazard shall be eliminated if it is practicable to do so
- If the hazard cannot be eliminated it must be isolated by putting some kind of barrier or distance between the hazard and the person
- Lastly, if the hazard cannot be isolated it must be minimised, for example by following safe work practices, providing suitable protective clothing and equipment, maintaining equipment properly, training employees in safe work methods, supervising untrained or inexperienced employees, and monitoring employees’ health and exposure to the hazard.

The Health and Safety in Employment Act 1992 introduces the term ‘all practicable steps’. When determining whether all practicable steps have been taken, the following must be considered:

- All steps are taken to achieve the result that it is reasonably practicable to take in the circumstances, having regard to:
  - The nature and severity of the harm that may be suffered if the result is not achieved
  - The current state of knowledge about the likelihood that harm of that nature and severity will be suffered if the result is not achieved
  - The current state of knowledge about harm of that nature
– The current state of knowledge about the means available to achieve the result, and about the likely efficacy of each of those means
– The availability and cost of each of those means.

To avoid doubt, a person required by the Act to take all practicable steps is required to take those steps only in respect of circumstances that the person knows or ought reasonably to know about.

2.2.3 Employers’ duty to inform employees

Employers shall inform employees of:

• The hazards to which they are exposed or that they create while at work
• How to minimise hazards to themselves and other people
• Where the necessary personal protective equipment and clothing are kept
• What to do if an emergency arises while they are working.

Employers must also give employees the results of any monitoring of their health or the workplace, ensuring compliance with the Health Act 1956, Sections 22B to 22F.

2.2.4 Employers’ duty to train and supervise

Employers shall take all practicable steps to ensure that employees who do any kind of work, use plant or equipment, or deal with any substance:

• Have the knowledge and experience to ensure that they and others are not harmed
• Are supervised by a person with the knowledge and experience to ensure that they and others are not harmed
• Are adequately trained in the safe use of all plant, objects, substances and protective clothing and equipment provided by the employer that they may use.

2.2.5 Employers’ duty to involve employees

Employers shall ensure that employees are provided with the opportunity to participate in processes relating to health and safety in the place of work.

2.2.6 Employers’ duty with regard to accidents

Employers shall keep a register of every work-related:

• Accident
• Serious harm incident
• Near-miss incident (where someone might have been harmed) involving any person in a place of work.
Employers shall:

- Investigate all recorded accidents, harm and near-miss incidents
- Determine whether they were caused by a significant hazard
- Document remedial action taken
- Notify the Department of Labour of any serious harm accident that occurs at a place of work:
  - Verbally as soon as possible
  - In writing within seven days.

An accident scene where serious harm has occurred shall not be disturbed unless authorised by an inspector, except where necessary to aid the injured person or prevent serious damage to or loss of property.

### 2.3 Duties of Self-Employed Persons

Self-employed persons shall take all practicable steps to ensure that no action or inaction while at work harms either themselves or any other person.

### 2.4 Duties of Employees

While at work, employees shall take all practicable steps (including using safety equipment) to ensure their own safety and that of others and that no action or inaction while at work harms either themselves or any other person.

### 2.5 Duties if You Employ Contractors

Under the Health and Safety in Employment Act 1992, employers have the same occupational health and safety obligations to contractors or contracted labour as they do to their own employees.

Therefore employers need to establish health and safety systems to manage the health and safety of any contractors or contracted labour. Employers are required to take all practicable steps to prevent harm in respect of work over which they have control. Principals cannot contract out their responsibilities for health and safety through contract disclaimer clauses. Principals shall review contractor health and safety management systems prior to letting contracts.

### 2.6 Duties of Persons Who Control Places of Work

People who control a place of work are owners, landlords, occupants, lessees and tenants of workplaces. They must take all practicable steps to ensure that people who are lawfully in the vicinity or at work, including employees, contractors and subcontractors, are not harmed by any hazards.
3. Definition of Serious Harm

3.1 Definition
Serious harm has occurred if any of the following symptoms or conditions results in severe loss of bodily function (permanent or temporary).

3.2 Serious Harm Conditions
The following list identifies conditions that can indicate serious harm has occurred.

3.3 Condition and Cause

3.3.1 Unconsciousness
- From lack of oxygen
- From absorption, inhalation or ingestion of any substance, requiring treatment by a registered medical practitioner.

3.3.2 Hospitalisation
- Any need for a person to be hospitalised for 48 hours or more, commencing within seven days of the cause.

3.3.3 Temporary
- Pain or health impairment that is severe, significantly more than discomfort
- Pain or health impairment preventing use of part of the body
- The condition is likely to be temporary.

3.3.4 Acute Illness
- From absorption, inhalation or ingestion of any substance, requiring treatment by a registered medical practitioner.

3.3.5 Sickness/Illness
- Caused by decompression or from poisoning
- Caused by exposure to infected material
- Cancer.

3.3.6 Disease
- Neurological disease
- Dermatological disease
- Respiratory disease
- Musculoskeletal disease
- Communicable disease.
3.4 **Serious Harm Injuries**

The following list identifies injuries that indicate serious harm has occurred.

3.4.1 **Body part injury**

Any body part that is:

- Amputated
- Burnt requiring referral to a medical specialist or specialist outpatient clinic
- Lacerated
- Fractured
- Crushed.

3.4.2 **Eyes**

- Chemical burn
- Hot-metal burn
- Penetrating wound
- Other vision impairment.

3.4.3 **Ears**

- Noise-induced hearing loss.

4. **Regulations**

The Health and Safety in Employment Regulations 1995 are legally enforceable and stipulate specific duties of employers and others. There are a number of other health and safety-related regulations relating to activities, such as working with asbestos, and prescribed matters that affect the solid waste and resources industry.

4.1 **Employers’ Duty to Provide Facilities**

Employers have a duty to maintain, keep clean and provide access to the following facilities, sufficient for the place of work:

- Washing facilities
- Toilets
- Drinking water
- First aid equipment
- Facilities for employees who become ill at work
- Facilities for changing and storing clothes
• Facilities for meals
• Lighting
• Emergency exit plans.

**4.2 Employers’ Duties: General**

Employers have general duties that relate to the management of particular hazards, for example:

• Working at heights
• Activities under raised objects
• Earthworks and excavations
• Harmful noise
• Cleaning, maintenance and repair of machinery
• Protective structures of self-propelled plant
• Employment of young persons (under 15 years of age).

**4.3 Employers’ Duty: Notifiable Work**

Notifiable work involves, but may not be limited to, activities such as restricted work relating to asbestos, logging or tree-felling, construction work involving the risk of a person falling five metres or more with certain exceptions, erecting or dismantling scaffolding from which any person may fall five metres or more, use of a lifting appliance in certain circumstances, work in any pit, shaft, trench or excavation in certain circumstances, work involving explosives, and work involving breathing compressed air or a respiratory medium other than air.

