# NATIONAL GUIDELINES FOR HEALTH AND SAFETY IN THE MEAT INDUSTRY









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SEPTEMBER 1995

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### Foreword

The *National Guidelines for Health and Safety in the Meat Industry* were developed cooperatively by the Australasian Meat Industry Employees Union and the Meat and Allied Trades Federation of Australia.

The guidelines provide practical guidance on measures that may be put in place to reduce the incidence of occupational injury and disease in the meat industry. The guidelines are particularly aimed at employers, self-employed persons and employees in the industry.

The parties acknowledge the assistance of WorkSafe Australia and the Meat Research Corporation in the editing, production and printing of the guidelines.

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# Part 1—Introduction

### 1. Authority

These guidelines were developed by agreement between employee and employer representatives, and, where other standards are silent, may be considered as the industry standard.

The advice and information contained in this document was prepared to assist employers and employees to meet the requirements placed upon them by State and Territory health and safety legislation, regulations and codes of practice, and Australian Standards referred to in these guidelines.

### 2. Scope

These guidelines apply to workplaces in the meat industry categorised as:

- abattoirs, meatworks and slaughter houses;
- smallgoods manufacturers;
- rendering and tallow manufacturers;
- freezing and cold storage works;
- casing manufacturers;
- retail meat outlets; and
- knackeries and petfood works.

These guidelines do not apply to establishments processing poultry, or to canneries. The general risk identification, assessment and control advice in these guidelines applies to all parts of the workplace. However, it contains no advice specific to the hazards facing administrative staff, for example, risks arising from work with visual display units, or maintenance staff, for example, risks arising from work with welding.

### 3. Purpose

The purpose of these guidelines is to provide practical guidance on measures that may be taken to prevent injury and illness to persons employed in the meat industry.

### 4. Definitions

'The Act' means the relevant State or Territory health and safety legislation: New South Wales Occupational Health and Safety Act 1983; Victorian Occupational Health and Safety Act 1985; Queensland Workplace Health and Safety Act 1989; South Australian Occupational Health, Safety and Welfare Act 1986; Western Australian Occupational Health, Safety and Welfare Act 1984; Tasmanian Industrial Health, Safety and Welfare Act 1977; Northern Territory Work Health Act 1986; and the Australian Capital Territory Occupational Health and Safety Act 1989; or as amended.

'Consultation' means consultation with health and safety representatives, members of health and safety committees, employees and supervisory staff whose health and safety may be affected by the issue under consideration.

'Contractor' means a person or organisation performing work under a contract other than a contract of employment.

'Dangerous occurrence' means an event or situation in the workplace which, although it did not result in injury or disease, presented an immediate risk and involved:

- (a) damage to any classified plant or designated plant, robots or machine guards (where the damage to the guard cannot be immediately rectified), which prevents its safe operation, or endangers the health and safety of persons at work;
- (b) an uncontrolled explosion, fire or escape of gas, dangerous goods or steam;
- (c) an event which was likely to result in an uncontrolled explosion, fire or escape of gas, dangerous goods, hazardous substances or steam occurring;
- (d) an event which was likely to result in substantial damage to property;
- (e) the accidental collapse or partial collapse of any building or structure under construction, reconstruction, alteration, repair or demolition;
- (f) the collapse or partial collapse of a floor, wall or ceiling of a building being used as a workplace (not being a building that is under construction, reconstruction, alteration, repair or demolition);
- (g) the collapse or failure of any excavation of more than 1.5 metres in depth or of any shoring used in such an excavation; or
- (h) a fire or other dangerous occurrence involving dangerous goods, over-exposure, a collapse of ground or rock falls.

'Disease or injury' means an event or situation in the workplace which requires first aid or medical treatment and to which the employment was a contributing factor.

'Employee' means any person employed or engaged in the industry, whether or not the person is so employed or engaged under a contract of employment.

'Employer' means a person or organisation who employs one or more other persons under contracts of employment or under a contract of training.

'Hazard' means the potential to cause harm to the health and safety of persons in the workplace and the immediate surrounds which are under the control of the employer, or anywhere the employee is required to go in the course of his or her employment.

'Incident' means an event or situation that has caused, or has the potential to cause, injury or illness to any person.

'Health and safety representative' means an employee representative elected pursuant to the Act or otherwise elected by the employees to represent them on all matters associated with occupational health and safety. This includes employee members of health and safety committees.

'Non-English speaking employees' are employees whose language skills require the use of languages other than English to receive and understand occupational health and safety information and to participate in the workplace.

'Plant' includes any machinery, equipment, appliance, implement and tool, any component thereof and anything fitted connected or appurtenant thereto.

'Practicable' means practicable having regard to:

- (a) the severity of the hazard or risk in question;
- (b) the state of knowledge about that hazard or risk and any ways of removing or mitigating that hazard or risk;
- (c) the availability and suitability of ways to remove or mitigate that hazard or risk; and
- (d) the cost of removing or mitigating that hazard or risk.

'Risk' means the probability of persons being harmed by a hazard in the workplace, its immediate surrounds under control of the employer, or anywhere the employee is required to go in the course of his or her employment.

'Safety coordinator' means an appropriately trained staff member responsible for the development, implementation and coordination of occupational health and safety programs.

'Self-employed person' means a person who works for gain or reward otherwise than under a contract of employment or apprenticeship, whether or not that person employs one or more other persons.

'Supervisor' means a person employed by the employer to supervise the work of employees.

'Workplace' means any place, whether or not in a building or structure, where employees or selfemployed persons work.

'Zoonoses' means a group of diseases contracted from animals or animal products by humans.

### 5. Role of these Guidelines

These guidelines provide practical guidance to employers, self-employed persons and employees on:

- (a) fulfilling the general duties under the Act;
- (b) means of complying with relevant regulations;
- (c) means of applying other codes of practice which are relevant to meat industry workplaces; and
- (d) identifying hazards in the workplace and applying the principles of risk assessment and control.

These guidelines do not attempt to cover all of the hazards which are likely to be found in the workplace, but aims to provide guidance on how to deal with many of the major hazards which are common in the meat industry.

Persons using these guidelines should ensure that they are read in conjunction with the Act and relevant regulations and codes of practice made pursuant to the Act.

### 6. Duties and Responsibilities

#### 6.1 General

The Act places various duties on all parties involved in the meat industry (these include employers, employees, self-employed persons, contractors, suppliers and manufacturers of plant, equipment and substances) to take responsibility for occupational health and safety by providing and maintaining safe and healthy workplaces and systems of work.

The following is general advice and should not replace a close reading of the Act for specific understanding of the legal requirements.

#### 6.2 Employers

Employers are required to provide and maintain work environments, systems of work and plant that are, so far as is practicable, safe and without risks to health. They are also required to consult with employees, and their health and safety representatives and to provide such information, instruction, training and supervision to employees as is necessary to enable them to perform their work in a manner that is safe and without risks to health.

#### 6.3 Occupiers/Persons in Control of Premises

An occupier of a workplace is required to take such measures, so far as is practicable, to ensure that the workplace, and the means of access to and egress from the workplace, are safe and without risks to health.

#### 6.4 Designers, Manufacturers, Importers and Suppliers

Designers, manufacturers, importers or suppliers of plant (including machinery, equipment, appliances, implements or tools) for the meat industry must ensure, so far as is practicable, that the plant is constructed so as to be safe and without risks to health when properly used. They must carry out any testing necessary to ensure the plant is safe. They must also ensure that adequate information is available about the use for which the plant is designed and has been tested, and about any conditions necessary to ensure that when put to that use it will be safe and without risks to health.

Manufacturers, importers or suppliers of substances for use at a workplace must ensure that they are safe and without risks to health when properly used, and must carry out the necessary testing on them to ensure their safety. They must provide information about the results of tests of substances and about any conditions necessary to ensure that the substances will be safe and without risks to health when properly used.

#### 6.5 Employees

Employees are required to take all the care of which they are capable for their own health and safety and for the health and safety of any other person who may be affected by the employee's acts or omissions at the workplace. An employee must not wilfully or recklessly interfere with or misuse anything provided in the interests of health and safety nor wilfully place at risk the health and safety of any person at the workplace.

### 7. Health and Safety Systems

#### 7.1 General Principles

It has been demonstrated that companies able to achieve superior performance in occupational health and safety are at a distinct advantage in terms of productivity, profitability, quality and competitiveness. To achieve this, a comprehensive approach to the management of health and safety should be established which is based on the best practice principles of:

- strong leadership;
- management and employee commitment;
- consultation and the involvement of employees in the development and implementation of the program;
- integration of occupational health and safety into the overall management system;
- strategies which focus on continuous improvement; and
- the development of skills and expertise which contribute to improved health and safety.

Compliance with legislation should be considered the bare minimum and may form the starting point for achieving occupational health and safety best practice. Companies that are striving for best practice in occupational health and safety experience dramatic improvements and benefits from implementing this broad approach.

A Model Self-audit Checklist to assist companies to assess and monitor their occupational health and safety program is included at Appendix 1.

#### 7.2 Health and Safety Policy or Statement of Objectives

In order for a workplace health and safety program to be effective, there should be commitment from all levels of an organisation. The first step should be the development of an agreed occupational health and safety policy, in consultation with health and safety representatives and employees, that clearly and concisely details:

- management commitment, supervisors' responsibility and employee involvement in occupational health and safety;
- the company's commitment to comply with relevant legislation as a minimum standard;
- a planned, comprehensive approach to occupational health and safety;
- that safe and efficient operations can be achieved with the minimum of accidents and losses; and
- that employee cooperation and consultation to identify priorities is encouraged.

The policy should be communicated to all employees in writing, with due consideration to those with literacy problems, and in appropriate languages.

Evaluation should be carried out to assess the effectiveness of the policy.

A Model Health and Safety Policy is included at Appendix 2. This should be used only as a guide, but may be amended to suit the requirements of particular companies.

#### 7.3 A Coordinated Approach to the Health and Safety Program

The health and safety program should be overseen by a senior manager with authority to allocate resources and order the implementation of corrective actions. Different approaches may be appropriate to different-sized businesses. These different approaches are listed below.

#### (a) Coordinating Occupational Health and Safety in a Small Company

The day-to-day coordination of the health and safety program in a small company would probably rest with the person responsible for overseeing it—the most senior management person at the workplace.

#### (b) Coordinating Occupational Health and Safety in a Medium-sized Company

In a medium-sized company, it is likely that there will be more than one health and safety representative, and more than one employer-nominated management representative, thus the coordination of the health and safety program is more complex.

In overseeing the program, the employer must also coordinate the activities of the health and safety team, which may include the first aid person and maintenance engineer as well as the elected health and safety representatives and nominated management representatives. This role would be best filled by the works manager or equivalent, although the authority may be delegated to another member of staff, such as the Personnel Manager or a senior supervisor.

#### (c) Coordinating Occupational Health and Safety in a Large Company

The task of organising the health and safety program in a large company is likely to be full-time. If a full-time health and safety Program Coordinator is appointed, he or she should be suitably qualified and experienced, and should report directly to the most senior level of management at each location.

#### 7.4 Health and Safety Structures

The next step is to organise a simple and effective structure for administering the health and safety program. Although the structure of a health and safety program may vary from one workplace to another depending on the size and structure of different companies and establishments, its basic elements must be based on the Act. The employer should be familiar with the requirements of the Act, but where the Act is silent on effective representative and consultative structures, the employer should consult with employees and their representatives to develop such structures.

It should be ensured that:

- health and safety representatives and health and safety committees are properly elected and accorded the rights allowed to them under the Act;
- the names of the health and safety representatives, health and safety committee members and management representatives responsible for the resolution of health and safety issues are made known to all employees, in languages other than English where appropriate;
- procedures are developed, in consultation, to allow prompt resolution of health and safety issues; and
- the health and safety program, including the role and functioning of the health and safety committee and representatives, is an integral part of the overall management system.

#### 7.5 Clearly Defined Health and Safety Rights and Responsibilities

#### (a) Management

The commitment of senior management is essential for the success of the health and safety program. Specialist staff may be employed to oversee the program, and many of the employer responsibilities under the Act may be delegated to lower level managers and supervisors.

The number and status of persons who may be nominated as management representatives will depend on a variety of factors such as the size of the workplace and the number and type of hazards that are present. Management representatives and health and safety representatives should work

together to resolve issues as they arise. It may also be appropriate to nominate management representatives for specific issues which affect the whole workplace, such as emergency procedures or first aid.

Employees should be notified of the names of management representatives. If there are workers of non-English speaking background in the workplace, they should be notified in appropriate languages. This notification may take the form of a circular or notice on a notice board.

The responsibilities of managers and supervisors should include the implementation of health and safety policies and procedures, as provided in the "supervision" component identified in the specific employer duties under the Act.

The employer should ensure that the specific health and safety responsibilities of managers and supervisors include:

- supervision of employees' health and safety and, where appropriate, the health and safety of the public;
- implementing the policies and procedures designed to provide and maintain a healthy and safe work environment;
- conduct of workplace inspections and the investigation of incidents;
- negotiating the resolution of identified issues with the health and safety representatives; and
- contributing to decision making on job design, the work process and workplace layout.

For the health and safety program to be effective, all levels of management must be aware of their occupational health and safety responsibilities in the workplace, and of the rights and functions of elected health and safety representatives and committees.

#### (b) Health and Safety Representatives

As with other minimum legal requirements, the rights and functions of health and safety representatives vary from State to State. Broadly, the role of the health and safety representative is to represent the employees at their workplace, or that part of the workplace from which they were elected, on all matters pertaining to health, safety and welfare.

A Summary of Health and Safety Representatives' Rights and Functions under the Act is included at Appendix 3.

#### (c) Health and Safety Committees

In workplaces where a health and safety committee has been established, the action taken on all health and safety issues dealt with should be reported to the next meeting of the committee.

To be effective, the health and safety committee should be made up of a representative cross-section of the establishment. At least half of its members should be employee representatives.

The committee should record all issues successfully resolved, monitor the implementation of agreements reached, and review difficulties in resolving other issues, with a view to improving the procedures for handling health and safety issues.

The committee will therefore have a monitoring and support role. It should not operate primarily as the forum for resolving issues.

#### 7.6 Consultation

#### (a) Nature of Consultation

Consultation between employers and employees is part of a positive approach to the prevention of workplace injury and disease. Most State and Territory legislation provides a framework for consultation to occur between employers and employees on health and safety issues.

For consultation to be effective, health and safety representatives and employees should have access to relevant information. The employer must comply with the legal requirements which relate to the provision of information. Consultative procedures should allow enough time for the health and safety representatives and the employees to consider the information and to discuss it with the employer.

The process of consultation should consider the needs of employees who are non-English speaking. This includes the provision of general information in appropriate languages. It may be necessary to use an interpreter.

#### (b) When to Consult

The employer should consult with health and safety representatives on all proposed changes to the workplace which may affect the health, safety or welfare of employees. By addressing the health and safety implications of proposed change at the planning stage, potential risks to employees' health and safety may be avoided.

Consultation with the relevant health and safety representatives should occur:

- before the introduction of any new plant, substances or processes and before changes are made to existing plant, substances or processes;
- throughout the process of risk identification, assessment and control, including when establishing priorities for assessment and control;
- when a particular control measure is being proposed;
- when the effectiveness of implemented control measures is being reviewed; and



• when developing training programs.

Consultation should also occur with the employees who are exposed, or may potentially be exposed, to hazards in the workplace.

#### (c) Consultation Procedures

Consultation procedures are ways in which employers and employees agree to handle all, or particular, issues as they arise. The employer should ensure that procedures for consultation in the workplace are consistent with the Act, and give due consideration to the language and literacy capabilities of employees.

In workplaces where there is an agreed consultation procedure, the employer should identify all relevant issues and stages on which consultation should occur. Where there is no agreed procedure in the workplace, the employer should develop a procedure in consultation with the relevant health and safety representatives or the employees.