The Regulations should be checked for specific requirements before commencing any of the activities listed above.

Employees must provide the nearest Department of Labour office with the following details in writing at least 24 hours before beginning any notifiable work:

• Nature and location of the work
• Name, address and contact details of the employer
• Intended date of commencement of the work
• Estimated duration of the work.

**4.4 Other Regulations**

Regulations made under a variety of other legislation may also need to be considered. All relevant regulations must be complied with. A list of regulations relevant to the solid waste and resources industry is contained in Appendix B.
4.5 General Duties of Designers, Manufacturers and Suppliers

Designers, manufacturers and suppliers of plant and protective clothing/equipment have general duties that relate to the safety of their products. Expansion of these duties is contained in the relevant guidelines.

5. Codes of Practice

A code of practice refers to material developed as a guide to employers, to achieve compliance with health and safety legislation (Acts and regulations). An employer may use another way of achieving compliance, however a code of practice may be referred to in a court of law to determine whether an employer has tried sufficiently to comply with an Act or regulation. A list of relevant codes of practice for the solid waste and resources industry, and information on where to obtain them, is shown in Appendix C.

6. Guidance Information

Various publications contain information about the control and management of occupational health and safety hazards in the workplace. A list of some relevant guidance material is contained in Appendix C.
Part Two - Managing Health and Safety

7. General

Systems such as those detailed in New Zealand Standard AS/NZS 4801; 2001 provide procedures for developing and auditing safety management systems.

The most effective way to identify, assess and control health and safety hazards in the workplace is to consult with and involve employees/contractors and employee representatives. A safe system of work means work systems have been designed to ensure that any health and safety hazards to employees have been controlled and are managed.

Factors to consider when designing a safe system of work include the:

- Process
- Pace and flow of the work
- Work practices used
- Design and use of plant and equipment
- Effects of environmental factors.

Elements that contribute to a safe system of work include the:

- Company’s policy and procedures in relation to health and safety, and safe work practices
- Definition and allocation of roles, responsibilities and accountabilities within the workplace
- Arrangements or systems in place to ensure quality of instruction, competency assessment and supervision
- Systems of communication
- Organisation of work including:
  - The speed of work
  - Any production incentives that might affect health and safety
  - Work practices that might encourage unsafe behaviour (for example, ‘job ‘n knock’, ‘job then finish’, i.e. those arrangements where the faster the job is completed the sooner the employee finishes for the day)
  - The traffic around the plant (people and vehicles)
  - Time spent on monotonous or repetitive tasks
  - The amount and type of manual handling required
  - Shift work arrangements
  - The arrangements or systems in place to ensure that employees allocated particular tasks have the appropriate levels of skill and experience
– Work practices and procedures, including maintenance and repair schedules
– Emergency procedures (for example, first aid and evacuation).

All persons in solid waste and resources

• No person shall work under the influence of drugs or alcohol
• No person shall work in a manner likely to cause harm to themselves or others
• Every person undertaking waste recovery work shall be qualified and inducted, competent, undergoing training and/or supervised
• No person shall work on their own unless all practicable steps have been taken to ensure they have a means of getting help in an emergency.

8. Principals

Before commencing operations, principals shall verify that employers or contractors have in place a health and safety management plan that complies with relevant legislation.

Principals shall provide employers or contractors with the opportunity to have input into the planning phase or such documents as are necessary, so that hazards that may arise from the work can be identified or controlled prior to commencement.

Principals shall identify significant hazards that are:

• Caused by operations over which they have control
• Specific to the work area.

They will then supply employers or contractors with information in relation to hazard management.

Principals shall ensure that employers or contractors’ employees are inducted and trained appropriately to perform the work.

Principals shall periodically audit the effectiveness of employers or contractors’ health and safety systems to ensure compliance with the requirements of relevant legislation and industry standards.
9. Employers

Employers shall ensure that a competent person is in charge of each operation, and shall ensure work is supervised and performed in a safe manner.

Employers shall ensure that all employees are properly instructed, and are qualified, adequately trained or under training for the work they are required to perform. Employers shall ensure all new employees are inducted into:

- Legislative and regulatory requirements
- Principal's health and safety systems and policies
- In-house practices
- Hazards
- Codes and guidelines
- Emergency procedures.

Training shall include information on the health and safety issues associated with the tasks and roles to be performed.

Employers shall have in place a systems for managing hazards in each operation and shall provide employees with access to comprehensive information regarding health and safety hazards and their controls.

Employers shall ensure close supervision of employees until they demonstrate they are competent in the work they may have to perform.

Employers shall work to develop an environment where there is no tolerance for unsafe behaviours or acts.

10. Employees

Employees shall follow reasonable instructions and procedures provided by employers.

No employee shall work in a manner likely to cause harm to themselves or others, e.g. by being at risk of impairment through the use of drugs and alcohol, by disabling safety devices, by using items that reduce attention to the task, such as using handheld mobile phones while driving, or by doing anything that impairs the ability to identify hazards or affects communication with other employees.

No employee shall behave in a manner that is likely to cause harm to themselves or others, e.g. by being careless or reckless or failing to take actions to prevent harm.
11. VISITORS

Visitors to a worksite shall have prior approval of the person in charge who shall ensure they are:

- Designated a safe area, or
- Escorted so that they are not harmed in the place of work.

Persons in charge of the place of work shall stipulate the minimum requirements for protective clothing and equipment for visitors.

12. YOUNG PERSONS

Persons under the age of 15 are not permitted in the vicinity of any operation while work is being carried out when:

- They do not have permission from the person in charge or are not under the constant supervision of a responsible person
- There is heavy machinery in use, unless they are isolated from workplace hazards.

13. HAZARD MANAGEMENT

13.1 HAZARD IDENTIFICATION

Hazard identification shall be conducted at any site where work is undertaken, including, but not limited to:

- Maintenance depots or yards
- Public streets
- Construction sites (temporary or permanent)
- Truck stops
- Disposal sites
- Transfer stations, resource recovery parks and cleanfill or landfill sites
- Customer sites.

The following pointers can be used to help identify hazards:

- Observe how each task is done and identify the major hazards
- Utilise the knowledge of other competent people in the industry
- Check workplace injury and illness records
- Talk to employees about any hazards they have experienced or identified.
13.2 Hazard Assessment

The best way to determine priorities for hazard control is to employ a systematic hazard assessment process. Safe systems of work can then be put in place to control the hazards. Many hazard assessments use a risk management approach, which takes into account the likelihood as well the consequence of injury or illness when determining whether a hazard is significant, and the priority for managing the hazard.

When identifying and assessing hazards, employers should consult employee representatives. It is also advisable to involve employees who perform the work, and any stakeholders such as customers and principal contractors such as councils. Hazard assessments shall be documented.

Hazard assessments in the solid waste and resources industry shall involve:

- Analysis of the nature and duration of tasks, the work process and the working environment
- Reviewing instructions provided by designers, suppliers, importers and manufacturers
- Technical evaluations (e.g. ergonomics, maintenance)
- Analysis of near-miss or injury data
- Auditing.

13.3 Hazard Control

Best practice (and New Zealand legislation) involves using a hierarchy of control. This hierarchy requires that where a hazard has been identified.

- A hazard shall be eliminated if it is practicable to do so
- If the hazard cannot be eliminated it must be isolated by putting some kind of barrier or distance between the hazard and the person.
- Lastly, if the hazard cannot be isolated it must be minimised for example by following safe work practices providing suitable protective clothing and equipment, maintaining equipment properly, training employees in safe work methods, supervising untrained or inexperienced employees, and monitoring employees' health and exposure to the hazard.

When determining hazard control measures, employers are required to consult employee representatives.

When implementing hazard controls employers shall:

- Consider the definition of practicability (see 2.2.2)
- Ensure that any new control measure is effective and safe, and that the control measure itself does not create new hazards
- Train the workforce on the control measures adopted, ensuring they are implemented properly
- Regularly review the control measures to ensure they are appropriate
- Consider the hazards associated with the removal of any control measure.
14. General Health

Working hours shall be arranged so as to provide adequate opportunity for rest periods, which should include:

- Short breaks during work hours
- Sufficient breaks for meals
- Daily or nightly rest
- Annual and public holidays, or alternative days
- Compliance with relevant transport legislation
- Actively addressing fatigue management.

Employers shall ensure employees have medical assessments to monitor any effects from exposure to known health hazards associated with their work.

Employers should ensure that employees are educated about the importance of sufficient nutrition and hydration, and a balanced diet, for their health and productivity.

15. Training, Information and Supervision

Employers shall develop and provide access to standard operating procedures for all equipment and processes. Wherever possible employers shall ensure machines and equipment are supplied with information including operators’ manuals that provide full instructions for the equipment’s operation/maintenance.

Employers shall provide each employee and contractor with the relevant information, instruction, supervision and training to enable them to understand the hazards associated with tasks, and to work safely and without causing harm to themselves or others. This includes providing such information in the appropriate language and in a manner that ensures comprehension.

Employers shall maintain records that show that employees have undertaken the necessary training and/or instruction to perform the work safely. Employers shall draw to employees’ attention any known hazards associated with the work, vehicle, plant or equipment upon which the employees will be required to work, and any known or foreseeable hazards in the employees’ work environment. Employees include anyone contracted to perform work. Employers shall ensure that information is understood, taking into account literacy and language.
16. Emergencies

Each workplace shall have procedures that detail the steps to be taken in the event of identified emergencies that may occur in the workplace.

Employers shall have people trained in managing emergencies in the workplace, who include wardens and people trained in first aid.

Employers shall train or induct all employees in the emergency procedures.

Employers shall perform drills or practices for emergency situations and review the performance of these drills and practices.

Employers shall ensure there is a means of communication, wherever possible, at all workplaces in the event of an emergency.

Necessary equipment for managing emergencies such as first aid kits, fire extinguishers and spill kits shall be provided and maintained in all workplaces, including vehicles.

17. First Aid

Each workplace shall have an appropriate number of personnel trained in administering first aid.

A clearly marked first aid kit shall be kept in each workplace; this may include any company vehicle where there is an identified risk. Every kit shall be accessible and kept fully stocked; kits shall be stored so as to ensure contents are protected against contamination by dust, heat, moisture or any other source.

Each workplace shall have a facility where indisposed employees may rest.

18. Workplace Injury Management

While the major focus of this guide is to assist employers to prevent injuries or illnesses occurring at the workplace, it is important to have an effective system in place to manage injuries if they do occur.

Workplace injury management is a workplace-based system that integrates employee management practices, treatment, rehabilitation and claims and hazard management from the onset of an injury/illness for the purpose of achieving a prompt, safe and durable return to work.
An injury management system is part of an overall management system, and includes:

- An organisational structure
- Planning activities
- Identifying responsibilities
- Practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the injury management policy, and injury management activities.

Injury management needs to start before there is a workplace injury. It is important to prepare the workplace to manage the consequences of workplace injuries and illnesses. This can be achieved through the development of a hazard management programme and an occupational rehabilitation programme. Both should be designed to ensure that appropriate actions are taken immediately an injury is reported. Injury management is an active process that involves the injured worker and focuses on:

- Keeping the injured worker at work, if possible, or
- Returning the injured worker to work in a timely manner, and
- Preventing further injuries occurring.

Injury management systems should also involve general practitioners who are knowledgeable about the industry and are able to prescribe appropriate rehabilitation work options for common injury types. Specific obligations with regard to returning injured workers to work, and preventing further injuries, are set out in the Injury Prevention, Rehabilitation and Compensation Act 2001.
Part Three – Health and Safety Practice in the Solid Waste and Resources Industry

19. General Health and Safety Responsibilities in Relation to Plant and Fleet

Employers who are responsible for the selection, purchase or hire, use, cleaning and maintenance of plant and fleet in the workplace need to be aware of the responsibilities of all other parties in the management of health and safety hazards that relate to plant and fleet.

The most common forms of waste-collection machines used throughout New Zealand are:

- Front-loader compactors
- Hook lift systems
- Rear-loading compactors and bin-lifting equipment
- Side-loading compactors and side/bin-lifting equipment
- Tipping trailers
- Transfer trailers
- Various open-top collection methodologies, such as gantry bins
- Stationary compaction systems.

19.1 Employer Responsibilities

The use of plant and fleet poses specific hazards that must be identified, assessed and controlled in compliance with the requirements of the Health and Safety in Employment Act 1992.

Employers are required to consult employee representatives when identifying, assessing and controlling hazards associated with plant and fleet. Employers should consult with the operators themselves, and any other personnel associated with powered mobile plant and other equipment (including maintenance and administrative staff, and other personnel in the same area).
19.2 HAZARD IDENTIFICATION

A checklist is a useful guide to help identify hazards that might threaten the safety of plant and fleet operators and other people in the workplace. Employers must ensure that plant and equipment are properly maintained and inspected on a regular basis in accordance with the manufacturers’ instructions. Records shall be kept of maintenance completed. Where defects pose a hazard to health and safety, such plant and equipment shall not be operated until the defects have been rectified. Any defects in plant and equipment are to be rectified as soon as practicable.

Hazard identification shall be undertaken:

- Before plant is used for the first time or after modifications
- Before any alteration to the plant
- Before any changes are made to the way in which the plant is used
- Before any changes are made to a system of work associated with the plant
- Before the plant is used for any other purpose than that for which it was designed
- If new or additional information about hazards relating to the plant or its associated systems of work becomes available to the employer.