#### (d) Multi-lingual Workplaces

The employer should establish ways for non-English speaking employees to be included in consultation, to join in discussions and consider ways in which hazards can be controlled.

The following methods may be used for consulting effectively with workers who have limited technical or language skills:

- Organise consultation in groups which share the same language.
- Use bi-lingual workers (employees should not be used to transmit specialised occupational health and safety information, but may be able to contribute to good communication in the workplace by using their bi-lingual skills in the performance of their normal duties).
- Use interpreters if necessary.
- Use audio/visual aids in appropriate languages.
- When speaking English, keep it simple and use complete sentences.
- Give only the essential points.
- Demonstrate the point, if possible.
- Check for understanding.
- Use outside services which provide language support.
- Use standard picture safety signs where possible.
- Where word signs are used, ensure that they are short and consistent. For example, there are many different signs used to mean "do not enter": CAUTION DO NOT ENTER, NO ENTRY UNLESS AUTHORISED, NO ADMITTANCE TO UNAUTHORISED PERSONNEL, etc. Standard signs from Australian Standard AS 1319 *Safety Signs for the Occupational Environment* should be used, if there is one with an appropriate meaning.

#### 7.7 Health and Safety Program

#### (a) Procedure for Collecting Information on the Nature of Hazards and Incidence of Injury

The health and safety program should include:

- an effective internal system for the reporting, recording and investigation of incidents, injuries and illnesses; and
- an effective system for the routine collection and analysis of injury/illness/incident data.

#### (b) Process for Seeking Occupational Health and Safety Advice from Time to Time

The health and safety program should include:

- an effective system to determine the need for specialist health and safety skills; and
- where the use of occupational health and safety consultants is being considered, a process of consultation with the health and safety representatives and employees on:
  - the need for a consultant,
  - the development of the brief to be given to the consultant, and
  - the choice of consultant to be used.

#### (c) Means to Regularly Check and Evaluate Prevention Activity against Health and Safety Objectives

The health and safety program should include a process for the setting of priorities for corrective action and regular monitoring of progress towards objectives.

#### (d) Procedures for Identifying Hazards, and Identifying, Assessing and Controlling Risks

The health and safety program should include:

- The conduct of regular workplace inspections and regular hazard audits/surveys of the work areas and work practices, with reference to relevant legislation, standards and codes of practice. Records of surveys should be maintained.
- A scheduled maintenance program which includes requirements of relevant legislation, standards and codes of practice.
- An effective system of induction and job instruction for all employees. An integral part of this training is instruction on the organisation's health and safety policy and procedures. Such training can only be developed after analysis of the work tasks (see Chapter 11 for guidance on training).
- The provision of information to employees which will enable them to carry out their tasks without risk to their health and safety. Such information should be provided in a form that is accessible and easily understood.
- A purchasing system which ensures that the specifications for any item of plant, equipment and substance comply with the relevant legislation, standard or code of practice.
- Adequate emergency procedures to deal with hazards such as fire, ammonia leaks and escaped live beasts.

#### 7.8 Workplace-based Rehabilitation

The major objective of a workplace-based rehabilitation program is to assist in restoring an injured employee to her/his highest attainable levels of function and independence in self-care, vocational and recreational abilities. Rehabilitation may be physical, psychological or vocational.

An effective rehabilitation program is cost-effective for employers because it reduces the amount of time injured or ill workers are away from work. The permanent or lengthy loss of skilled employees can create significant costs to an organisation in such areas as workers' compensation premiums and in the selection and training of replacement staff.

Benefits to employees include a maintenance of social contacts, work habits, morale and work fitness, as well as a much greater chance of return to meaningful and productive work.

Reference to relevant State or Territory legislation and regulations should be made when establishing a workplace-based rehabilitation program. However, the following steps should be included:

- developing rehabilitation policy and procedures in consultation;
- identifying and training an in-house Rehabilitation Coordinator;
- implementing a process for the provision of alternative duties;
- identifying suitable external resources, for example, rehabilitation providers, where appropriate;
- ensuring regular contact is made with injured employees; and
- providing appropriate training and education to ensure there is an appropriate "climate" for rehabilitation in the workplace.

The aim of a return to work program is to achieve a rapid and safe return to normal duties or, if this is not possible, to other appropriate duties, ideally securing the long-term employment of the employee concerned. Employees with work-related injuries or illnesses should have access to an appropriate rehabilitation program. There are substantial benefits in extending such programs to employees with injuries or illnesses that are not work-related. This can be done through consultation.

## Part 2 — Risk Identification, Assessment and Control Framework

Under the requirements of the Act, employers have a duty, among other things, to provide and maintain, so far as is practicable, for employees a work environment that is safe and without risks to health.

To meet this responsibility, the employer needs not only to identify the hazards in the workplace, but the risks associated with those hazards. Once the risks are identified, they need to be assessed before decisions are made about how to control them. To control risks means to eliminate them where possible, or minimise them where it is not.

A hazard is something with the potential to cause injury or illness. A risk is the probability of a hazard resulting in an injury or illness. For example, electricity is a hazard. The risk of electrocution may be assessed as small unless, for instance, installation and maintenance have not been carried out correctly or improper use of electrical equipment is tolerated.

### 8. Risk Identification

Ensuring that hazards are identified is part of fulfilling the general duty that all employers have under the Act, and will assist in creating and maintaining a safe and healthy workplace.

The first stage in the process is to identify which hazards exist in the workplace.

The employer should ensure that hazards and high risk work areas, jobs or tasks are identified and placed in priority order for further investigation. Various means can be used to identify hazards:

- consult with employees;
- undertake workplace inspections/health and safety audits;
- review injury/incident records and reports and first aid reports;
- review maintenance records and reports;
- refer to specific regulations or codes of practice;
- refer to these guidelines;
- refer to guidance notes or publications produced by State and Territory government authorities, Worksafe Australia or Standards Australia; and
- refer to publications produced by employer or union organisations or other industry sources of information.

A Model Housekeeping Checklist is included at Appendix 4.

### 9. Risk Assessment

Risk assessment is the second stage in the process and involves a further investigation of identified hazards to determine the specific factors that cause injury or disease and the relative importance of those factors.

As there may be a number of hazards in the workplace, it may be necessary to prioritise these for risk assessment through consultation, examination of injury/incident records, etc.

Too often, the stage of risk assessment is bypassed. Once the risk has been identified, there is a temptation to immediately assume that the most obvious control measure will suffice. Risk assessment should be undertaken before control measures are decided on, in order to:

- Identify the separate risk factors associated with a hazard. For example, the risk associated with a manual handling hazard would be assessed to identify the separate effects of speed, force, weight, frequency, etc (see Chapter 12).
- Identify the sources of a hazard. For example, measurement of the noise levels in a work area has identified the risk of noise-induced hearing loss, but to accurately assess the extent of the risk, and the capacity to effectively control it, will require the consideration of noise paths, noise emissions and sound power of plant, systems of work and length of employee exposure, among other factors (see Chapter 19).
- Assist in setting priorities for the introduction of control measures, by understanding that a single hazard may be responsible for a range of seemingly unrelated risks. For example, injury records may show cuts to the knife hand and incidents of heat exhaustion. An inspection may show that vision is impeded by excessive steam in the work area. Assessment of the risks associated with steam and the creation of a humid atmosphere may result in control of excessive steam being set as a priority, as it can stop the evaporation of sweat, resulting in slippery knife handles, increased risk of heat exhaustion, discomfort and non-usage of personal protective equipment.
- Ensure that all factors contributing to the risk are taken into account in the development of controls. For example, a risk is identified when a worker slips and falls from a set of metal steps. Non-slip tread is applied to the lip of each step, and the employer is satisfied that the risk has been controlled. Proper assessment of the risk may have shown that the steep incline of the steps and the lack of a handrail contributed equally to the risk. The control method used does not remove or fully minimise the risk.

The methods of risk assessment to be undertaken should be determined with reference to existing occupational health and safety regulations or codes of practice that deal with a particular hazard. However, where such guidance is not available, employers, in consultation, may establish methods on the basis of expert internal advice, or expert external advice from consultants, government departments or other sources of expert advice, such as the Australasian Meat Industry Employees' Union or Meat and Allied Trades Federation of Australia. In addition, a number of general problemsolving techniques may also be applied in assessing health and safety risks. Useful techniques in this regard include brainstorming, cause-effect diagrams and pareto analysis. The methods of risk assessment undertaken should be consistent with the Act.

Once the risk assessment methods have been agreed upon by the employer and employees, assessments for individual risks should be scheduled and progressively undertaken. Records of risk assessments should be maintained.

### 10. Risk Control

There are many ways for employers in the meat industry to control the risks to health and safety in the workplace. Measures which make the workplace safe are likely to be more effective than measures which protect the worker from a hazardous workplace.

For each hazard assessed to be a risk, the employer, in consultation, should determine risk control options and develop a risk control report. These reports should document the risk factors identified, the options for controlling the risks, the agreed risk control measures to be taken in the short, medium and long-term and the agreed timeframes for implementing these measures.

#### 10.1 Planning and Design

The most cost-effective approach to the control of hazards and the reduction of risk, is to include the appropriate controls at the planning and design stages.

When planning or designing workplaces and systems of work, employers, in consultation, should consider potential hazards or risks and remove or control these. Purchasing and scheduling work and the use of substances, plant and equipment should be planned in such a way as to eliminate or minimise risks to health and safety.

#### 10.2 Hierarchy of Control Measures

When adopting measures to control risks, the hierarchy given below should be followed in selecting the approach to be taken. Measures from the top of the hierarchy should be adopted wherever possible, as measures from the bottom of the hierarchy are more difficult to maintain. Measures from the bottom of the hierarchy should be regarded as interim measures until preferred ones can be implemented. A worked example of the application of the hierarchy to one particular hazard in the meat industry appears at Table 1.

In preferred order, the hierarchy is:

#### (a) Elimination

The ideal control solution is to completely remove the hazard or risk of exposure to the hazard. For example, eliminate manual transport of hooks by installing a hook line.

#### (b) Substitution

A hazard might be reduced by substitution of a less hazardous process, substance or item of plant for the one currently used. For example, the substitution of metal hooks with lightweight durable plastic hooks on the chain will reduce noise levels.

#### (c) Isolation

It may be possible to isolate a process to lessen the risk of exposure. For example, use of a cradle design or a fully enclosed knocking box will enable a more controlled transition from the knocking box to the shackling area.

#### (d) Engineering Controls

If a hazard cannot be eliminated, the next preferred measure is to minimise the risk arising from it. This may include modifying tools and equipment, using enclosures, installing guarding or local exhaust ventilation, or automation. For example, acid treatment of floors to lift absorbed fatty substances following by resurfacing using a resin and graphite mixture can significantly reduce slip hazards.

#### (e) Administrative Controls

Where a risk has not been controlled by elimination or engineering controls, administrative controls should be considered next. These involve introducing work practices that reduce risk by limiting the employee's exposure to the hazard. Examples of administrative measures include reducing the number of employees exposed to the hazard, reducing the period of exposure, rotation of appropriately trained employees, adopting purchasing policies which take account of health and safety, procedures for the use of hazardous chemicals and lockout procedures.

#### (f) Personal Protective Equipment

Personal protective equipment should only be used where other measures have not been able to protect the employee against the hazard or risk of exposure to the hazard. Efforts to remove health and safety risks using other measures should continue. It is often difficult to fully protect employees with personal protective equipment. Employees can be required to wear several items at once which affects comfort and restricts performance, and this reduces acceptance of the equipment. Where personal protective equipment is used, the employer should ensure that it fits the employee correctly, training is provided in its need and use, and that the equipment is maintained and serviced regularly. The temperature and humidity of the workplace should be controlled to allow personal protective equipment, where an employer provides suitable personal protective equipment, and the employee is adequately trained in its use, it should be worn.

More specific guidance on the use of personal protective equipment in the meat industry is included in Part 4 of these guidelines.

In many circumstances, it will be appropriate for the employer to use a combination of control measures to minimise risk. The employer, in consultation, should evaluate the control measures implemented to ensure that the risk is controlled and that further or new hazards have not been created in the workplace.

#### Table 1: Application of Hierarchy of Control

#### Noise Hazard—"Silent" Cutter in Smallgoods Production

Controls	Preferred Options
Elimination of noise hazard	Purchase improved machine
If not practicable, try	
Isolation of source of noise	Fully enclose and seal area where cutter is located
If not practicable, try	
	Buffer system
Engineering controls	Better mounting of cutter
	Thorough and regular maintenance program
If not practicable, try	
	Limit time machine is used
Administrative controls	Limit number of employees exposed
	Limit period of exposure of individual employees
If not practicable, try	
Personal protective equipment	Provide hearing protection

### 11. Training

#### 11.1 Duties of Employers

The employer has a responsibility to provide such information, instruction, training and supervision to employees as are necessary to enable the employees to perform their work in a manner that is safe and without risks to health.

#### 11.2 Target Groups Requiring Training

The employer should identify target groups of employees requiring training. Specific groups which should be considered for training are:

- new employees, that is, induction training;
- employees when they are introduced to new or unfamiliar work processes or to new or unfamiliar plant or equipment or when they require retraining, as appropriate;
- maintenance employees, that is, those responsible for the inspection, repair or maintenance of plant or equipment;
- engineers;
- supervisors and managers;
- employees who use personal protective equipment;
- employees who select, distribute and maintain personal protective equipment; and
- employees who design and/or purchase any plant, equipment or substance for use in the workplace.

Further target groups for training should be identified by:

- consulting with employees and relevant health and safety representatives;
- undertaking a training needs analysis; and
- referring to any training requirements contained in legislation or industrial awards or agreements.

#### 11.3 Objectives of Training

Agreed objectives should be developed for training programs, and should include the ability of employees to:

- demonstrate healthy and safe work practices;
- understand the relevant sections of these guidelines and relevant legislation; and
- put into practice the training which has been received.

Where an employee is required to perform more than one function, the employer should ensure that the training provides the employee with the necessary skills and knowledge to perform the range of functions in a safe and healthy manner.

#### **11.4 Content of Training**

The content of a workplace health and safety training program should be tailored to the specific needs of the groups being trained. This applies to induction and on-the-job training. The content should be consistent with the standards set out in legislation and relevant codes of practice.

Training programs for those employed in the meat industry should generally include:

- the nature of the hazard(s) in the workplace;
- the health and safety effects of exposure to the hazard(s);
- the control measures used;
- the provisions of relevant regulations and/or codes of practice; and
- safe work practices.

#### 11.5 Training Methods

When developing and providing training programs, the employer should consider any special needs that the employees being trained may have. Special needs may be specific skills, work experience, gender, physical disability (including injury), intellectual disability, ethnicity and first language, literacy and age. These special needs should be taken into account in the structure, content and delivery of training. This may take the form of oral or highly graphic training methods, or use of a language other than English. It may also be appropriate for the trainer to share a first language, culture or gender with the target group. The employer should refer to any relevant regulations and guidance on training in multi-lingual workplaces.

#### 11.6 Outcomes of Training

The employer should ensure that the outcomes of training for employees include the ability to:

- demonstrate skills in the safe operation and use of relevant machinery and equipment;
- demonstrate healthy and safe work practices relating to the range of tasks in which he or she is employed;
- understand and carry out emergency procedures; and
- understand the relevant chapters of these guidelines and other relevant legislation, regulations and codes of practice.

#### 11.7 Evaluation and Review of Training

Training should be evaluated and reviewed, in consultation, in order to ensure that the content of the training programs is clearly understood by all employees and that the overall objectives of the training programs have been achieved, as well as to identify when further training is required.

The general advice contained in this chapter is applicable to all hazards found in the meat industry. Specific training advice can be found under each hazard chapter in Part 3 of these guidelines.

# Part 3—Common Hazards

This part of these guidelines provides guidance on how to address some of the hazards commonly found in the meat industry. Parts 1 and 2 of these guidelines should be read before consulting this part.