19.3 HAZARD ASSESSMENT

In addition to hazard identification, employers must consult employee representatives when assessing the risks associated with identified hazards. A documented hazard assessment of plant and fleet should take into consideration the likelihood and consequence of injury or illness occurring as a result of the hazards. Hazard assessments shall take into account:

- The systems of work associated with the use, operation, maintenance, service, repair, inspection and cleaning of the plant and fleet
- The layout of and physical conditions in the workplace where the plant and fleet are to be used
- The capabilities, skills and experience of people using the plant and fleet
- Foreseeable abnormal operating conditions for the plant and fleet.

19.4 HAZARD CONTROL

Employers shall take all practicable steps to control hazards in relation to plant and fleet. Some examples of ways for employers to control hazards include but are not limited to:

- Redesigning plant and fleet or the way they are used to eliminate hazards
- Providing safety devices to isolate or minimise exposure to hazards, such as guarding, signage and marking, and emergency equipment including fire extinguishers and personal protective equipment
- Providing operating procedures
• Ensuring employees are competent to operate the plant or fleet
• Monitoring to ensure procedures are followed correctly
• Developing and implementing a preventative maintenance programme.

19.5 Employer Duties for the Control of Hazards in Relation to Operators’ Controls, Emergency Stops and Warning Devices

Employers are required to take all practicable steps to control hazards in relation to operators’ controls, emergency stops and warning devices. Among other things employers must ensure that any operators’ controls for plant and vehicles are:

• Suitably identified so as to indicate their nature and function
• Located so as to be operated readily and conveniently by each person using the plant
• Located so that the operator is not exposed to other hazards such as traffic or pinch points
• Located, designed or guarded to prevent unintentional activation
• Able to be locked out or guarded to prevent unintentional activation
• Able to be locked out to remove any energy source
• Wherever possible, tamper-proof.

19.6 Signage Requirements

Signage and marking provide useful warning of hazards and reminders of safety requirements. However, in terms of the hierarchy for the control of hazards, signage and marking must not be relied on to manage hazards. The message conveyed by signage and marking needs to be supported by appropriate training and supervision.

19.7 Lighting and Warning Lamps

For driver awareness, an in-cab indicator lamp that illuminates during the operation of strobes, beacons, hazard lights and all other lights on the vehicle is recommended. Rear search lamps to assist reversing need to be connected to reverse gear or, where this is impracticable, controlled via an in-cab illuminated switch. It is recommended that additional tail-lights be fitted for rear-loader and side-loader compactor units.

Where plant is operated in low light conditions, appropriate methods for illuminating the work area to ensure optimal visibility are recommended.

19.8 Waste Storage

Storage of waste or recyclables outside the body shall not be permitted unless secured in storage compartments designed for such a purpose.
19.9 Visibility

Operators shall ensure that they have adequate visibility around the perimeter of the plant or vehicle at all times. Where visibility is restricted, alternative methods to improve visibility may include additional mirrors, a points-person, cameras and warning devices.

19.10 Hazards Related to Plant that is Used for Lifting

When plant is used for lifting, employers must ensure:

- That the plant has been designed for the purpose for which it is used
- That lifting attachments are certified, where required, and are appropriate to the load to be lifted
- The load is within the ‘factor of safety’ limits of the plant
- So far as is practicable, no loads are suspended over or travel over a person
- Loads are lifted in a way that ensures the loads remain under control during the activity.

19.11 Design of Plant

19.11.1 Responsibilities of designers

Designers are responsible for identifying and taking all practicable steps to control hazards during the design process of plant and fleet.

They should undertake hazard assessment in relation to:

- Hazards associated with the use of the plant that are specific to the workplace
- The range of environmental locations and operations in which the plant is intended to be used
- Any ergonomic considerations in relation to people who might use the plant
- Guarding of plant
- Warning devices
- Emergency stops.

Designers are also responsible for:

- Providing information to manufacturers and users on:
  - Systems of work
  - Competency of operators
- Record published technical standards or engineering principles used in the design of plant, and providing this information to manufacturers.
Designers should provide information to manufacturers of plant to enable the plant to be built in accordance with the design specifications. This information should include details of:

- The purpose for which the plant is designed
- Any hazard associated with the use of the plant
- Testing or inspections to be carried out on the plant
- The installation, commissioning, de-commissioning, use, transport, storage and dismantling of the plant
- Emergency procedures in the event of plant malfunction.

19.11.2 Ergonomic or human factors to consider in the design of plant

Ergonomics must be considered in the design of plant and fleet.

Ergonomics (or human factors) aims to understand how people and other elements of a system interact. It is the study of human behaviour, abilities, limitations and other characteristics. This information is applied to the design of tools, machines, tasks, jobs, environments and systems ‘Code of Practice for Manual Handling’ Department of Labour.

19.11.3 Design issues for control mechanisms

It is advisable that controls are designed so that:

- Where the controls are located externally, accidental operation cannot occur
- They are positioned to allow ease of operation
- They are ergonomically designed and readily identifiable in all lighting conditions
- Levers are of the deadman type (i.e. ceasing all movement when released)
- They are clearly labelled.

19.11.4 Emergency stops

It is advisable that emergency stops are:

- Mushroom headed or palm type
- Coloured red
- Latch-down (lock-down) manual-reset types
- Clearly labelled and marked
- Capable of stopping all motion immediately the buttons are depressed and/or positively isolated, or dissipating energy supply (except where this may introduce any additional hazard/s).
19.11.5 Designer duties for control of hazards in relation to operator’s controls, emergency stops and warning devices

Designers of plant and fleet shall ensure that specific operators’ controls, emergency stops and warning devices are installed. Ways for designers to comply include but are not limited to:

- Providing vehicles with top-hung tailgates or rear doors with a system to prevent the accidental lowering of the tailgates or rear doors, such as a tailgate prop
- Providing vehicles with top-hung hydraulically operated tailgates or rear doors with a system to control the rate of descent of the tailgates or rear doors to ensure the descent time is greater than 20 seconds
- Providing vehicles with top-hung hydraulically operated tailgates or rear doors with a system to warn bystanders of the descent of the tailgates or rear doors, such as an audible alarm
- Fitting cabs/chassis with intermittent reversing buzzers. The buzzer noise level can be reduced for night use when headlights are on
- Using a ‘tailgate unlocked’ warning system to indicate to operators (visually or audibly) when the tailgate has started to leave the locked position
- Fitting collection vehicles with front- and rear-mounted amber flashing beacons or warning lamps. These should ideally be visible to other road users from a distance of 200 metres around the rear of the machines and placed so as to reduce reflection on mirrors and bin-lift pick-up areas
- Installing emergency stops in a position to which operators have unobstructed access in order to stop immediately all motion of the plant in the event of an emergency.

19.11.6 Interlocks

So far as is practicable, manufacturers and designers of plant and equipment used for waste collection shall eliminate the need for a person to enter the body of a waste-collection plant.

In the event this activity cannot be eliminated, the use of interlocks and emergency stops is required to control energy sources that operate internal mechanisms and the hazards created when accessing the internal body cavity. Lock-out and tag-out systems may also be appropriate.

An exit must be provided from the internal cavity. Each door must have a sign in accordance with procedures for reducing health and safety hazards associated with work in potentially hazardous confined spaces.

Where entry is required to the body, a suitable ladder with an interlock switch must be provided.
19.11.7 Guarding

Examples of hazards that require guarding include:

- All moving parts, including power take-off drive shafts. These should be guarded to prevent accidental entanglement
- Hot surfaces, for example engine exhausts, which should be guarded or positioned to avoid unintended contact.

Where guarding is impractical, adequate warning signs must be employed. Guards must not impede the full view of operators during collection or maintenance.

19.11.8 Hydraulic systems

All pipes and hoses need to be fitted, assembled and retained in such a way as to prevent contact with hot surfaces, friction and any other impact that might damage them.

Hoses and fittings should be placed in such a way as to make visual inspection possible except for those located in frames, ductwork and conduits.

The main pressure control should be set at the manufacturer’s specification, and the control adjustment should be tamper-proof.

Any item of equipment that can be operated in any raised position, such as the lifting arm, tailgate, bin winching or tipping system, needs to be controlled to cease all movement in the event of:

- A failure of hydraulic hose, pipe or fitting
- Shutdown of the hydraulic system via main or emergency stop controls
- Activation of body-lift controls once the hydraulic system has been shut down.

19.11.9 Containment of collected material

Every effort needs to be made to ensure that material remains within the collection body. It is recommended that:

- Liquid retention seals be fitted to all access doors and tailgates to prevent the inadvertent loss of pollutant liquids while waste is being transported
- Rubber flaps or shrouds be positioned around the hopper to reduce the escape of material
- Where appropriate, hopper design minimises air turbulence that may cause waste to blow out onto public roads
- Access points be of a size that allows personnel conducting maintenance, cleaning and sanitising to clean all areas of the machine effectively
- Vehicles be designed with minimal crevices and corners, to reduce the trapping of waste.
19.11.10 Designers’ duty to provide certain information to manufacturers

Designers of plant must take all practicable steps to ensure they provide information to manufacturers. Some examples of ways for designers to comply with this duty of care include:

- Supplying an operation and maintenance manual for the vehicle or plant that is written in a language appropriate for the manufacturer
- Providing adequate information in the manual to enable the machine to be operated safely, and including information such as:
  - Clear, unambiguous instructions concerning the machine’s maintenance
  - Clear guidance on the environmental conditions required for safe working of the machine (for example, avoidance of low overhead electrical lines and unstable surfaces)
  - Readily understandable pictograms to supplement the text as needed
  - Adequate information to enable suitably trained personnel to service and test the machinery with a minimum risk of exposure to hazards.

19.12 Responsibilities of Manufacturers and Suppliers of Plant

Manufacturers and suppliers of plant and fleet need to:

- Comply with the relevant legislation, codes of practice, standards and guidelines for plant
- Ensure that all plant and vehicles are safe to operate and that all hazards are identified and controlled
- Carry out necessary research, testing and examinations
- Make available adequate information about research and relevant tests of the equipment they manufacture or supply
- Make available adequate information about conditions for the safe use of equipment they manufacture or supply
- Provide a manual covering operation, maintenance and servicing requirements that may also include a spare parts catalogue containing all safety-related spare parts and a laminated quick reference guide for each vehicle
- Provide training to customers in the safe use of the plant and equipment to ensure:
  - The plant or equipment is being used as designed
  - The customers are competent in its use.

19.13 Duties of Importers and Suppliers of Plant

Importers and suppliers must check that any documentation from designers and manufacturers confirms that appropriate hazard identification, hazard assessment and hazard controls have been undertaken in relation to the items of plant that they handle.
Importers and suppliers must ensure that documents associated with safe operation and maintenance have been supplied with the plant.

In addition, importers and suppliers must give purchasers the following information:

- The purpose for which the plant is designed
- Any hazard associated with the use of the plant
- Testing or inspections to be carried out on the plant
- Instructions for the installation, commissioning, de-commissioning, use, transport, storage and dismantling of the plant
- Advice on the systems of work and the training required for operators to operate the plant safely
- Emergency procedures in the event of a malfunction.

This information should be supplied in user manuals and manufacturers’ instructions.

19.14 Suppliers Who Sell Used Plant

Suppliers can sell unserviceable/unsafe plant only if it is sold ‘as is’. Otherwise it should be fit for the purpose of use.

It is considered desirable that where a supplier sells used plant (not cabs and chassis), they identify and document any unserviceable components and inform the purchaser in writing that the plant should not be used until it is made serviceable.

19.15 Suppliers Who Hire or Lease Plant

When hiring or leasing plant, suppliers must ensure that it is inspected and maintained (either by themselves or by the operator), and that records are kept to ensure the hazards arising from the use of the plant are eliminated, isolated or minimised so far as is practicable.

Where inspections or maintenance are undertaken by the operator, the supplier must ensure that the operator is competent to undertake the checks and conduct the maintenance required.

The supplier should also ensure that the operator maintains suitable records of checks and maintenance, and that these records are obtained from the operator when the plant is returned. In addition, a supplier of plant must provide appropriate information to the operator regarding safe use of the plant.
20. **Operating Waste and Recoverable Resources Collection Vehicles**

20.1 **Collection**

Employers must ensure that:

- Driving hours meet legal requirements
- Log books, where applicable, are filled out
- Traffic management plans, where applicable, are prepared and available. Implementation of these plans shall include staff training
- Drivers are suitably licensed and trained in the safe operation of any plant or equipment used for the collection of waste or recyclable materials
- Drivers are fully trained in the organisations’ requirements to conduct pre-start safety checks prior to taking vehicles off the employers’ premises
- Drivers are fully trained in the system for reporting defects. Employers must also ensure that defects are reported immediately to supervisors or other people nominated by the employers
- Systems of work do not place drivers in the position of breaching any relevant road or traffic laws
- Vehicles are driven on the left-hand side of the road at all times, except in one-way streets or where traffic signs indicate otherwise
- Drivers do not move or operate vehicles while employees are within the hoppers of the collection vehicles
- Drivers and employees ensure that no person alights from or mounts any moving collection vehicle
- For any employee riding outside the cab of a truck whilst the truck is moving, the maximum speed travelled shall be no more than 20 kph for a maximum distance between pick-ups of 400 metres
- Drivers do not leave mobile garbage bins or recycling receptacles on the road where they might be hit by other vehicles
- Bulk bins are placed where required by local authorities, are visible at all times and, where possible, do not obstruct pedestrian or vehicle movements
- Drivers are trained and instructed in collection practices that ensure the safety of pedestrians and other road users
- Safety devices are not altered or tampered with
- Beacons are activated when collecting refuse or recyclable materials.
20.2 Emptying Collection Vehicles

Employers must ensure that:

- Prior to emptying vehicles, drivers ensure the immediate area around the vehicle is clear of all people
- Drivers ensure that gears are engaged when reversing vehicles
- Drivers check there is adequate space available behind and above the machines to allow full tailgate opening or body-lift movement
- Drivers of side-and rear-loading compactors clear the hopper prior to opening the tailgate, and ensure the tailgate is fully opened prior to ejecting the load from the body.