### 12. Manual Handling and Occupational Overuse

#### 12.1 Introduction

Most tasks and activities in the meat industry involve some form of manual handling or physical effort. The *National Standard for Manual Handling* [NOHSC:1001(1990)] defines manual handling as "any activity requiring the use of force exerted by a person to lift, lower, push, pull, carry or otherwise move, hold or restrain any animate or inanimate object".

Studies have indicated that strain injuries are a predominant component of injuries in the meat industry.

When considering the problem of manual handling and occupational overuse in this industry, it should be remembered that the focus of the problem is wider than just that of meat processing works. It is equally relevant to knackeries, smallgoods processing, supermarket meat rooms and retail butchers shops. Manual handling and occupational overuse injuries also occur as a result of performing tasks that are common to a wide range of industries. For example, tasks like packing or wrapping, lifting, pushing or pulling heavy objects or regular over-reaching, for example, to weigh meat on a scale placed too high up, requires just as much attention as do those tasks specific to meat processing such as repetitive small knife movements or processing carcases on the chain.

The *National Standard for Manual Handling* places a requirement on employers to identify, assess and control risks arising from manual handling activities in workplaces.

Two national codes of practice which provide practical guidance on how to comply with the *National Standard for Manual Handling* (and State or Territory regulations that may be based on the national standard) are:

- National Code of Practice for Manual Handling [NOHSC:2005(1990)]; and
- National Code of Practice for the Prevention of Occupational Overuse Syndrome [NOHSC:2013(1994)].

The *National Code of Practice for Manual Handling* provides practical guidance on a systematic approach to prevent or reduce the risk of manual handling injury. This process involves risk identification, assessment and control by redesign, mechanical aids and particular training.

Consultation is part of this systematic approach. The *National Standard for Manual Handling* requires consultation as part of the risk assessment and control processes. Guidance on consultation is provided in Chapter 2 of the *National Code of Practice for Manual Handling*, and in Section 7.6 of these guidelines.

For tasks with repetitive movement, sustained or constrained postures and/or forceful movements, the *National Code of Practice for the Prevention of Occupational Overuse Syndrome* should be consulted.

This chapter includes some meat industry-specific examples of how to comply with the *National Standard for Manual Handling*.

#### 12.2 Design

The *National Standard for Manual Handling* requires employers to take all practicable steps to make sure:

 (a) that the plant, equipment and containers used in the workplace are designed, constructed and maintained to be, as far as workable, safe and without risk to health and safety when manually handled;

- (b) that the work practices carried out in the workplace involving manual handling are designed to be, as far as workable, safe and without risk to health and safety; and
- (c) that the work environment is designed to be, as far as workable, consistent with safe manual handling activities.

It is more cost effective to reduce risk factors at the design stage. Additional costs are incurred in redesigning or modifying plant or processes once they are being used in the workplace.

For example, when designing or redesigning the work area for handling trimmings and inedible material, it is much more efficient to design appropriate chutes with suitable openings than to later either try to put in chutes or have a number of tubs or barrows to handle this material across slippery floors.

Suppliers and manufacturers have an obligation under the Act to ensure that plant and work processes are designed so as to minimise risks arising from manual handling.

The employer should also take manual handling risk factors into account when purchasing equipment. The necessary specifications can be developed in consultation with employees who use the equipment, and then checked against potential purchases.

When developing a checklist for purchase evaluation of new equipment, the following factors may be considered:

- suitability/adjustability;
- compatibility with other equipment;
- efficiency;
- durability;
- movements involved in operating the equipment; and
- compliance with relevant Australian Standards and the impact on health and safety of that equipment.

For example, the size of containers in which chemicals are purchased for the hook room may reduce manual handling. Bulk containers where the chemicals were pumped would eliminate manual handling and additionally reduce waste. Where smaller amounts are needed, smaller units of 10 kilograms or 10 litres may be more appropriate to reduce the manual handling load.

Work practices are also covered by the design requirements of the national standard. There is a need to consider how work is designed in relation to manual handling.

#### 12.3 Risk Identification

The purpose of risk identification is to find out which tasks are causing or have the potential to cause, manual handling injuries and to place them in some order for assessment.

Find out which tasks are causing manual handling injuries by:

#### (a) Looking at Injury Records

Looking at injury records helps find out where and in what jobs manual handling injuries have occurred.

Make sure the organisation's injury report contains enough information to help identify where injuries are occurring. All injuries, near misses and accidents, including those that only result in damage to equipment, should be recorded. Australian Standard AS 1885.1 *National Standard for Workplace and Injury Disease Recording* provides guidelines on the information that needs to be recorded.

Look at:

- the area of the workplace where the injury occurred, for example, in the head skinning area on the beef slaughter floor;
- the occupation of the injured worker, for example, slaughterman on the beef slaughter floor;
- the part of the body injured, for example, shoulder;
- the nature of the injury, for example, strain or cut;
- how the injury occurred, for example, overexertion when lifting a carcase or slip when pushing a barrow; and
- the type of equipment or machine involved.

#### (b) Talking to Employees and their Health and Safety Representatives about their Jobs

Talk to the workers about their jobs, as they are the people most likely to know the risks and hazards. Find out which jobs are most tiring or uncomfortable and are the most disliked. These jobs may need most improvements.

Encourage workers to report pain or discomfort at work. Take all employees' complaints seriously and follow up the reasons why there is a problem. If pain is reported before a serious injury occurs, the workplace can be made safe and the worker's job and personal life will not suffer. Early reporting can make the difference between rapid recovery and a lengthy, serious injury.

#### (c) Watching the Work

Observe the tasks that have caused manual handling injuries or the ones that workers find the most tiring or uncomfortable. Remember that a combination of many risk factors from each task can lead to cumulative strain injuries.

The *National Code of Practice for Manual Handling* contains a Safe Manual Handling Checklist. The general risk identification checklist should be completed to decide if there is a need to assess the task. The employer should ensure that the checklist is completed by an employer representative in consultation with the employee(s) carrying out the tasks and their health and safety representative(s).

#### (d) List and Prioritise

Once there is a general list of manual handling tasks which have been identified as a risk, prioritise them (or place them in order) by combining severity of injury, complaints and the number of "yes" responses to the general risk identification checklist.

It is better to list these tasks and nominate a responsible person to complete the assessment, ensuring consultation between an employer representative, the employee(s) required to carry out the tasks and their health and safety representative(s).
There are many examples of tasks in the meat industry with the potential for manual handling or overuse injuries. Examples can be found in all sections of the industry and may include:

- vacuum packing ("cryovacing");
- moving loaded smoking racks;
- packing and handling of cartons;
- repetitive small knife movements;
- separating viscera;
- changeover;
- plastic wrapping of trays and individual meat parts;
- use of Whizard Trimmer;
- cutting of over-chilled carcases;
- manual emptying of fat barrows;
- conventional sheep dressing and legging;
- pushing carcases;
- working on moving carcases;
- manual lifting of quarters into containers or trucks;
- weighing quantities of meat on poorly located scales, for example, scales requiring constant overreaching; and
- constant work on a narrow range of tasks (overuse of certain muscle groups).

#### 12.4 Risk Assessment

There may be a number of different factors contributing to the risk of manual handling or overuse injury. By assessing a task in detail, it is possible to understand how a range of factors can interact to cause or increase the risk of injury. The employer should ensure that assessment is conducted in consultation. The *National Code of Practice for Manual Handling* and the *National Code of Practice for the Prevention of Occupational Overuse Syndrome* provide guidance on assessing manual handling tasks. The factors that need to be considered when assessing the risks associated with a particular task are:

- actions and movements involved, for example, pushing, pulling or bending;
- layout of the workplace, for example, working space or height of tables;
- posture, for example, stooping or constant reach forward or above shoulder height;
- duration and frequency of activity, for example, repeating same movement often or for long periods;
- distance and time handled;
- force applied;
- weight;

- nature of load, for example, is it hot, cold, slippery or shaped awkwardly?;
- condition of workplace, for example, lighting, slippery floors or smoky or steamy atmosphere;
- work organisation, for example, bottlenecks or staff shortages;
- age of workers;
- skill and experience of workers.

The employer should carry out risk assessment for the manual handling tasks identified as likely to be a risk to health and safety in the workplace, in consultation. The use of the Model Safe Manual Handling Checklist (see Appendix 5) should assist in the assessment of risks and the setting out of risk control options and a risk control plan.

## 12.5 Risk Control

The National Standard for Manual Handling, the National Code of Practice for Manual Handling and the National Code of Practice for the Prevention of Occupational Overuse Syndrome provide a framework for risk control involving:

#### (a) Job Redesign

The aim of job redesign is to make sure that the work content, the workplace layout and the way in which the job is done are all arranged to reduce the risk of manual handling or overuse injury.

Job redesign can include:

- modify the object being handled, for example, purchase substances in smaller packages or change grips or triggers on tools for easier use;
- modify workplace layout, for example, provide adjustable work heights;
- rearrange materials flow, for example, eliminate double handling or use conveyors, chutes, etc;
- different actions, movements or forces, for example, position tools and controls close to employee or change layout to allow worker to use body weight in pushing/pulling; and
- modify task—mechanical assistance, for example, rollers, rise and fall platforms or trolleys.

#### (b) Mechanical Handling Equipment

Mechanical handling equipment can include simple aids, such as levers, hooks, etc; cranes and hoists; positioning equipment, such as lift jacks; and industrial vehicles, such as forklifts.

The equipment should be:

- easy to use and not cause an obstruction;
- designed to suit the load; and
- readily available even in emergencies.

Employees required to use mechanical handling equipment must be appropriately trained in its use.



### (c) Provision of Specific Training

Where a task has been identified as one that poses a risk of manual handling or overuse injury, the risks must be assessed. If redesigning the job is not possible, or if it only reduces the risk, then how to do the job with the least risk should be defined, and form the basis of particular training.

A worked example showing the application of this hierarchy to a specific hazard in the meat industry appears at Table 2.



While this control hierarchy should be followed, in practice, risk control is often achieved by a combination of control options.

A risk control plan that outlines short, medium and long-term goals should be developed for each task assessed to be a risk. The risk control plan should specify timeframes for the implementation of risk controls, and ensure evaluation of all solutions. Refer to Appendix 5 of these guidelines for a completed example of a risk control plan.

## Table 2: Manual Handling Hierarchy of Control

## Waste Product Removal from Slaughter Floor

Controls	Preferred Options	Other Options		
Eliminate manual handling of waste products	Use screws (with appropriate guards)			
If not practicable or sufficient, try				
Redesign of task to reduce risk	Locate waste container close to work station/disposal point			
	Ensure waste container is at suitable height for task	Reduce size of waste containers		
If not practicable or sufficient, try				
Use of mechanical aids to reduce risk	Self-tipping trolleys for waste containers			
	Standard trolleys designed for task: - readily available - easily maintained - proper training in use	Use of hooks to move trolleys		
If not practicable or sufficient, try				
Particular training	Appropriate training for waste removal, including raining for lifting waste containers if necessary			

## 12.6 Examples of Possible Risk Factors and Control Ideas

This section includes some examples of tasks identified as having manual handling risks. The jobs described were all associated with manual handling injuries at one or more of the meatworks visited as part of a project in Western Australia that resulted in publication of *Manual Handling in the Meat Industry* (Department of Occupational Health, Safety and Welfare of Western Australia and Workers' Compensation and Rehabilitation Commission of Western Australia). The ideas for control have been gathered from various sources and are successfully operating in meatworks in Australia.

Although the examples are from the abattoir section of the industry, some will be of relevance to retail and smallgoods establishments.

#### (a) Removing Heads, Trimming and Washing (Beef)

#### **Possible Risk Factors**

- Frequent bending due to the height of the carcase head above the ground.
- Repetitive grasping of face hide in non-knife hand.
- Forceful movement of knife hand often with wrist in awkward position and at extreme of working range of movement.
- Sudden jerk on non-knife arm as head drops from carcase.
- One-handed carry of head over to head rail.
- Distance carried to head rail.
- Awkward lift onto head rail due to height of rail.
- Difficult to get adequate grip of head through jaw or eye socket due to wet, slippery surface.

#### **Control Ideas**

- Raise rail height in head removal area so carcase head is between mid-thigh and chest height of worker.
- Use different shackle lengths for different carcase sizes, that is, big bulls have shorter shackle than baby beef so carcase head stays at about waist height for worker regardless of animal size.
- Provide mechanical means of transferring heads to the trimming line.
- Reduce distance that the head has to be carried by locating the head rail as close as possible to the head removal area.

#### (b) Legging and Leg Removal (Beef and Mutton)

#### **Possible Risk Factors**

- Continuous bending over.
- Frequent forceful gripping of hide or skin with non-knife hand.
- Awkward wrist positions while applying force.
- Arms and shoulders in awkward position away from the sides of the body.
- Twisting of the upper body to reach sides of legs.

#### **Control Ideas**

- Shuffling sideways while working to follow the moving chain.
- Provide appropriate work platform height in relation to chain height so that the carcase leg is between mid-thigh and waist height—first leg will need a different platform or rail height than second leg or a longer hook length—workers on beef may need the leg slightly lower.
- Mutton: provide saddle hook so worker can stabilise the leg at about waist height.
- Consider alternative knife designs that bend the knife handle rather than the worker's wrist—air knives may be more appropriate for legging beef.
- Provide a mechanical cutter for removing hocks, suspended on counter-balanced cable, positioned at about waist height and not obstructing access to the carcase when not in use.
- Provide a chute or container for removed hocks within easy reach to avoid repetitive throwing and positioned in front of or beside the worker to avoid twisting.
- Provide a robotic sensing device and cutter to automatically remove and dispose of hocks.
- Consider alternatives to the continuous moving chain, for example, chain stops at each work position—when the workers have finished their job they push a button and when all the buttons have been pushed the chain moves on.
- Mutton: inverted dressing lines reduce bending by suspending the carcase by all four legs so that the work is about waist height and close to the worker—this may be part of a five year plan of upgrading the plant to increase productivity and improve health and safety.
- Provide particular training in skills and techniques to minimise the force used and reduce awkward body position.

#### (c) Changeover (Mutton)

Also applies to attaching A-frame and lifting forelegs onto rails.

#### **Possible Risk Factors**

- Frequent lifting of weights between 10 and 30 kilograms, at up to nine carcases a minute.
- Lifting the carcase vertically at chest height while unable to hold it close to the body.
- Repetitive one-handed lift while steadying hook with other hand.
- Precise placement of load onto hook or spreader.
- Lifting from below mid-thigh height to above shoulder height.
- Using bent knee to lift carcase, resulting in unstable footing while lifting.

#### **Control Ideas**

- Provide mechanical hoist to lift carcase vertically onto the rail.
- Provide an inclined rail so the worker only lifts the carcase to waist height and the skid is then pulled up by mechanical means to the right rail height for the next task.

- Ensure rail height, hook length and work platform height are matched to suit the task, for example, putting first leg on a longer hook is easier because the leg does not have to be lifted so high—the platform height for the next job may need to be lower as a result.
- Ensure slides and gambrels are stored within easy reach at about waist height.
- Organise job rotation between jobs that involves different muscle groups.

#### (d) Boning and Slicing on the Table

Also applies to trimming and sorting offal.

#### **Possible Risk Factors**

- Weight of cuts of meat that are handled.
- One-handed lifting and carrying of cuts of meat.
- Forward stooping over tables.
- Considerable forward bending of the neck for long periods.
- Repetitive throwing of trimmings, often behind or across the body or above head height.
- Repetitive knife movements, often forceful and with awkward wrist positions.
- Continuous standing for long periods.
- Working in a cold environment.

#### **Control Ideas**

- Organise layout of boners' and slicers' workplaces for easy transfer of product between tables without unnecessary lifting and over-reaching.
- Provide height-adjustable tables to suit the height of the worker and the task being done.
- Provide a table surface that can be sloped towards the worker to reduce neck bending—cuts of meat can be secured on metal pegs at the top edge of the table.
- Provide anti-fatigue mats to reduce the effect of standing on a cold, hard floor for long periods.
- Look at alternative knife designs to reduce wrist and arm strain.
- Position tubs for trimmings and inedible products within easy reach and in front of or beside the worker so it does not involve throwing and twisting.

#### (e) Packing

#### Possible Risk Factors

- Height of packing tables is often too high so that workers are reaching over the sides of the cartons and working with their arms raised.
- Rapid, repetitive movements that are paced by the necessity to keep up with the work speed of boners and slicers.
- Pushing tubs of meat and carrying cartons between packing areas—full cartons weigh up to 27.2 kilograms.
- Repetitive grasping, turning, lifting and placing of large cuts of meat when wrapping or bagging.

- Forward reaching with arms out-stretched to reach meat from centre of packing table or to use scales to weigh meat before packing.
- Repetitive bending to lift large cuts of meat from deep tubs and trolleys.

#### **Control Ideas**

- Design packers' work areas to minimise bending and reaching, using the right height and width of table and a sloped surface so cartons are tilted towards packers.
- Provide bagging horns to reduce the amount of one-handed lifting and handling when bagging cuts of meat.
- Ensure enough space for packers to position cartons lengthways in front of them while packing to reduce forward reaching.



- Encourage packers to fold the sides of cartons down before packing so that they are not lifting cuts of meat over the high sides.
- Provide integrated roller conveyors to transport packed cartons between work areas and organise the workflow to minimise unnecessary handling.
- Provide shallow trolleys at about table height for transferring tubs of meat and cartons to other packing areas.
- Include weighing scales in the packing table surface and within easy reach.
- Design each packing and wrapping task to minimise the number of movements involved and the force required, and teach these techniques to all workers.
- Consider alternative layouts for packing areas that include conveyors from the boning and slicing areas to all packing areas, and the use of buffer areas and revolving tables.

#### (f) Handling Trimmings and Material in Tubs and Barrows

#### **Possible Risk Factors**

- Carrying heavy trays between work areas and across slippery floors.
- Bending and lifting heavy tubs from the floor.
- Lifting and carrying tubs to empty them into chutes.

#### **Control Ideas**

- Provide tubs and barrows that are easy to use—with large wheels, handles that provide a good grip and designed for ease of tipping down a chute.
- Provide gravity disposal chutes or screw conveyors at the work area to transfer material from one area to another without manual handling.



• Provide floor level chutes with appropriate guards and covers and a suitable size opening for emptying tubs and barrows.

#### (g) Load Out and Delivery

#### Possible Risk Factors

- Frequent manual handling when loading delivery trucks and making deliveries.
- Heavy loads.
- Large, awkward items that are difficult to grasp.
- Reaching above shoulder height to remove or attach meat hook while carrying load.



- Carrying load on one shoulder with neck strained sideways.
- Confined space in trucks.
- Slippery floors and ramps, and uneven, poorly lit floor surfaces.
- Stepping down from trucks at loading docks.
- Driving then lifting without warming up stiff back muscles.

#### **Control Ideas**

- Ensure that the section of rail where the hindquarter is lowered after quartering links up directly with the rail to the next processing area to reduce the manual handling of beef quarters.
- Provide gravity rails to load trucks, with an extension of the rail from the loading dock that interlocks with the central rail in the truck interior.
- Provide rails along the length of the truck with gates to enable transfer from the central rail so that carcases can be moved between rails without lifting—rail dividers may be necessary to stop carcases moving forward when the truck brakes.
- Minimise hook changes as far as possible, for example, only change the hook when the carcase is delivered to the customer.
- Provide dock leveller or ramp for truck loading to reduce the chance of trips and falls due to height differences and gaps between the truck and dock.
- Reduce the size of product units, where possible, through negotiation with customers.
- Provide non-slip finish in truck interiors and ensure regular cleaning of truck trays and ramps to remove fat and blood.
- Provide non-slip shoes, gloves and overalls so that the load can be held close to the body.
- Provide adequate lighting at the load out area and in trucks to reduce the risk of trips and falls.
- Negotiate with customers to organise their facilities so that they reduce the manual handling of products during the day.

- Ensure drivers' timetables allow time for rest breaks during the day.
- Provide training in specific handling skills and arrange for new staff to go out with an experienced delivery driver to learn the job.

These examples are by no means exhaustive.

## 13. Slips, Trips and Falls

Employees in the meat industry are exposed to hazards that result in a high incidence of injury arising from slips, trips and falls.

Consultation should take place in accordance with guidance provided in Part 2 of these guidelines when risks associated with slips, trips or falls are identified, assessed and controlled.

## 13.1 Design

#### (a) Workplace Layout

The employer, in consultation, should ensure that when planning or redesigning building layout and purchasing equipment or fittings factors which may result in slips, trips or falls are taken into account and eliminated or controlled.

Factors to be considered when planning workplaces include the following.

#### Floor and Work Platforms

Because of the nature of the meat industry, fat, blood, meat scraps, water and other waste will tend to make floors and work platforms slippery. Floors, pathways and work platforms should be even and nominally horizontal. Any slope for drainage should be minimised wherever possible.

Floors and work platforms should be designed and maintained in a suitable condition for safe use by pedestrians and mobile equipment. Where applicable, they should have surfaces which will minimise the risk of slipping. The hardness of floor surfaces contributes to fatigue if prolonged periods of standing are required of employees.

The area beneath hydraulic platform should be designated a hazardous zone and employees precluded from entering that area during normal working operations.

#### **Electrical Fittings**

The design or redesign of buildings should incorporate the provision of an adequate number of appropriately sited electrical power points in order to remove the need to run electrical leads across aisles, doorways and circulation areas, thereby creating a trip hazard.

#### Lighting

The design of buildings and external workplace areas, including footpaths, pens, stockraces and car parks, should incorporate the provision of adequate lighting.

Specific guidance on workplace lighting is provided in Australian Standard AS 1680 *Interior Lighting* and in Chapter 17 of these guidelines.

#### (b) Systems of Work

When designing systems of work, the employer should ensure that factors which may result in slips, trips or falls are taken into account. For example, trolleys should not be piled so high as to impair the vision of the operator or so loaded as to prevent the operator having sufficient traction or strength to control it. The task should not require walking too fast or running to empty bins.

#### 13.2 Risk Identification

The employer should ensure that areas or processes that result in slips, trips or falls are identified. Information that would assist in this process could be obtained from incident or injury reports and workers' compensation data. Workplace health and safety audits and the manual handling general risk identification checklist provided in the *National Code of Practice for Manual Handling* may also be used to identify risk factors such as slippery or uneven floor surfaces, housekeeping problems, restricted spaces and inadequate lighting.

## 13.3 Risk Assessment

The employer should ensure that the risks identified in relation to slips, trips and falls are assessed. The assessment should take into consideration:

- the nature and condition of the floor surface, including:
  - slip resistance characteristics in both wet and dry conditions,
  - the presence of substances such as water, oil or grease; a build up of water, ice, wax or detergents from cleaning processes; or body fluids including urine or blood on the floor or other walking surfaces,
  - the presence of obstructions or obstacles such as idle trolleys, electrical leads or computer cables in traffic areas,
  - uneven or damaged floors and other walking surfaces such as loose floor tiles and uneven footpaths or roadways,
  - differences in floor levels, for example, stairs, ramps, grates over gutters or drains or lifts not levelling correctly with the floor, and
  - transition between floor surfaces with differing slip-resistance characteristics, including the transition from outdoor paths to interior floor surfaces;
- the layout of the workplace, including the layout of aisles, traffic areas and access and egress from the workplace;
- lighting;
- the design and construction of equipment being used;
- the type of footwear worn including sole material, condition, fit and style;
- work organisation, including the speed and direction of pedestrian traffic; and
- how far an employee may fall.

Slips, trips and falls often occur when employees are carrying out manual handling tasks. The *National Code of Practice for Manual Handling* and this chapter of these guidelines should be used when carrying out a risk assessment of a manual handling task where workplace condition has been identified as a risk (see also Chapter 12).

## 13.4 Risk Control

The employer should ensure that control measures are used to prevent or minimise employee exposure to hazards that may result in slips, trips or falls. It may be necessary to use a combination of control measures to reduce risk as much as possible. The risk control hierarchy described in Chapter 10 should be followed when determining appropriate measures to control risks.



#### (a) Elimination

The necessity to undertake processes or tasks that create or contribute to the hazard should be reviewed and eliminated where possible.

If slip, trip and fall hazards cannot be eliminated, consideration should be given to substituting workplace substances, furniture, fittings, equipment or work processes to substantially reduce the risk factors. For example, if a particular floor surface has been identified and assessed as a risk, alternatives should be investigated. Safety flooring, such as sheet vinyl or synthetic compound rubber sheeting, can be produced with specific slip reducing surfaces and may be a suitable substitute.

## (b) Engineering Controls

Examples of engineering controls that may be utilised to minimise the potential for slips, trips and falls include:

- Treating the surface of existing floors to improve slip-resistance. For example, acid etching, paint and sand grinding and grooving are some methods of doing this. Only methods appropriate for the existing floor surface should be used.
- Providing handrails for stairs and ramps and installing railings to guard openings and edges where there is a risk of falling to a lower level. Edge markings in a bright contrasting colour should be provided in situations where a guard rail is not feasible, such as on truck loading bays.
- Stairs, steps or ramps could be fitted with slip-resistant tread or surface.
- Minimising the incline of access ramps to make access easier.
- Using a protective strip to cover a joint between different types of floor coverings adjacent to one another.
- Ensuring platforms in work stations have suitable restraints to reduce the risk of workers falling.
- Illumination levels that allow work to be performed safely and without risk to health, and allow safe movement from one area to another.

#### (c) Administrative Controls

Examples of work practices that may be considered to reduce exposure to slips, trips and falls include:

- Restricting access to areas where hazards exist that may result in slips, trips and falls, and appropriately signposting these areas.
- Maintenance procedures that include the prompt reporting and repair of leaks from equipment or fittings.
- Designing routine cleaning procedures to minimise the risk of slips, trips and falls. Cleaning procedures should incorporate the following practices:
  - consideration should be given to performing cleaning procedures at times which minimise the number of employees exposed, and
  - keeping external paths or ramps free of a build-up of leaves, soil, moss or algae.
- Maintenance programs to minimise the risk of slips, trips and falls.

#### (d) Personal Protective Equipment

Where it is not possible to achieve adequate control of exposure to hazards by the above control measures, the provision of suitable footwear with slip-resistant soles should be considered. Procedures should be established for ensuring that footwear is maintained in good condition. Hard hats should be supplied and worn as necessary.

## 13.5 Training

Where there is exposure to hazards that may result in slips, trips or falls, the provision of appropriate training should be provided.

Chapter 11 of these guidelines provides general guidance on developing an occupational health and safety training program. The content of a training module on slips, trips and falls should be tailored to the needs of the group of employees being trained, but should generally cover:

- the types of hazards that may result in a slip, trip or fall;
- the types of injuries caused by slips, trips and falls;
- the control measures used, including safe work practices, and the consequences of not following correct procedures; and
- when and why footwear with slip-resistant soles should be worn.

The employer should ensure that the outcomes of training for employees include an awareness of the slip, trip and fall risks associated with the employees' work areas and of the measures used to control the risks.

## 14. Physical Injuries from Animals

In the meat industry there are hazards which may arise in the process of the transport, droving, yarding, slaughtering and dressing of animals. Employees working in these areas should be experienced in handling animals.

## 14.1 Transport and Receipt of Animals

Employees involved in the transport of animals or handling of animals in receiving yards are at risk of being struck, crushed or kicked by animals.

The employer should ensure when planning or redesigning the layout of receiving yards, buildings or systems of work that the risk of injury to an employee arising from animals is taken into account.

Design features that address the risk of injury to employees from animals include:

- Livestock yards and other enclosures should be designed for the type of stock to be received, for example, cattle yards require higher fence barriers than sheep and pig yards, while deer require darkness and complete enclosure.
- The area in which an employee may work with animals should be large enough to perform the task being undertaken. The area should be free of sharp, angular or protruding objects against which an employee may be crushed.
- All pens and races should have escape routes, bollards or other appropriate protection for employees in the event of animals charging.
- The opening and closing mechanisms or gates should be easily operated and routinely maintained.
- Adequate lighting should be provided particularly where the receipt of livestock may occur in darkness or in areas such as sheds with low levels of natural light.
- The construction of floor surfaces of pens, races and yards should prevent the build-up of blood, body fluids and water which would make the floor slippery. The floor should be self-draining and easily cleaned.

## 14.2 Slaughter

The employer should ensure that the knocking box or restraining crush and the adjacent areas are adequately designed to minimise the exposure of employees to injury from animals during the slaughtering process. The following design requirements should be met:

- The knocking box should be designed to minimise the risk of an employee falling in. All enclosures should be designed to minimise reaching and bending over.
- An employee operating the release of the knocking box should be able to see other employees working below the box when releasing a stunned animal.
- An audible or visual signal can be used to alert employees that a stunned animal is being released from the knocking box or restraining crush.
- Barriers should be provided around the work area to prevent improperly stunned animals endangering employees.
- Safe escape routes for workers in sticking pens should be provided.

Safe work practices can also minimise the exposure of employees to injury from animals. Access to the knocking box, restraining crush and adjacent area should be restricted to appropriately trained and protected employees.

Employees are at risk of injury from inadequately stunned animals when they enter enclosures to shackle or stick a kicking animal. They are further at risk if an animal falls from the shackling chain. Work practices and other controls that can minimise the risk of injury from this process include:

- only allowing one animal at a time to be stunned;
- providing a second readily accessible stunning device in the event of failure of the first device;
- employees should be trained to identify the signs of improperly stunned animals;
- stunning devices, rails and shackles should be regularly inspected and maintained; and
- secure storage facilities should be provided for stunning devices and detonating devices.

## 14.3 Escaped Animals

Large animals that have escaped and pose a threat to the safety of employees may need to be shot if they cannot be restrained or contained in a particular area.

An employee using a firearm must have the relevant endorsed shooters licence and firearms should be stored in a lockable cabinet. The calibre of firearm used should be large enough to ensure death from a single shot.

Other employees should be cleared from the area where a firearm is to be used. Where this is not possible, they should stand behind the marksperson. Prior to discharging a firearm, consideration should be given to the line of fire, to ensure safety in the event of a missed shot. The animal should be shot at as close a range as possible to minimise the possibility of the bullet ricocheting and to provide maximum impact. The firearm should not be fired while the animal is moving its head.

Two guns should be available, in case one falls into the enclosure with the animal.

## 15. Occupational Diseases

## 15.1 Zoonotic Diseases

Employees working with live or slaughtered animals are at risk of contracting several zoonotic diseases, most notably Q fever. Other diseases include brucellosis, leptospirosis, anthrax, hydatid disease, erysipeloid, orf, salmonellosis, tetanus and tuberculosis.

Some longer-term employees may build an immunity to Q fever. People who have not built up this immunity are at special risk. This includes visitors to the workplace, new or casual employees and employees who do not normally work on the slaughter floor, such as maintenance or office staff.

It should be emphasised that the incidence of zoonotic diseases in the meat industry is relatively low and risk is small. However, if contracted, the impact of zoonotic diseases can be profound.

Risk areas include abattoirs and slaughterhouses, knackeries and animal by-products establishments, for example, rendering works and casing factories. A very low level of risk exists for workers employed in boning rooms separate from abattoirs, smallgoods establishments with no slaughtering capacity and retail outlets.

As with other occupational hazards, identification and assessment of the risks associated with the hazard needs to be undertaken and control measures implemented in accordance with the hierarchy of control.