Employers must ensure that drivers are fully trained:

- In safe operating procedures for vehicles that are equipped with body-lift systems, particularly in relation to checking for stability of the systems throughout their operation. Hazards relating to ground surface, overhead obstructions, wind and possible rollover also need to be taken into account
- In procedures to avoid body/tailgate seal damage, including procedures that ensure tailgates are closed only after moving forward from the tipping location
- To not raise the body on sloped surfaces where there is risk of the truck tipping over, and to move vehicles slowly when the body is raised
- To clear waste from the tailgate seal and from the rear of the machine before leaving the disposal site. Entry to the opened tailgate area should only be permitted when safety props are in position
- To ensure the tailgate is locked (refer to warning lamp indication) after the unloading operation
- To only undertake cleaning of the vehicle body at a designated disposal site or designated wash bay
- To undertake safe clearing of spilt materials on plant or machinery, such as by utilising lock-out and tag-out procedures, correctly installed ladders and harness systems and personal protective equipment.

20.3 Employer Responsibilities for Employees - Training and Supervision

Employers must ensure that employees:

- Keep clear of lifters when hydraulics are engaged
- Undertake collection from the left-hand side of the road. Where this is not possible, systems of work are needed to ensure employee safety during the collection of waste or recyclables from both sides of the road and vehicle. These systems of work shall involve systematic hazard management and be fully documented
• Understand the need for all employees to be aware of the location of other persons engaged in the operation or in the general vicinity of the vehicle or collection equipment

• Remove or secure rings, necklaces or medallions, long hair and loose-fitting clothing when working with or near plant, equipment or machinery

• Understand the safe behaviour and operating procedures required to prevent harm to themselves and others. This includes riding in or on a vehicle, or in or on an object conveyed by a vehicle, in an unsafe or reckless manner

• Only use vehicles, plant and machinery for which they are licensed (if a licence is required by law), and only where they are trained and so authorised by their employers

• Have full training in the system for reporting incidents and injuries involving employees or other persons or the environment

• Have full training in the system for reporting any defect in a vehicle or any plant, machinery, equipment or work system

• Sit in the appropriate seats when riding in the vehicle cabin and wear seatbelts where fitted

• Are trained not to ride on a vehicle, or on an object conveyed by a vehicle, for any distance greater than 400 metres between pick-ups or at a speed greater than 20 kph, for example bag collection runners

• Are trained not to alight from or mount any moving collection vehicle

• Understand and can operate the communication system

• Do not use hands or any implement to clear any bin that is being emptied by mechanical means unless the bin has been removed from the bin lifter

• Do not obstruct their ability to hear (for example, through the use of personal radios) when collecting

• Do not physically enter the body of a compactor unless appropriate isolation procedures are in place.
21. Operating Transfer Stations, Resource Recovery Facilities and Landfills

Employers must ensure, so far as is practicable, that:

- A systematic hazard assessment is performed on the site.
- Employees are fully trained, and where applicable licensed, in the safe operation of plant and machinery, and site operations.
- The area is maintained in a clean state throughout the day and totally cleaned at the end of the day, to eliminate the possibility of disease through dust or an infestation of vermin.
- There is a system in place for shutdown or isolation of activity in the pit, on the floor or in the tip area when persons are required to enter the area.
- All plant and machinery are in a safe working condition and legally compliant.
- There is a system in place for reporting and managing equipment faults.
- Employees are familiar with and comply with the licence or consent conditions of the site.
- Employees are trained to identify and are alert to prohibited waste, particularly that containing hazardous substances which should not be deposited.
- Areas and facilities for safe sheeting and unsheeting of bins and trucks are provided.
- Systems are in place for managing emergencies, ensuring employees, contractors and customers are evacuated from the site expeditiously.
- Appropriate clothing and protection to avoid harm from extreme cold or heat and sunburn are provided.
- Appropriate protection from infection via inhalation, ingestion or laceration is provided, such as washing, cleaning and dust-reduction systems.
- Staff are trained in dealing with difficult customers to avoid, where possible, issues of abuse.
- Where money is taken, systems are in place to reduce the likelihood of or prevent robbery.
- Environmental factors such as bunding and spills are assessed and controls or mitigating measures implemented.
21.1 Transfer Station and Resource Recovery Facilities

Employers must ensure, so far as is practicable, that:

- There is adequate separation of cars and trucks in the waste-receiving area, such as with safety barriers in place at the general vehicle area and traffic management plans
- Signage reflects the rules and regulations of the site
- Customers receive clear directions and supervision when on site and children remain in customers’ vehicles
- There are systems in place for dust control, such as the use of dust-suppressant sprays or the reduction of dust at source
- All conveyors and stationary plant are adequately guarded
- Pits have fall-protection systems
- Separation of materials that require significant exertion is assisted with machinery
- Where employees are involved in repetitive sorting operations, the hazards are managed by ensuring ergonomic, appropriate break frequency and speed of operation
- A bunded container is set aside for any environmentally dangerous waste found, such as batteries and leaking hazardous containers.

21.2 Landfills

Employers must ensure, so far as is practicable, that:

- Surface stability is appropriate for tipping vehicles and under control of a nominated employee
- Roads remain clean and safe and under the control of a nominated employee
- Traffic-control measures are continually in place
- Customers receive clear directions and supervision when on site and children remain in customers’ vehicles
- Adequate direction is given to ensure vehicles are appropriately spaced and that tipping is done in a manner coordinated with the tip area machinery
- Where gas guns are used for bird control, they are operated in a safe manner
- Unstable surfaces are clearly marked
- Vehicle speeds are controlled on site
- Exposure to landfill gas is controlled to prevent inhalation or explosion issues
- All gas cylinders found or noticed in waste are disposed of in the correct manner
- Contractors are managed to prevent the introduction of hazards wherever possible
- Communication is available wherever possible for staff working in remote locations and/or alone.
22. Other Specific Hazards in the Workplace

22.1 Manual Handling

Employers have a duty to manage manual handling hazards systematically. Guidance for this process is contained in the Department of Labour ‘Code of Practice for Manual Handling’ (2001). Some factors to be considered are:

- The use of mechanical aids as part of a no-lift policy
- The layout of the workplace
- The location of objects in well lit areas without slipping or tripping hazards
- Systems of work
- Human factors, fitness for task
- Workloads and speeds
- Ergonomics
- Training and education.