## (a) Risk Identification

Table 3 lists the three zoonotic diseases of major concern to meat industry workers, the source of infection and methods of transmission. From this base, it is possible to determine which areas of the workplace may harbour sources of infection. There is minimal risk of contracting these three diseases if the stock being handled are not infected. However, as it is rarely possible to identify an animal infected with leptospirosis or Q fever, steps should be taken to identify, assess and control potential risk.

Disease	Source	Method of Transmission	Potential Risk Areas
Leptospirosis	Urine of infected cattle, pigs and and horses	Penetration of leptospires through abraded (possibly intact) skin, oral, nasal and conjunctival routes	Stock transport vehicles, yards and pens, kill floor, and skin shed
Q fever	Foetuses, placenta, faeces and milk of infected cattle, sheep and goats	Inhalation of contaminated aerosols and dust, contact with infected animals and contaminated articles such as straw, wool, hair and hides	Stock transport vehicles, yards and pens, kill floor, offal room, slink room, skin shed and rendering area
Brucellosis NB: Cattle are declared brucellosis free in all states except the Northern Territory	Aborted foetuses, placenta and vaginal discharges, faeces, raw flesh and milk of infected cattle, goats and feral pigs	Direct or indirect contact with infected materials, organisms penetrate the skin and conjunctiva (eyes), oral and nasal inhalation of infected dust and aerosols	Stock transport vehicles, yards and pens, kill floor, offal room, slink room, skin shed and rendering area

#### **Table 3: Three Zoonotic Diseases**

#### (b) Risk Assessment

After the potential high risk work areas have been identified, an assessment of the particular risks in those areas needs to be undertaken. This should be done in consultation.

Table 3 above identified areas of potential risk. One of these areas is a beef kill floor. Assessment of the risks in this area requires a further breakdown, and an understanding of the risk factors, keeping in mind the methods of transmission detailed in the third column of Table 3 above. This is shown in Table 4.

Exposure to faecal contaminated dust	Dag removal, sticking, skinning hind legs of carcases contaminated by caked mud and dags
	Disposal of condemned carcases
Splash of urine, milk or birth fluids	Removal of anus, vulva, tail, udder, bladder, uterus, evisceration
	Process for disposing of these parts (including placement of chutes)
	Slaughterers' skill levels
	Automatic hide removal (can result in urine spillage)
	Number and placement of workers likely to be splashed
	Systems for immediate clean-ups
	Access to hygiene facilities
	Protective equipment supplied, if any, and capacity to wear it
Creation of aerosols	Water temperature Drainage (pooling, high drops) eaning systems (pressure and temperature of clean-up water)

Floor should Include Consideration of:

#### Table 4: Assessment of Risks on the Beef Kill Floor

If the Risk Factors are:

#### (c) Risk Control

Having identified and assessed the risk factors, employers should, in consultation, develop risk control measures and timeframes for implementing those measures.

The prevention of zoonotic infection will involve a range of control measures. The sequence of control options, or hierarchy of controls detailed in Chapter 10 of these guidelines should be followed.

The general principles which apply to the prevention of zoonotic infection include:

 design of the workplace and individual work stations to reduce the risk of contamination and infection;

- systems for the treatment of suspect stock or identified "brucella reactor" animals;
- laundering of all work clothing on site or by a professional off-site laundry;
- work practices which minimise the risk of contamination and infection;
- adequate personal hygiene facilities and proper use of these;
- an occupational health program which includes relevant vaccination and first aid facilities;
- provision and use of equipment including personal protective equipment designed to minimise the risk of contamination and infection; and
- training for all employees on the risks of zoonotic infection and possible control measures, and for those employees engaged in high-risk tasks, skills training to assist them in identifying and controlling the risks.

#### (d) Design

The employer should ensure that:

- Hand washing facilities are provided to be readily accessible to all workers at appropriate intervals. The water supply should be delivered via a single outlet at a temperature of 35°C to 40°C, and a hand washing basin with foot or thigh pedal activation provided.
- At the exit door, a liquid soap dispenser, a paper hand-towel dispenser and a wastepaper bin is provided.
- Ventilation in slink rooms or condemn rooms is monitored to detect the formation of still pockets of air. If still pockets of air occur, the ventilation should be modified to prevent this.
- Air conditioning and ventilation systems minimise air exhaust from areas of high risk to be dispersed through other parts of the abattoir, for example, separating intakes from exhaust vents.
- Chutes for offal, slinks and carcase remnants are properly fitted with flaps or covers to deny the escape of aerosols from slink or condemn rooms or screw conveyors to other parts of the abattoir.
- The abattoir, including yards, rendering areas and skin sheds, is designed and maintained to ensure efficient drainage and prevent the formation of puddles.
- Where stock affected by mud, dags and caked manure are regularly submitted for slaughter, any work station where such are removed from the hide should, where necessary, be equipped with ventilation and exhaust systems to reduce the dispersal of dust.
- Yards and holding pens are designed and maintained to ensure easy cleaning and quick drainage of urine.
- Liquid soaps contain a bacteria-static agent and an additive to prevent hands from drying and cracking.
- Floors in change rooms and amenities are cleaned daily with a fungicide/germicide and showers have rapid drainage facilities.

#### (e) Program to Control the Spread of Zoonotic Diseases

#### Vaccination Programs

Vaccination programs may form a part of a health surveillance program. If vaccinations are used, the following are important considerations which should be taken into account by the employer:

- medical practitioners employed to provide such vaccinations should have adequate practical knowledge in the process of administering Q fever vaccinations;
- the vaccination program is made available to all employees at risk working in an abattoir or knackery; and
- the vaccination program should include advice to employees of all factors relevant to such vaccinations, including the benefits of being vaccinated and the risks and potential hazards of not being vaccinated.

#### First Aid Programs

In the meat industry, it is necessary to maintain a high standard of hygiene in the workplace.

Availability of first aiders trained to a standard that will ensure that they have the skills to manage injuries common in the meat industry, such as lacerations, and access to appropriately equipped first aid rooms/kits, should encourage prompt, appropriate and effective first aid.

Further information on first aid is provided in Chapter 23 of these guidelines.

Assessments to establish appropriate first aid provisions need to take into account the nature of the hazards in the work.

In the meat industry, particular plans may need to be adopted to ensure that:

- prompt cleaning and dressing (with waterproof bandages) of all lacerations is carried out;
- employees who are splashed with animal products in the eye, nostril or open mouth are:
  - trained to ensure that they immediately wash their faces and rinse their mouths, and
  - have access to facilities to do so;
- employees with cuts on their hands or arms requiring suture should get direction from the treating medical practitioner regarding suitability to work in specific areas;
- in pig dehairing areas, suitable first aid kits to deal with pig bristles in the eyes and under nails are available; and
- in rendering areas, first aid kits are equipped to deal with burns and dust in the eyes.

#### (f) Work Practices

The employer should ensure that:

- The work methods for handling animals are such that there is negligible contamination of the carcase, employees and equipment, hide or fleece by urine, faecal material, intestinal contents, milk or birth fluids.
- Work practices are such that the unnecessary slicing of lesions of potential infection is avoided.
- Every effort is made to ensure that employees do not contact urine or urine-contaminated material unless wearing personal protective equipment.
- Contamination of any type is removed from carcases to prevent contamination of employees further along the production line.
- Livestock identified as potential zoonoses carriers are slaughtered at the end of the work day, with particular care being taken in the handling and disposal of reproductive and other organs.

- Within the boundaries of a meatworks, dogs used to move livestock are muzzled to ensure that they cannot eat potentially infected offal and thereby become a source of tapeworm or hydatid infection.
- Personal and soiled work clothing are not stored together in lockers, and that laundering of work clothing be conducted by the employer with a view to minimising the risk to employees who would normally launder work clothing at home. Export Meat Orders prohibit the storage of any work and personal clothing together in lockers.

#### (g) Personal Protective Equipment

The employer should ensure that:

- All employees are provided with personal protective equipment appropriate to the tasks to be performed. Some examples are:
  - all tasks-non-leaking boots,
  - when known "brucella reactor" animals are being processed—disposable gloves, goggles and surgical masks or full-face protective shields for all slaughterers. This disposable equipment should be burnt after use,
  - for eviscerators—goggles and surgical masks, and
  - for the bleeding and skinning of slinks—plastic aprons, gloves and eye protection.
- Employees bleeding and skinning slinks should change into a clean set of clothing before breaking for smoko or lunch, if there is any contamination of their clothing by blood or birth fluids.

## 15.2 Infectious Diseases

Due to the relatively high incidence of cut injuries in the meat industry, consideration should be given to the possible risk of transmission of infectious diseases, such as Hepatitis B and the human

immunodeficiency virus (HIV), which may arise from contact with human blood. In the workplace, the circumstances under which this could potentially occur is in the provision of first aid treatment.

The risk is generally low and can be minimised if infection control procedures are followed. The underlying strategy should be to consider all human blood, other body fluids and body tissue as potentially infectious. Procedures to follow are:

- First aid boxes should include appropriate disinfectants, disposable plastic or latex gloves and one-way mouth pieces suitable for mouth-tomouth resuscitation. Suitable disinfectants include:
  - bleach in water, for example, household bleach or Milton solution, freshly prepared at a concentration of one per cent; and
  - disinfectants containing iodine, for example, Povidone-iodine or Betadine.



- Hand washing after administration of first aid is essential.
- Cover open cuts or sores with waterproof bandages or dressings.
- Wash the hands and any other surfaces of the body splashed with blood as soon as possible.
- Carefully mop up spilt blood and then clean surfaces with disinfectants.
- Safe disposal procedures should be developed and implemented.
- Wash soiled equipment in cold water and detergent for 10 minutes or wash with disinfectants. Gloves should be worn when handling and cleaning equipment.
- Wear protective clothing such as gloves, masks, goggles, etc if it is likely that the skin, eyes or mouth will come into contact with human blood.
- All employees exposed at work to potentially infectious material, that is, first aiders, should be involved in the development of safe work practices, trained in the use of those safe work practices and provided with facilities so that those safe work practices can be implemented.
- Vaccination (against Hepatitis B) should be offered to first aiders.
- For one-off accidental exposure by employees to potentially infectious materials, the employer should ensure that procedures are in place for medical assessment of the employee and for treatment, if required, with hyperimmune immunoglobin given immediately after exposure.
- Workplace policies to prevent and control the transmission of infectious diseases should be:
  - communicated to all concerned,
  - continually reviewed in the light of new scientific information,
  - monitored for successful implementation, and
  - evaluated for effectiveness.

Further guidance is available from the National Consensus Statement on AIDS and the Workplace [NOHSC:6001(1993)] and the National Code of Practice for Health Care Workers and Other People at Risk of the Transmission of Human Immunodeficiency Virus and Hepatitis B in the Workplace [NOHSC:2010(1993)].

#### 15.3 Skin Diseases

Hazards which contribute to the risk of skin diseases for meatworkers include:

- chemical agents—both organic and inorganic substances, including the by-products of the production process, soaps and detergents;
- physical agents—including mechanical effects, heat, cold, water, relative humidity and sunlight; and
- biological agents—including bacterial, viral and fungal infections (this includes zoonotic infection).

Dermatitis is a general term used to describe any inflammation of the skin. Irritant contact dermatitis is limited to the area of skin that has come into contact with the agent causing the irritation. Allergic contact dermatitis, while it may be similar in appearance, is an allergic response to contact with a sensitising agent, such as a particular type of soap, and may affect areas of the skin that have never contacted the agent. Even a slight subsequent exposure to the same sensitising agent may cause the allergic response. Chemical agents in the meat industry which might cause dermatitis are not limited to purchased substances—by-products of the slaughtering process, such as stomach bile and blood, may cause irritation or allergic response in some employees.

The risks of skin disease occurring from exposure to a chemical or biological agent are increased by exposure to physical agents. Any break in the surface of the skin increases the risk. Thus cuts, abrasions, raw spots and calluses, caused by friction, burns and cracking from the drying effects of constant hand-washing, can increase the risk of skin disease. Prolonged contact with water or other solutions (including sweat) softens and weakens the skin. This increases the risk not only of dermatitis, but of bacterial infections such as paronychia, which is an infection around the fold of the fingernails.

Zoonotic infections which affect the skin include orf, anthrax and erysipeloid. Transmission of these diseases is most commonly through breaks in the skin. Identification of these risks requires not just a focus on work practices and first aid procedures, but a recognition of infected animals, for example, in sheep, orf causes scabby mouth.

Assessment of the risks of skin disease in a workplace should be based on an understanding of the combined effects of various agents, and an evaluation of working conditions and work practices (including first aid procedures).

Implementation of the risk control measures outlined in the sections of these guidelines for heat, cold, hazardous substances and zoonotic diseases, and advice on training, provision of protective clothing and first aid will all contribute to the control of the risk of occupational skin diseases.

The evaluation and monitoring of these programs should include a particular focus on skin injury and disease.

## 15.4 Bacterial Diseases

Within the workplace there may be the potential for employees to be exposed to bacterial infection, in particular legionella (usually associated with air conditioning systems) and E Coli (associated with faecal matter). Using the risk identification, assessment and control procedures outlined in this chapter, the employer should ensure that these potential hazards are identified and controlled through appropriate monitoring (air conditioning systems), facilities (for handwashing) and work practices.

## 15.5 Training

The employer should ensure that relevant training is provided for employees who may be exposed to occupational diseases in the course of their work before that likely exposure.

Training should include:

- an overview of the nature of occupational diseases, sources of infection, modes of transmission likely to be encountered and preventive mechanisms;
- relevant policies relating to biological hazards;
- task-specific risk control procedures;
- the use and limitations of personal protective equipment;
- first aid procedures; and
- personal hygiene practices.

## 16. Hazardous Substances

The National Model Regulations for the Control of Workplace Hazardous Substances [NOHSC:1005(1994)] and the National Code of Practice for the Control of Workplace Hazardous Substances [NOHSC:2007(1994)] apply to the use of hazardous substances in all workplaces. Where a substance in the workplace is covered by specific regulations, for example, lead and asbestos, those regulations should be followed in relation to that substance, together with any requirements in other State and Territory legislation covering matters not dealt with in the specific regulations. On a plant subject to Australian Quarantine Inspection Service inspection, the Commonwealth *Export Control Act* 1982 requires the use of approved chemical compounds only. The list of approved chemical compounds is available from the Australian Quarantine Inspection Service. However, Australian Quarantine Inspection Service approval does not imply that use of these compounds is without risk to health and safety, and therefore their use should be subject to the procedures outlined in this chapter.

The employer should ensure that employees whose health or safety may be at risk as a result of being exposed to hazardous workplace substances, and the relevant health and safety representative, are consulted when these substances are assessed and control measures implemented or reviewed.

## 16.1 Design

The employer should prevent or minimise foreseeable employee exposures to hazardous substances when planning or redesigning building layout, and when purchasing equipment.

An example of good equipment design and selection would be the use of an enclosed system for handling hazardous substances, rather than an open process, in order to ensure minimal exposure to hazardous substances.

### 16.2 Risk Identification

The employer should ensure that all substances (not just hazardous substances) used in the workplace are identified and listed within a central register. These substances should include:

- cleaning products;
- products used during maintenance or repairs;
- office materials;
- waste products; and
- products used during production processes.

This list is not exhaustive and other sources of substances should be included as they are identified.

After a list of substances used in the workplace has been compiled, the employer should ensure that hazardous substances as defined under the *National Model Regulations for the Control of Workplace Hazardous Substances* are identified. Sources of information that may assist this process include product labels, Material Safety Data Sheets and the *Guidance Note for the Assessment of Health Risks Arising from the Use of Hazardous Substances in the Workplace* [NOHSC:3017(1994)]. An example of a Material Safety Data Sheet can be found at Appendix 6.

The register should be linked to other relevant sources of information where they exist such as:

- workplace and health monitoring management systems;
- stock inventory management systems;
- education and training records; and
- injury, disease and compensation data.

## 16.3 Risk Assessment

The employer should ensure that the risks to health and safety created by hazardous substances used, stored, transported or disposed of in the workplace are examined and assessed. This includes risks that may arise during repair and maintenance work such as painting or the sealing of floor surfaces.

To assess the risks to health and safety arising from the use of hazardous substances, the nature of the hazard or the way in which the substance can be hazardous to employees must be known. It is not sufficient just to know that a substance is hazardous—the employer must find out how it is hazardous. A knowledge of the routes by which a substance may enter the body and produce an effect is important when assessing the risk associated with exposure and determining control measures.

Sources of information on how chemical substances may be harmful include:

- suppliers labels;
- Material Safety Data Sheets obtained from the supplier, manufacturer or importer;
- scientific and technical reference sources, for example, textbooks, journals and suppliers' manuals;
- trade unions and trade associations;
- State and Territory government departments responsible for occupational health and safety; and
- Worksafe Australia.

The assessment should include an evaluation of the ongoing monitoring required to assess the effectiveness of control measures. Health surveillance and biological monitoring are required for particular substances. It should be recognised that any positive results from health surveillance shows a failure in control measures and appropriate remedial action should be taken.

#### 16.4 Risk Control

Under the National Model Regulations for the Control of Workplace Hazardous Substances, the employer should control risks to health and safety from exposure to hazardous substances. The purpose of the control measures is to prevent or minimise employee exposure to hazardous substances that have been assessed as a risk. It may be appropriate for the employer to use a combination of control measures to eliminate or minimise the exposure.

The hierarchy given below should be followed when determining the approach to be taken.

#### (a) Elimination

The employer should review the necessity to undertake the process involving the use of a hazardous substance. New technology may eliminate the need to use a particular chemical, or manual or mechanical means may be available instead of using chemical means.

Purchasing substances in a ready-to-use form may eliminate exposure to a hazardous substance instead of carrying out a process that may result in exposure.



#### (b) Substitution

The risk of exposure to chemical substances may be reduced by substitution with a less hazardous substance or use of the same chemical in a less hazardous form. For example, substitution of handwash cleaning agents with an alternative should be investigated if dermatitis is occurring.

If a substance assessed as presenting a risk to employees' health and safety must be used, the employer should assess whether it can be purchased in a less hazardous form.

#### (c) Isolation

The isolation of hazardous chemical substances within a closed system may prevent or minimise employee exposure. A process, or part of the process, could be located within an enclosure fitted with local exhaust extraction to remove any contaminants that are released into the enclosure.

Processes which produce fumes of hazardous substances should be isolated in one room with restricted access to a few properly protected personnel.

Isolation and containment of hazardous chemicals within an area may also be achieved by providing a ventilation system that results in a positive air pressure preventing the dispersion of any airborne contaminants to adjacent areas.

#### (d) Engineering Controls

The design of a local exhaust ventilation system requires considerable expertise. Basic principles include using local exhaust ventilation to remove airborne hazardous substances from the work environment before they reach the breathing zone.

Partial enclosure of the source of exposure may be achieved with a hood that is part of a local exhaust ventilation system, such as fume cupboards, and, where required, fitting a water trap to drains where a blow-back of chemical fumes may occur.

Where limited quantities of low toxicity contaminants are generated, good general ventilation may be used to dilute the substance to levels that are not harmful to health. However, general ventilation has limitations and should only be considered to reduce levels of low toxicity substances or nuisance odours. As with local exhaust ventilation systems, general ventilation systems should be designed to draw air containing airborne contaminants away from the employees' breathing zone. Local exhaust ventilation should be used when painting or sealing floor surfaces in the workplace, for example, retail meat outlets.

The employer should ensure that maintenance procedures are in place for all engineering controls, including a system for the reporting of defects. Maintenance is important to ensure that the exposure is minimised and periodic air monitoring should also be carried out as a check on the efficiency of any systems installed to control airborne substances.

#### (e) Administrative Controls

Safe work practices are administrative procedures aimed at minimising the exposure of employees to hazardous substances.

Different types of packaging may eliminate or reduce exposure during handling of a chemical. For example, chemicals can be purchased in ready-to-use packages instead of decanting from large containers into smaller ones.

Where possible, chemicals should be purchased in granule form instead of powders which, when handled, produce dust.

Process modification should also be considered as a means to reduce the exposure to hazardous chemicals. For example, alternatives to spray applications that produce aerosols of the chemicals being used should be sought.

Access to an area containing hazardous chemicals should be restricted to appropriately trained and protected employees to minimise the potential for exposure.

All containers of chemicals used at work should be appropriately labelled, including any containers that the chemical may be transferred to. All containers of chemical substances should be tightly sealed when they are not in use.

Spills of hazardous substances should be cleaned up promptly, taking into account the nature of the spill.

The employer should ensure that eating, drinking and smoking is not permitted in areas likely to contain hazardous substances.

#### (f) Personal Protective Equipment

Control of exposure to workplace substances should be achieved by measures other than the use of personal protective equipment. Personal protective equipment should be regarded as a temporary measure or as a last resort to be used only where other control measures do not adequately control the exposure.

Examples of situations where the use of suitable personal protective equipment may be necessary include:

- Where it is not feasible to achieve adequate control of exposure by other control measures. In these cases, exposure should be reduced as much as possible by the other methods, and then, in addition, suitable personal protective equipment should be used to obtain adequate control. For example, the use of acid-resistant gloves and aprons in hookrooms.
- Where an assessment indicates that personal protective equipment is necessary to reduce employee exposure to an acceptable level until such time as adequate control is achieved by other means.
- Where urgent action is required, for example, in the case of a chemical spill where the only solution in the time available may be the provision and use of personal protective equipment (an ammonia leak is an example of such a situation).
- During some maintenance operations where the infrequency and small number of people involved may make other control measures impracticable.

## 16.5 Training

The employer should ensure that before an employee begins work in an area where substances assessed to be a risk to health or safety are stored or handled, training is provided in:

- the type and nature of hazardous substances present in the workplace;
- the availability and use of information, including labels and Material Safety Data Sheets for chemical substances;
- the need for, and proper use of, control measures, including safe work practices; and
- the selection, fit, use, limitations, and maintenance of personal protective equipment.

## 17. Environmental Hazards

## 17.1 Cold

Exposure to cold work environments can cause injury or illness, or aggravate the effects of other workplace hazards. The first response of the body to a cold environment is to try to maintain its temperature by decreasing heat loss from the skin. Thus the blood vessels in the skin and underlying areas constrict, posture is changed and shivering occurs. These reactions result in a loss of dexterity and sensitivity, and an increased risk of accidents and muscle or soft tissue damage.

More serious physical responses to exposure to cold include hypothermia, where the body's core temperature drops to a dangerous level (most cases occur in air temperatures of between 1°C and 10°C), and frostbite, which is the result of areas of the body freezing.

## (a) Risk Identification

Areas where employees may be exposed to cold conditions include:

- refrigerated areas, including, but not limited to, despatch areas, supermarket meat rooms, smallgoods rooms and boning rooms;
- chillers;
- freezers; and
- outdoors.

#### (b) Risk Assessment

Assessing the risks associated with work in cold environments requires consideration of:

- the temperature—studies have shown that accident rates increase as temperatures fall below 19°C;
- air movement—the combined effect of wind and low temperature can produce a condition known as "wind chill", in which cooling or freezing of exposed flesh increases rapidly as wind velocity increases;
- length of exposure; and
- nature of the work—where work requiring little movement is performed in temperatures below 18°C, or where active, muscular work is performed in temperatures below 15°C, the risk of injury is increased.

#### (c) Risk Control

#### General

Production requirements or other regulations may determine the temperature in sections of a meat industry workplace, so that raising the temperature to a safe and comfortable level is not practicable. Where this is the case, the employer, in consultation, should ensure that the temperature is no lower than it needs to be to meet those requirements.

Fans used in a refrigerated work area should be designed and installed in such a way that the "wind chill" is minimised. The fans should not direct the flow of cold air directly onto employees, but should be fitted with some sort of diffuser, such as air socks, to ensure an even temperature throughout the work area.

Floors and work stands in a refrigerated work area can increase the discomfort of a cold work environment, particularly for employees whose work does not require them to walk from one position to another. Concrete floors and steel stands conduct the cold, whereas rubber matting, aluminium stands and boots with thick rubber soles reduce it.

Protective clothing should be provided as appropriate where engineering and administrative controls do not adequately reduce employees' exposure to the risk of thermal stress from cold. The employer should recognise that different people have different responses to cold, and that one employee may have a need for protective clothing while the one next to them is comfortable without it. In particular, recognition should be given to the needs of employees whose work entails minimal movement, for example, scale operators in boning room.

#### Freezers

Any freezing chamber having dimensions sufficient to permit one or more persons to enter should be constructed to incorporate the following safety provisions:

- an escape door that can be opened outwards readily from the inside when every externallyoperated lock or catch is fastened;
- if any door is opened electrically or pneumatically, a safe means for opening the door by hand, and a means to prevent injury which may be caused by a closing door;
- an alarm, operated by means of illuminated buttons or by chains hanging near the door, and incorporating a fixed or flashing signal and buzzer or bell which is visible or audible in a constantly occupied workplace;
- light switches inside freezing chambers should be wired so that they cannot be switched off from outside the chamber;
- a means to ensure that the ways towards emergency exits and signals remain visible in the event of failure of the lighting; and
- emergency lighting.

Truck loading bays in freezer areas should be designed so that there is a gradual transition, or buffer

zone, into the extreme cold of freezers, otherwise there is a build-up of condensation causing wet, slippery conditions. Freezer doors need to be properly maintained, and kept closed while work is done within the chamber to ensure that there is no hot air being released into the cold store, otherwise there is a build-up of ice causing frosty, slippery conditions. Frost causes a corrugated road effect resulting in extreme vibration when driving forklifts.

#### Protective Clothing

All employees entering, or working in, or adjacent to the opening of freezing chambers should be provided with suitable clothing to protect them against the effects of cold stress.



#### Unauthorised Entry or Operation

Freezing chambers and associated machinery rooms, auxiliary plant rooms, switch rooms and the like shall be clearly identified on the doors together with warning notices that unauthorised persons must not enter. Additionally, warning notices shall be displayed prohibiting unauthorised operation of the plant.

#### Emergency Equipment

All plants with freezing chambers in which employees work shall be equipped with suitably located and identified rescue equipment centres. The equipment in these centres shall include self-contained compressed air breathing apparatus complying with the requirements of Australian Standard AS 1716 *Respiratory Protective Devices*, safety harnesses and lifelines complying with the requirements of Australian Standard AS 1891 *Industrial Safety Belts and Harnesses*, torches, axes, crowbars, stretchers and first aid equipment.

#### Training

It is essential that personnel working in, or in the vicinity of freezing chambers, be trained in emergency procedures and in the use of rescue equipment. Regular testing of equipment and rescue procedures should be carried out.

#### Administration and Operation

The following administrative arrangements and operating procedures shall be arranged and enforced:

- all emergency exit doors should be kept in good working order and be tested periodically;
- persons should not work alone in a freezing chamber, other than forklift drivers in transit; and
- after work has ceased, a responsible person should inspect each refrigerated chamber to ensure that it is clear of personnel, and they should then lock it.

#### Location of Employees

It is essential that supervisory staff are able to locate employees working in freezing chambers at all times.

#### Housekeeping

The interiors of freezing chambers should be kept clean and the contents stored in an orderly manner. Particular attention should be given to avoiding the build up of ice on floors and ensuring that waste materials such as broken pallets are not allowed to accumulate to the extent that they pose a hazard. Anti-freeze material should be used on floors where possible.

#### Use of Internal Combustion Engines

Gas and petrol-powered vehicles shall not be used in freezing chambers or containers as the exhaust emissions (carbon monoxide) pose an unacceptable risk to health and safety. Electric vehicles should be used instead.

## 17.2 Heat

High temperatures and excessive humidity can lead to heat stress in employees. Hot working conditions can cause a number of health problems which range from minor to life threatening. These include:

- Heat rash—skin rashes can occur with hot work. The most common is prickly heat.
- Fainting—hot conditions cause some people to faint. Seek medical assistance to ensure that the employee is not suffering from heat exhaustion or heat stroke.

- Heat cramps—excessive sweating causes a loss of salt from the body which results in painful muscle cramps.
- Heat exhaustion—a serious condition caused by the changes in the body's chemistry due to hot conditions. Usually there is nausea, weakness, headache and intense thirst. Seek medical attention promptly.
- Heat stroke—a life-threatening emergency. The body's heat regulation is lost and body temperature rises to dangerous levels. The person may be dizzy, weak, confused and may collapse. Seek medical attention urgently.

#### (a) Risk Identification

Areas where employees may be exposed to heat stress include:

- rendering areas;
- pig kill floors, particularly at scald and singe;
- kill floors, especially in the summer months;
- ham and silverside cooking areas;
- ovens and smokehouses;
- yards and pens, and outdoor loading . areas; and
- stockyards.

#### (b) Risk Assessment



When the body produces or receives heat energy, its temperature rises as sweat is produced (a defensive mechanism to lose heat). The blood flows to the skin to be cooled, forcing the heart to beat harder, and the blood flow to vital organs is reduced.

As heat increases the load on the heart, workers with high blood pressure or a pre-existing heart condition are particularly vulnerable to the effects of heat.

Assessment of the risk of heat stress requires not just a measurement of the temperature, but also consideration of:

- heat radiation, such as from hot, uninsulated roofs;
- humidity (level of moisture in the air), such as in a tripe room or silverside cooking area, which reduces the ability of the air to evaporate sweat, thus hindering the cooling of the body;



- air movement, which may need to be increased in a hot area to assist in the evaporation of sweat and relieve discomfort; and
- the type of work being done and the length of time that employees are exposed to hot and/or humid conditions.

#### (c) Risk Control

The employer should ensure that temperatures are kept comfortable through engineering controls including:

- the use of thermostatically controlled heating and cooling;
- the provision of fans to circulate air, and exhaust fans to extract and exchange air;
- the provision of ventilation systems that assist in the movement of air around the workplace;
- heat barriers, such as awnings and shields;
- insulation or isolation of sources of heat generation;
- insulation of roofs and walls; and
- external ducting of heat sources.

Where the risks of heat stress cannot be completely eliminated, such as in slaughtering and rendering areas (particularly in the summer months), the employer should ensure the provision of:

- cooled rest areas;
- cool, clean and palatable drinking water (this should be provided to all workers, but additional outlets may be needed in hot areas); and
- suitable clothing that will allow tasks to be performed with comfort.

Administrative controls that could be implemented include additional regular work breaks or additional relief staff. Whatever control measures (or combination of measures) are used, the employer should ensure that:

- monitoring of temperatures in the work environment is undertaken; and
- the effects of heat stress are known by supervisors and all employees potentially exposed to the risk.

#### 17.3 Lighting

Workplace lighting should be designed and installed to effectively reveal the task, and to provide a safe and comfortable visual environment. The quality of light, for example, colour, glare, etc, is as important as the quantity.

Factors that should be considered in the assessment of the lighting provided include:

- Lighting should be adequate for each task performed, for example, if lighting is provided from general installations in the centre of the room and a body of beef hangs between an employee and the light source, local lighting for that task may be required.
- Unwanted reflections, for example, a narrow, focused light shining directly onto a white wall may reflect glare back to an employee whose task requires them to face that wall.
- Differences in illuminance (brightness of the light) between different areas, for example, where employees may move from a well-lit work area into a passage, stairway or forklift area—if the difference is too great, the vision of employees may be temporarily impaired, increasing the risk of injury.