22.2 Work at Heights

Where there are hazards associated with working at heights, employers shall use a systematic hazard management process. Guidance for working at heights is contained in the Department of Labour ‘Guidelines for the Prevention of Falls’ (2000). Some factors to be considered are:

- Avoidance of work at height where employees may fall and cause harm
- Plant inspection, testing, maintenance and cleaning
- Work on sloping or slippery surfaces
- Work being conducted close to edges
- Work in proximity to a hole, shaft or pit through which a person could fall
- Removing obstacles in the work area
- Providing a stable, safe platform from which to perform a task
- Properly used and secured ladders
- Fall-arrest systems
- Training, personal protective equipment, policies and procedures.
22.3 Environmental Hazards

Environmental hazards include elements contained within the environment that can cause harm where work is being undertaken, such as dust, noise, vibration, temperature and poor visual conditions. Some factors to be considered are:

- Elements inherent to the environment, for example exposure to the sun
- Elements that might arise as a result of the work being conducted, for example dust, noise and vibration
- Adjustment of environmental conditions, for example air conditioning
- Hazardous thermal conditions
- Isolation or dampening of vibrating mechanical parts
- Training and education
- Hydration and nutrition
- Workplace stress and fatigue
- Shift work
- Appropriate personal protective equipment and clothing, for example long-sleeved shirts or non-slip footwear
- The level of exertion, for example the speed at which work is performed.

22.4 Noise

Noise is an issue for the waste collection industry in the practices of collecting, transferring and sorting waste. Guidelines for managing hazards related to noise are found in the ‘Approved Code of Practice for the Management of Noise in the Workplace’ (2002). Some factors to be considered are:

- Regularly monitoring workplace noise levels, particularly with changes in processes or plant and machinery
- Engineering controls
- Isolating the noise from employees
- Providing hearing protection
- Training and education
- Baseline and regular health monitoring with employee consent.
22.5 **Electrical Hazards**

Employers must ensure there is systematic management of electrical hazards. Factors to consider are:

- Plant is not to be used if the plant, or the conditions under which it is to be used, gives rise to a hazard of electrical shock due to the presence of electricity
- There is a nearby electrical hazard
- Compliance with the relevant legislation.

22.6 **Biological Hazards**

Work in the waste management and recycling industry can expose employees to the hazard of infection from biological hazards, particularly when handling waste or recyclable materials. Contamination of the solid waste and recyclable streams occurs from a variety of sources; guidance can be found in the ‘Guidelines for Provision of Facilities and General Safety in Commercial and Industrial Premises’. Factors to be considered are:

- Sources of waste, such as medical clinics, vets and tattooists
- Waste types, such as sanitary products and nappies
- Environmental conditions, such as dust that can transport harmful microbes
- Regular cleaning of plant
- Infectious diseases, including hepatitis A, B and C, gastro-enteritis and tetanus, and respiratory and skin diseases
- Good hygiene practices such as hand washing and drying
- Use of personal protective equipment, including gloves, masks, eye shields and goggles
- Appropriate handling and disposal of sharps and other contaminated waste
- Procedures for when hand-washing facilities are not available (e.g. using antibacterial hand wipes)
- Frequent washing/renewal of clothes worn during waste collection, to protect the health and safety of the wearer and others
- Training and education, reporting of illness, policies and procedures.

22.7 **Fatigue**

Examples of symptoms of fatigue are increased error rates, lapses in concentration, increased reaction times, and lack of physical or mental strength. Fatigue can occur as a result of any of the following factors (individually, or in combination):

- Workload factors including:
  - High physical and/or mental workload
  - Low mental workload, or boredom
  - Environmental conditions that increase the demands of work, such as adverse weather conditions or demanding terrain
• Organisational factors such as:
  – Work schedules that do not provide sufficient time for sleep or rest
  – Long hours of work
  – Hours of work that require employees to work or commute during normal sleeping hours
  – Unpredictable hours of work
  – Extended hours of work.

This can be exacerbated by payment and chain-of-supply systems that encourage employees to work when fatigued.

• Individual factors such as:
  – General health
  – Age
  – Gender
  – Nutrition
  – Hydration
  – Duration and quality of sleep
  – Circadian rhythm (the 24-hour biological clock)

• Psychological factors such as:
  – Attitude to work
  – Motivation
  – The use of stimulants to cope with fatigue

• Life away from work factors such as:
  – Family commitments
  – Social commitments
  – Socio-economic factors
  – Commuting
  – Other work
  – Study.

Employers need to assess the health and safety hazards of fatigue and implement appropriate controls. Controls can include:

• Modifying the work design, such as the physical and mental work demands, the work intensity and rest breaks
• Modifying organisational factors such as work schedules, payment systems and chain-of-supply issues
• Modifying environmental factors that contribute to fatigue, such as ensuring a comfortable thermal work environment
• Introducing administrative controls, such as developing work practices to reduce fatigue in the workplace.

Further information can be found in ‘Healthy Work, Managing Stress in the Workplace’.

22.8 HAZARDOUS SUBSTANCES (INCLUDING DANGEROUS GOODS)

Where employees are likely to be exposed to hazardous substances in the workplace, employers need to consult and comply with information on the safe handling of each substance, such as material safety data sheets and any visible labelling on packaging. Waste-acceptance policies need to be developed to identify acceptable, unacceptable and/or unidentifiable wastes and how they should be handled and disposed of.

Where hazardous substances cannot be identified but are inadvertently collected, appropriate hazard controls need to be identified and implemented.

Controls for hazardous substances can include:

• Educating customers and waste producers
• Screening incoming waste at disposal facilities
• Induction and training of employees to identify and manage acceptable, unacceptable and/or unidentifiable wastes
• Introduce waste-acceptance policies
• Segregated storage facilities
• Emergency response procedures, including spill management
• Issuing of personal protective equipment.

22.9 CONFINED SPACES

A confined space is an enclosed or partially enclosed space that is at atmospheric pressure during occupancy and is not intended or designed primarily as a place of work, and:

• Is liable at any time to:
  – Have an atmosphere that contains potentially harmful levels of contaminant, or
  – Have an oxygen deficiency or excess, or
  – Cause engulfment, and
• Could have restricted means for entry and exit.
Employers should ensure that a competent person assesses the risk before entry to a potential confined space. Controls for confined spaces include:

- Permit to work
- Education and training
- Atmospheric testing
- Respirators
- Emergency procedures including communication, stand-by person, and, rescue and retrieval equipment.