- Brightness of task surroundings—if the surroundings are noticeably brighter than the lighting of • the task itself, the visibility of detail within the boundary of the task will be impaired.
- Brightness distribution—in work areas it is important to avoid excessive brightness differences, • such as large areas of deep shadow or strongly lit white walls. Such extreme differences can result in visual discomfort, annoyance and fatigue.
- Colour characteristics of the light—as well as affecting the visual properties of the product, • different colour characteristics of light may provide different levels of visual comfort (and therefore visual ability) to employees.

Australian Standard AS 1680 Interior Lighting provides detailed guidance on all of the above. It also specifies standards for meat industry workplaces, as summarised in Table 5.

Task	Recommended Service Illuminance	
Slaughtering	200 1x	
Boning, cleaning, cooking grinding, canning, packing		
and cutting	400 1x	
Inspection	600 1x	

# Table 5: Recommended Service Illuminance for Major Tasks in the Meat Industry

Assessment of lighting needs or the adequacy of existing lighting should also include consideration of the visibility required for emergency evacuation in a blackout.

Factors to be considered in relation to emergency lighting include:

- the amount of natural light available;
- workplace layout, including placement of exits in relation to work stations;
- ٠ condition of floor surfaces if work is arrested mid-process; and
- number and location of employees.

Australian Standard AS 2293 Emergency Evacuation Lighting in Buildings gives further guidance.

## 18. Plant, Equipment and Tools

The National Standard for Plant [NOHSC:1010(1994)] defines "plant" as including "...any machinery, equipment, appliance, implement or tool and any component thereof or fitting thereof."

The application of the standard to the meat industry, then, is from knives to carcase saws, from automatic wrapping machines to boilers and forklifts. Employers should also familiarise themselves with specific State or Territory regulations on plant and equipment, and ensure that those requirements are met as a minimum.

There are various hazards associated with plant, tools and equipment dealt with by other chapters of these guidelines.

For instance, an automatic wrapping machine in a supermarket meat room could have a range of hazards associated with its operation—a manual handling hazard in the actual task of leaning forward to place the trays of meat on the belt, and the movements required to enter prices on the keyboard or peel off the stickers; a noise hazard if it is not properly maintained; possibly a respiratory hazard if the mechanism for melting the plastic is malfunctioning and creating fumes; a tripping (and electrical) hazard if the power leads are slung across walkways instead of suspended from above; and of course, a trapping or crushing hazard if the mechanism which drives the conveyor is unguarded.

Employers, in consultation, should ensure that all hazards associated with particular plant and its operation are identified—not just the obvious. When all the hazards are identified, refer to this and other relevant chapters of these guidelines for guidance on identifying, assessing and controlling the risk.

## 18.1 Risk Identification

The employer, in consultation, should identify the employees who are at risk of injury from the hazards associated with plant and equipment. Generally, there are four separate groups of workers who may be at risk—employees who use, clean, maintain or work in close proximity to the plant and equipment.

The employer, in consultation, should then identify risks arising from:

- tools and equipment used for cutting and chopping, for example, knives, choppers, bandsaws, carcase saws and hock and horn cutters;
- plant with moving parts, for example, wrapping and strapping machines, roller conveyors, screw conveyors, stun guns, hide pullers, mixers, tripe spinners, sausage filling machines and mincers;
- power supply to plant and equipment, for example, electricity, air lines, hydraulic fluid lines and gas lines;
- plant with hot or cold parts or material, for example, pig singe chambers or flame guns, cookers, ovens, sterilisers and hot water and steam hoses;
- plant designed to lift or move persons, equipment or material, for example, carcase hoists, rise and fall platforms, restrainers, conveyors and hanging cages; and
- mobile powered plant, for example, forklifts and tractors.

The *National Standard for Plant* also requires identification of risks arising from scaffolding and associated temporary equipment, and plant which use laser light. It also sets out requirements for registration of plant.

A Model Checklist for Plant that can be used to assist in identifying risks associated with plant and equipment is included at Appendix 7.

## 18.2 Risk Assessment

Where a risk has been identified, the *National Standard for Plant* requires the employer to assess that risk, in consultation:

- before and during the introduction of plant;
- before and during any alteration to plant or change in the way plant or an associated system of work is used, including a change in the location of the plant, which is likely to involve a risk to health and safety; or
- if information regarding health or safety becomes available to the employer.

Risk assessment should be undertaken in consultation with the employees who use the plant, equipment or tool, and also with those who clean and/or maintain it. The assessment should include consideration of all the risks identified and the:

- frequency and duration of exposure to the risk or risks identified;
- consequence of exposure to those risks, that is, the potential injuries;
- work organisation, including the complexity and repetitive nature of the task, and the number of employees using the particular plant;
- layout and condition of the workplace, including lighting, work space, noise levels, pedestrian traffic, etc;
- condition (and maintenance record) of the plant, tool or equipment;
- manufacturer's operating instructions, if any, and the usual circumstances of its use, cleaning and maintenance;
- guarding and safety device requirements; and
- the capability, skill and experience of the person using the plant.

#### 18.3 Risk Control

After assessment, the risks associated with the use of the plant, tool or equipment, or any associated system of work, must be controlled.

Section 67(2) of the *National Standard for Plant* requires that where it is not practicable to eliminate the hazard, minimisation of the risk through one or a combination of the following approaches must be used:

- (a) substitution of the plant by less hazardous plant;
- (b) modification of the design of the plant;
- (c) isolation of the plant; and/or
- (d) engineering controls, such as guarding.

Where it is not practicable to take these measures, or where they do not adequately control the risk, appropriate administrative controls such as safe work practices and inspection, testing and maintenance procedures should be implemented. The employer should provide, maintain and ensure proper use of appropriate and adequate personal protective equipment where other controls are inadequate.
#### 18.4 Examples of Possible Risk Factors and Control Ideas

It is not possible to list every piece of plant and equipment in the meat industry and advise on how to remove all risks associated with its use. The following examples are included to illustrate the process outlined above. In addition to information and advice from manufacturers and suppliers, the employer should still undertake the full process of identifying and assessing the risks, giving consideration to where the plant or equipment is to be installed. The same machine, installed in different workplaces, may offer a range of risks relating to the lighting, the power supply, the method of use, etc. The most obvious risk of an unguarded blade may be only part of the story. The risk factors outlined in the examples below may or may not be the same in other workplaces. Both the risk factors and the control options suggested should be considered as guidance only.

#### (a) Knives

#### **Possible Risk Factors**

- Knife action creating a need for (depending on cut) constant grip, grip-change mid-way through a cut, wrist rotation and deviation, limited range of movement, static loading of shoulder muscles, etc.
- Design of handle causing uncomfortable grip.
- Poorly sharpened or worn blades.
- Inadequate steeling and sharpening.
- Storage and transportation of unsheathed knives, including poorly designed or overcrowded pouches.
- Dropped knives.
- Transferring cuts of meat from one operation to the next.
- Crowded work space, or work areas that impinge on thoroughfares.
- Slippery handle from contamination by fat, body fluids, sweat/steam and lanolin (from fleece).
- On conventional small stock chain—bodies falling while being worked on as hocks slip from spreaders.
- Gripping meat with non-knife hand during knife work.
- Excessive force needed due to "hard" meat.
- Repetitive movements.
- Speed of work.
- Poor lighting.



#### **Control Ideas**

- Ensure that knives used comply with Australian Standard AS 2336 *Meat Industry—Hand-held Knives*.
- Consider alternative knife designs that bend the knife handle rather than the wrist.
- Seek suppliers of knives with different handle sizes.
- Ensure that cutting edge of knives are correctly maintained to give the sharpest edge possible at all times.
- Ensure that employees only use knives with sharp edge. Methods to ensure this may include: training and re-training in knife sharpening skills, reviewing time needed and available for the sharpening of knives, provision of a trained full-time person or automatic knife sharpeners.
- Select steels with design and length appropriate to the task.
- Fit steels with a guard securely fitted to the base of the steel which is designed to prevent the hand holding the steel from being struck by a knife.
- Locate oilstones so that they are convenient to work stations and in secure stands protected from passing pedestrian traffic by barriers, and set hand-held oilstones in a metal holder.
- Lubricate oilstones by light edible oil, water or liquid soap to provide a viscous surface upon which knives may be rubbed.
- Provide a constant supply of water to sandstones to allow the knife to move with ease on the surface, with safe drainage for excess water.
- Inspect grindstones regularly for grooves or cracks and other faults that may cause hazards, and repair or replace faulty grindstones immediately.
- Provide a clearly understood procedure for the identification and safe disposal of knives which



have worn to a degree that there is a risk of the blade snapping.

- Ensure that knives are pouched when not in use, that unsheathed knives are never carried by hand from one place to another, placed on bench tops, left unattended in the work station, or stored in lockers or other storage areas.
- Ensure that pouches are designed so that the blade of a knife cannot be exposed, an undue length of knife handle does not protrude, and only one knife can be stored in each compartment.
- Redesign the workplace to remove the need for inappropriate work practices, for example, using a knife to transfer meat by piercing and levering.

- Provide sufficient work space for each employee to reduce the risk of one employee stabbing or cutting another.
- Redesign the workplace to minimise distractions from the task, reduce additional stressors and minimise fatigue, for example, reduce noise, provide comfortable working temperatures and reduce uncomfortable working postures.
- Ensure that provision is made for regular cleaning of knife handles through the working day.
- Ensure that spreaders, shackles, etc are of appropriate size for stock being treated.
- Provide hand hooks, where practicable, to be used as a gripping aid or to assist in moving cuts of meat from one operation to the next.
- Provide training in correct work practices, for example, to direct all knife strokes away from the body, where practicable, and in knife sharpening skills.
- Provide training to allow safe and effective rotation, where appropriate, to minimise risk of occupational overuse injuries.
- Where the nature of the task constitutes a risk of a knife cut to a particular part of the body, and where it is practicable to do so, provide personal protective equipment such as mesh gloves and arm or abdominal guards.

#### (b) Augers (Screw Conveyors)

Most of the following also applies to belt, slat and tray conveyors, as well as overhead trolley conveyors and gravity slide and roller conveyors.

#### **Possible Risk Factors**

- Unguarded augers at floor level or in a pit—stepping or falling into the trough and getting caught up in the screw.
- Slippery floor and unguarded receiving points to auger—legs or whole body caught in screw.
- Augers carrying bladders, udders, uteri, slinks and placental material—splashing of potentially infective material and the release of potentially infective aerosols (see Chapter 15).
- Uncovered augers ejecting large bones or other waste matter.
- Clearing blockages while auger is turned on—falling into screw.
- Clearing blockages while auger is turned off—the power control out of sight of the employee clearing the blockage is turned back on while work is still being done.
- Using hooks or poles for clearing blockages.
- Overflow of material at the discharge point results in slip, trip and fall hazard or increased infection risk.
- Height of elevated augers during maintenance procedures.
- Unguarded flywheel or drive chain, sprockets and other moving parts.

- Fit u-troughs of screw conveyors with covers that are bolted on or electrically interlocked to ensure that operation without guards is prevented.
- Ensure that receival pits, for example, at knackeries or rendering plants, are provided with barriers wherever possible, and are fitted with a means of escape and stop controls at every work station.

- Design waste chutes and covers for utroughs containing screws to minimise the return of aerosols to work areas and eliminate the risk of employees slipping or stepping into them.
- Ensure that areas around loading and unloading points and stop/start controls are free of congestion and obstructions.
- Provide covers for the length of utroughs containing screws to fully contain the material carried.
- Ensure that emergency stop controls are arranged so that the reactivation of the conveyor cannot take place until all stop controls have been returned to a neutral position.
- Ensure that the positions of controls are known to all persons working in the vicinity of conveyors as well as those working alongside conveyors.
- Ensure that poles or sticks are not used for clearing blockages of screws.



- Ensure that automatic discharging conveyors are provided with an automatic stop so that when bins/chutes are full the conveyors stop.
- Provide walkways or access platforms to facilitate repairs to elevated conveyors. Ensure that this area is fitted with stop controls, and access is restricted to authorised maintenance personnel.
- Guard all moving parts presenting a pinch point or trapping and crushing risk to prevent access by any part of an employee's body or clothing.
- Design guards protecting other moving parts of conveyors, for example, the drive mechanism, to be removable only by use of a key or other specialised tool.

#### (c) Bandsaws

#### **Possible Risk Factors**

- Blunt blades.
- Snapping of blades not replaced in time.
- Removal and disposal of spent blades.
- Wear on blade access hole in tray creates a catching surface for meat.
- Scrapers designed for wiping blades clean accumulate excessive bone dust and moisture if not cleaned, or wear out, resulting in dropping onto tray of dust and other waste.

- Unguarded blades.
- Unguarded drive mechanisms.
- Trapping of mesh gloves in teeth of saw.
- Accumulation of cut meat on tray limiting work space.
- Lifting and manipulation of awkward loads, for example, if a saw is used to break up a full quarter of beef.
- Repetitive work and static load on particular cuts—more likely to be a risk in a mutton break-up room than in a retail shop.
- Handling frozen meat for long periods.
- Electrical risk from excessive application of water to tray.
- Increased manual handling risk if bench has no slipperiness.
- Bumping of bandsaw operator by adjacent employees or others passing by.

- Implement regular inspection and replacement procedures for bandsaw blades, and provide safe disposal facilities for discarded blades.
- Ensure that the saw is switched off and isolated from the power supply during maintenance and cleaning operations, and when not in use.
- Ensure that cleaning and maintenance of bandsaws includes the top and bottom pulleys, and the scrapers.
- Provide an adjustable guard over cutting edge of blades so that only the minimum amount of the blade necessary for the task is exposed.
- Provide a system of portioning jigs to enable small pieces of meat to be cut.
- Completely enclose by guards the top and bottom pulleys and all parts of the blade, except for that part between the top guide and the saw tray, to prevent any part of a person's body coming into contact with the blade.
- Design and install all guards so that they can only be removed by the use of a special key, tool or spanner.
- Ensure that blades are fitted with teeth facing in a downward direction.
- Ensure that employees do not operate bandsaws while wearing mesh gloves.
- Ensure that bandsaw trays are large enough to hold the pieces of meat to be cut.
- Design the work process to ensure that cut product is removed immediately from trays to prevent accumulation.
- Organise work to reduce manual handling risk factors, for example, twisting while lifting, etc.
- Ensure that handling of frozen meat is limited in time to avoid loss of feeling and dexterity in hands and fingers due to the cold.
- Where water is required to reduce the stickiness of trays, provide mist sprayers to ensure that there is no excess.
- Provide emergency mushroom-shaped stop buttons on bandsaws in addition to normal stop/start

controls so that they can be activated by operator knee pressure.

• Design the work space in such a manner as to prevent persons other than the operator of the saw from intruding into the work space.

#### (d) Forklift Trucks

#### **Possible Risk Factors**

- Collision with pedestrians, other vehicles and structures.
- Excessive speed.
- Use of forklift trucks as passenger vehicles or personnel lifts.
- Use of attachments such as crane jibs, clamps and work platforms.
- Load falling and injuring operator or other persons.
- Badly maintained floor surfaces.
- Driving on temporary ramps and platforms.
- Driving over edge of loading dock.
- Stacking on gradients.
- Overhead lines, for example, electric power lines and outside water and refrigerant lines, if contacted by load or mast.
- Vibration via seat or operating controls.
- Use of engine-powered forklift trucks in confined spaces.
- Operation or maintenance of forklift trucks by unqualified personnel.
- Refuelling and battery charging.

- Ensure that forklift trucks have adequate operating controls, for example, stop and start switches, braking, steering, horn and hydraulic controls, with legible instructions.
- Fit appropriate warning devices, for example, horns, flashing overhead lights and reverse alarms.
- Provide convex mirrors on blind corners.
- Where pedestrians and forklift trucks operate in the same work area, mark out designated forklift areas.
- Provide barriers to prevent forklift trucks or their tines striking storage racks, electricity control boxes, gas bottles, etc.
- Provide pedestrian-safe areas where passageways open onto forklift transit areas by installing speed humps or barriers.