Refer AS/NZS 2865-2001 Confined Spaces.

23. Protective Clothing and Equipment

Employers shall provide all appropriate clothing, footwear and personal protective equipment to protect employees from harm due to any hazard in the workplace, and ensure they are used correctly.

- Clothing/Equipment shall be comfortable, correctly fitted, provide appropriate protection and allow free movement
- Clothing/Equipment shall be properly maintained and, depending on the hazards present, shall be of a high-visibility type
- Damaged clothing/equipment shall be properly repaired or replaced
- During the hours of darkness, high-visibility clothing with reflective strips (minimum 150 sq. cm visible on both the front and rear of the garments) shall be worn
- Protective clothing/equipment shall comply with the relevant New Zealand/Australian Standard
- Where workers are collecting bags there should be some type of protection for legs from cuts and punctures
- Footwear shall be suitable for the type of work being performed and location where the work is being performed and, where applicable, shall provide:
  - Support to the ankles
  - Appropriate cushioning and non-slip features
• Hearing protection shall be worn where noise levels are above (or likely to be above) 85dB and elimination and isolation of noise sources are not considered to be practicable. Hearing protectors shall comply with NZS/AS 1269:2005 Occupational Noise Management.

• Eye protection shall be used where there is potential for injury and shall comply with AS/NZS 1337:1992 Eye Protectors for Industrial Applications.

• Gloves shall be used where there is potential for injury and shall comply with AS/NZS 2161 Occupational Protective Gloves.

• Respiratory protective devices shall be used where there is potential harm and shall comply with AS/NZS 1715:1994 Selection, Use and Maintenance of Protective Respiratory Devices and 1716:1994 Respiratory Protective Devices.
24. Appendix A: Definitions

Access doors: Covers that may be readily opened for maintenance and/or service activities, and that should be interlocked.

Act: Any Act of Parliament that places duties on employers, employees and others in order to secure occupational health, safety and welfare in places of work in New Zealand. A list of all relevant legislation is shown in Appendix B.

Commissioning: In relation to plant, means performing the necessary adjustments, tests and inspections before the plant commences normal operation for the first time. This is done to ensure that the plant is in full working order in accordance with the requirements specified in the design of the plant, and includes re-commissioning.

Deadman controls: A control that requires continuous two-handed pressure by the operator.

Factor of safety: The ratio of the breaking load of a component to the maximum design load or stress (when used in accordance with the designer’s/manufacturer’s instructions).

Hierarchy of control: The process of managing hazards as outlined in the Health and Safety in Employment Act 1992, requiring hazards to be (1) eliminated, (2) isolated, (3) minimised.

Kerbside recyclable materials: All food and liquid containers, paper and cardboard emanating from normal household use.

No-Lift: An approach to the collection of waste that, wherever practicable, eliminates the need for manual lifting.

Operation: Use, maintenance, installation and commissioning of plant or equipment.

Permit conditions: Where a waste management operator has been provided written authority under an Act to carry out a particular task. These permits often require certain other conditions to be met.

Plant: Any machinery, equipment, appliance, implement or tool and any component, fitting or accessory in relation to plant.

Plant operator: A person operating equipment such as a forklift, front-end loader, compacting or earthmoving equipment at a depot, landfill (tip) site, transfer station or material recovery facility.

Safe systems of work: The design of work in which health and safety hazards to employees have been controlled. This can include the process, pace and flow of the work, the work practices used, the design and use of plant and equipment, and the effect of environmental factors.
25. APPENDIX B: INFORMATION SOURCES

25.1 ACTS

- Health and Safety in Employment Act 1992
- Injury Prevention, Rehabilitation, and Compensation Act 2001
- Resource Management Act 1991
- Hazardous Substances and New Organisms Act 1996
- Land Transport Act 1998
- Transport Act 1962
- Building Act 2004

25.2 REGULATIONS:

- Factories and Commercial Premises (First Aid) Regulations 1985
- Fire Extinguisher Regulations 1958
- Fire Safety and Evacuation of Buildings Regulations 2006
- Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001
- Hazardous Substances (Classes 6, 8 And 9 Controls) Regulations 2001
- Hazardous Substances (Forms and Information) Regulations 2001
- Hazardous Substances (Identification) Regulations 2001
- Hazardous Substances ( Minimum Degrees of Hazard) Regulations 2001
- Hazardous Substances (Packaging) Regulations 2001
- Hazardous Substances (Tracking) Regulations 2001
- Health and Safety in Employment (Asbestos) Regulations 1998
- Health and Safety in Employment (Prescribed Matters) Regulations 2003
- Health and Safety in Employment Regulations 1995
- Heavy Motor Vehicle Regulations 1974
- Land Transport (Driver Licensing) Rule 1990
- Land Transport (Road User) Rule 2004
26. Appendix C: Information Sources

26.1 Codes of Practice

- Approved Code of Practice for the Management of Noise in the Workplace
- Code of Practice for Manual Handling
- Approved Code of Practice for Training Operators and Instructors of Powered Industrial Lift Trucks
- Liquid and Hazardous Waste Code of Practice.

26.2 Guidelines

- Guidelines for Guarding Principals and General Safety for Machinery
- Guidelines for Provision of Facilities and General Safety in Commercial and Industrial Premises
- Guidelines for the Prevention of Falls
- Guidance Notes for Electrical Interlocking for Safety in Industrial Processes
- Healthy Work, Managing Stress in the Workplace
- New Zealand Draft Guidelines for Waste and Recoverable Resource Collection, Processing and Disposal ‘Operation of Rear Loading Compaction Collection Trucks Safety Requirements’
- New Zealand Guidelines For Refuse Collection, Processing And Disposal Equipment ‘Stationary Compactors: Safety Requirements’
- The Ergonomics of Machine Guarding

All of the above can be found at www.osh.dol.govt.nz.
27. Appendix D: Australian/New Zealand Standards

AS/NZS 2430.3.3:2004  Classification of Hazardous Areas - Examples of area Classification- Flammable Liquids

AS/NZS 1337:1992  Eye Protectors for Industrial Applications


NZS 4503:2005  Hand Operated Fire-Fighting Equipment

NZS 4304:2002  Management of Healthcare Waste


AS/NZS 1269:2005  Occupational Noise Management


AS/NZS 2161  Occupational Protective Gloves

AS/NZS 1716:1994  Respiratory Protective Devices

AS/NZS 2865:2001  Safe Working in a Confined Space

AS/NZS 1319:1994  Safety Signs for the Occupational Environment

AS/NZS 1715:1994  Selection, Use and Maintenance of Protective Respiratory Devices

A helpful guide to making workplaces safer

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Printed April 2007
ACC4049
ISBN: 978-0-479-27980-1
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