- Ensure that forklifts used comply with Australian Standard AS2359.1 *Industrial Trucks—Design and Manufacture* and Australian Standard AS2359.2 *Industrial Trucks—Operation.*
- Ensure that forklifts are never used as passenger vehicles, and are used to raise or lower personnel only if the forklift truck used is specifically designed for that purpose or has as an attachment an approved work platform designed for that purpose.
- Ensure that attachments used are designed for use with that forklift truck, and are supplied with correct instructions for use and with additional data plates specifying limitations of the forklift when operating with the attachments.
- Provide a non-skid surface on aisles, roadways, passageways, floors and ramps over which forklift trucks operate.
- Determine the type and size of forklift to be used after identifying all planned purposes for its use and the limitations of the workplace, for example, the height of powerlines and entryways.
- Provide vibration damping seats, with lumbar support.
- Use only electric-powered forklifts inside freezers, containers and enclosed storerooms.
- Ensure that battery charging and all maintenance activities are carried out by trained and competent personnel.
- Ensure that only qualified and competent employees operate forklift trucks without direct supervision. Learner drivers should be under direct supervision of a qualified person.
- Implement regular inspection and maintenance procedures for all forklift trucks by an appropriately qualified person.
- Refuel petrol or diesel-powered forklift trucks at locations specifically designed for that purpose.

#### (e) Hot Water Hoses

#### **Possible Risk Factors**

- Overheating of water.
- Build up of steam, bursting from hoses and/or valves when hoses turned on.
- Creation of excessive steam in work area.
- Creation of potentially infective aerosols (see Chapter 15).
- Burns from connection end if unplanned disconnection occurs.
- Use of insufficiently insulated hoses.
- Inadequate drainage, allowing hot water to pool, creating thermal and slip and fall hazards.
- Electrical risk where electric light and electrically-powered equipment are in use or are still connected.
- Hand guns for pressure hosing—connections, valves and selection of hose.
- Use of hand guns for washing boots.
- Trip hazard from poor storage of hoses.

- Set and maintain thermostats at safe levels, and ensure competent persons are available whenever work is being done with hot water hoses to adjust thermostats if necessary.
- Maintain water temperature at lowest possible level.

- Provide appropriate personal protective equipment—boots, waterproof pants or spats worn outside boots.
- Provide a length of hose sufficient for the task.
- Ensure that hoses used fit all requirements, including extremes of temperature and pressure.
- If drainage is inadequate, limit the amount of water used, for example, use smaller bore hoses and pressure guns, or implement work system changes, such as cleaning one section and waiting for water to completely drain before beginning the next.
- Where hoses are used to clean ceilings and walls, ensure that electric lights, fittings and switches are completely waterproof.
- Ensure that taps, valves and hand guns are included in the regular maintenance inspection program.
- Design boot wash troughs to include grate steps to present boots at the appropriate height and angle for cleaning.
- Install walk-through boot wash baths with fixed, replaceable brushes to clean soles and sides of boots.
- Provide facilities to loop and store hoses away from work floors when not in use.

#### 18.5 Maintenance

The work of a maintenance team may be to undertake the work of physical changes to the workplace for changing production requirements, fixing breakdowns and preventive maintenance as part of the employer's health and safety program. It is the latter part of the maintenance workers' responsibilities that this section is concerned with.

A maintenance program is essentially an administrative control for risks associated with plant, equipment and tools. A maintenance program is also an effective mechanism for monitoring the ongoing effectiveness of engineering controls.

The employer, in consultation with the maintenance staff and the health and safety representatives, should develop a program specifying the schedule for the maintenance of all equipment and work stations. Different plant and equipment may need to be checked on a daily, weekly or monthly basis. A Model Maintenance Inspection Checklist is included at Appendix 8. The inspection and maintenance requirements of each piece of plant and equipment should be identified and clearly communicated to all maintenance staff, and to production staff who may have other demands of the maintenance team.

The risks associated with maintenance jobs—both scheduled jobs and breakdown work—should be identified, assessed and controlled, in consultation, before work begins.

The employer should ensure that:

- Service manuals, including specific safety precautions recommended by manufacturers, are readily available to maintenance employees.
- All machinery is capable of complete shutdown, and zero mechanical state is achieved before maintenance commences. Energy sources including electrical, hydraulic, pneumatic, vacuum, spring loading and gravity or any combination of these should be deactivated to achieve zero mechanical state prior to commencing maintenance.
- Procedures for reporting faulty machinery, tagging and lockout of that machinery are in place and

clearly understood by all employees and supervisors.

- Persons performing electrical, refrigeration, cutting and welding, plumbing and gas fitting and other tasks requiring certification hold current qualifications.
- During breakdown maintenance, all employees other than maintenance staff are removed from the area. The immediate area should also be cleared of all other possible hazards, including slipping and tripping hazards.
- Maintenance staff are provided with personal protective equipment appropriate to the task, and are consulted to determine what is appropriate. This equipment may include:
  - welding shields;
  - long-sleeved shirts;
  - life jackets for entry to effluent ponds; and
  - safety helmets.
- Equipment provided for the maintenance task is appropriate, for example, electricians should use only fibreglass ladders in "live" areas.
- Areas to which maintenance personnel need access that may contain pipe work or electrical cables that would present a hazard to untrained personnel, for example, ceiling spaces, are clearly marked RESTRICTED ACCESS. Identification and precautions for control of risks in such areas should occur before entry, and maintenance personnel required to enter should be provided with appropriate training, for example, in safe work in roofs and entry into confined spaces, and suitable personal protective equipment, including any emergency escape equipment identified as necessary.

## 19. Noise

#### 19.1 General

Noise is one of the most widespread hazards facing the meat industry. Noise-induced hearing loss is an insidious problem, usually developing slowly over several years. Although employees may think that they have become used to noise, this tolerance is due to temporary hearing loss. Repeated exposure to excessive noise will eventually lead to permanent hearing loss.

This hearing loss results when tiny hair-like cells in the inner ear are permanently damaged by too much noise for too long. The damaged cells can then no longer send messages to the brain and hearing is lost. The damage often remains unnoticed until it is too late.

Extremely loud noises such as hammering and gunshots can cause immediate and permanent hearing loss.

Not only does excessive noise result in permanent hearing loss, it can create other problems such as stress leading to tiredness, irritability and headaches. It can cause dizziness, raise blood pressure and increase heart rate. Noise increases the risk of accidents by disguising sounds of approaching danger or warnings, and negatively affecting balance, concentration and communication among coworkers.

The potential for noise-induced hearing loss occurs in two main ways:

- Prolonged exposure, that is, eight hours exposure to noise levels of 80 dB(A) and above.
- Exposure to a one-off noise, which can cause immediate hearing damage. The upper limit to which a person may be exposed is 140 dB.

The National Standard for Occupational Noise [NOHSC:1007(1993)] recognises an exposure standard of  $L_{Aeq}$ , 8h of 85 dB(A), which refers to the total sound energy of the exposure averaged over eight hours. However, some States have retained an  $L_{Aeq}$ , 8h of 90 dB(A) as the standard.

Obviously, compliance with either of these standards will not ensure protection against hearing loss.

Possible sources of excessive noise in a meatworks or smallgoods factory would include:

- live animals;
- movement of metal hooks;
- throwing of objects onto conveyors or into chutes;
- compressed air;
- trolleys, etc on concrete floors;
- power tools; and
- music (general and in individual headphones).

In addition, the design of the meatworks itself, where equipment and wall, floor and ceiling surfaces are constructed of hard materials for hygiene purposes, may also exacerbate the problem.

#### 19.2 Responsibilities

#### (a) Employer

Employers should ensure that:

- the relevant legislation is complied with;
- a noise control policy and program of action are developed, implemented and monitored, in consultation; and

• all levels of management and employees receive appropriate training, education and information, where appropriate.

#### (b) Employees

Employees should comply with all relevant legislative requirements and cooperate, as far as they are able, in all activities aimed at hearing protection at work and the minimisation of occupational noise-induced hearing loss.

#### 19.3 Design

The most cost-effective way to reduce noise exposure is at the design stage, avoiding expensive redesign or modification to existing plant, workplace or work practices. With the purchase of new plant, noise emission data should be obtained from suppliers to enable the plant with the lowest practicable noise level to be selected.

New workplaces, and installation sites for new plant in existing workplaces, should be designed and constructed to ensure that exposure to noise is as low as is practicable. If new plant is likely to expose people in the workplace to excessive noise, design features should incorporate effective engineering noise control measures to reduce noise to as low a level as is practicable.

#### 19.4 Risk Identification

In consultation, the employer should identify those areas of the workplace where excessive noise is likely to be a risk. As a basic guide, if environmental noise makes it necessary for employees to raise their voices to be heard by another person 1 metre away, then hearing may be at risk.

#### 19.5 Risk Assessment

Having identified noise as a hazard in the workplace, an employer should assess the risk of noiseinduced hearing loss by undertaking a noise assessment. This assessment requires some reasonably sophisticated equipment and trained assessors to ensure proper measurement and interpretation. If the equipment and trained staff are not available, employers should seek expert advice. The assessment should be carried out in consultation.

A noise assessment may be simple or quite complex, depending on the type of workplace, the number of employees and the information already available regarding noise exposure levels. The general objectives of the assessment are to:

- identify all employees likely to be exposed to noise above specified levels;
- obtain information on noise sources and work practices that will help employers decide what measures should be taken to reduce noise;
- check the effectiveness of measures taken to reduce noise exposure;
- help in the selection of appropriate personal hearing protectors; and
- delineate hearing protection areas.

The period between noise assessments should be determined through established consultative processes. As a guide, assessments should be repeated at least every five years or whenever there is:

- installation or removal of machinery;
- a change in workload or operating conditions which is likely to affect noise levels;
- a change in the building structure likely to affect noise levels; and

 a change in working arrangements which affects the length of time employees spend in noisy workplaces.

More detailed guidance on noise measurement and recording is available in the National Standard for Occupational Noise, the National Code of Practice for Noise Management and Protection of Hearing at Work [NOHSC:2009(1993)] and Australian Standard AS 1269 Acoustics—Hearing Conservation and Australian Standard AS 2659 Guide to the Use of Sound Measuring Equipment.

#### 19.6 Risk Control

Having analysed the results of the noise assessment, appropriate control measures can be developed and implemented. Some examples of control measures are listed below:

#### (a) Elimination and Substitution

Replace noisy machinery with equipment designed for operation at lower noise levels.

#### (b) Redesign

The noise from metal on metal contact, for instance, may be quietened by the use of plastic bumpers. Sound-dampening devices, such as mufflers and the use of specially designed mats under motors, may be appropriate.

#### (c) Isolation

Isolate noisy equipment from employees by enclosing it, for instance, in a sound-proofed area. Noisy elements that are not an integral part of the basic machine may be suitable for separation. For example, pumps, fans and air compressors that service the basic machine could be removed elsewhere.

#### (d) Work Practices

Modify work practices to ensure that impact and shock handling and transport are minimised as far as possible. For example, minimise the fall height of objects onto hard surfaces.

#### (e) Administrative Controls

Where it is not practicable to eliminate noise exposure through design, substitution, redesign or separation, administrative noise control measures should be used. Rearrangement of work practices to ensure that employees spend limited periods in noisy environments could be considered, for example, rotation of appropriately trained employees.

An adequate equipment maintenance program should also be established, as equipment noise can often be reduced through regular and corrective maintenance.

If administrative controls are relied on, there should be regular checks to ensure that they are fully and correctly complied with.

#### (f) Personal Protective Equipment

Personal hearing protectors should be supplied where there is a requirement to reduce noise exposure to or below the exposure standard and when other control measures are not practicable. Employees should be supplied with effective personal hearing protectors. They should also be trained in the use of these protectors and required to wear them. Instruction in the use, fitting, care and maintenance of personal hearing protectors should be repeated at regular intervals. Personal hearing protectors should not be used as a substitute for other control measures. When selecting personal protective equipment, ensure that it is appropriate to the wearer and to the noise problem specific to

the particular workplace.

Areas where persons may be exposed to noise levels exceeding  $L_{Aeq}$ , 8h of 85 dB(A) should be sign-posted as "hearing protection areas". The boundaries of these areas should be clearly defined. No person should enter a hearing protection area during normal operation, even for brief periods, unless appropriate personal hearing protectors are worn.

Employers should also ensure that personal hearing protectors are regularly inspected and maintained and that adequate provision is made for clean storage of protectors when not in use.

A regular review of all risk control measures should occur.

#### 19.7 Training

Training is an integral part of the preventive strategy in relation to noise. Target groups requiring training are:

- managers and supervisors;
- employees who may be exposed to excessive noise at work;
- workplace health and safety committees and health and safety representatives; and
- staff responsible for the purchasing of plant, noise control equipment and personal hearing protectors and for the designing, scheduling, organisation and layout of work.

The needs of each target group are different and the content and methods of presenting training material should be tailored to meet the specific needs of each group. Topics that could be included are:

- the effects of noise on hearing;
- social handicaps of noise-induced hearing loss;
- legal requirements;
- the company's noise control policy and program;
- the nature and location of noise hazards in the workplace;
- the nature of noise control measures (general and specific);
- when and how to use personal hearing protectors;
- arrangements for reporting problems associated with noise; and
- the purpose and nature of audiometric testing.

#### **19.8 Audiometric Testing**

The hearing of employees exposed to noise can be monitored through regular audiometric examinations. Such testing in itself is not a preventive mechanism, and must form part of a comprehensive noise management program. All testing should be undertaken by appropriately trained and experienced persons, selected following a process of consultation with employees.

Results of individual tests, with appropriate explanations, should be given to the employee within two months of the test. Individual results should not be released to other parties without the agreement of the employee.

Unidentifiable group results should be accessible to health and safety committees.

When employees are found to have sufficient hearing loss to interfere with the safe performance of their jobs, all practicable steps should be taken to modify the environment. When this is not possible, employees may need to transfer to another area within the workplace.

### 20. Confined Spaces

Confined spaces are defined in Australian Standard AS 2865 Safe Working in a Confined Space as:

A space of any volume which:

- is not intended as a regular workplace;
- has restricted means for entry and exit;
- may have inadequate ventilation and/or an atmosphere which is either contaminated or oxygendeficient; and
- is at atmospheric pressure during occupancy.

In the meat industry, examples of confined spaces include:

- storage tanks, rendering vats, boilers, pressure vessels and other tank-like compartments usually having only an access hole for entry;
- open-topped spaces of more than 1.5 metres in depth, such as blood pits or degreasers, which are not subject to good natural ventilation;
- pipes, sewers, tunnels, shafts and ducts, covered augers and similar structures; and
- in some circumstances, this may also include cold rooms, freezers, smoke rooms and ovens.

#### 20.1 Risk Identification

In consultation, the employer should identify all confined spaces in the workplace and the potential risks associated with entry into each of the confined spaces.

Potential risks associated with entry into confined spaces in the meat industry include, but are not limited to:

#### (a) Chemical Agents

Oxygen lack—whereby another gas displaces oxygen, for example:

- carbon dioxide from dry ice stored in a chiller or freezer;
- methane from rotting organic matter in a sewer;
- halocarbon from leaking refrigerant in a chiller; and
- nitrogen from liquid nitrogen used as a coolant in a container.

Fires and explosions—can be caused by static electricity, friction, electrical equipment or chemical reactions combined with combustible gases in confined spaces. Combustible gases include:

- natural gas; and
- methane.

Combustible gases also displace oxygen and can irritate the eyes, skin or other organs.

Poisoning—toxic gases and vapours can cause injury or death, depending on their type and concentration. Toxic gases in the meat industry include the following:

• Hydrogen sulphide, which can build up in blood tanks, stickwater storage or holding tanks from rendering plants. Exposure to hydrogen sulphide at 10 ppm over a prolonged period may be harmful, at 150 ppm it becomes undetectable, and above 1,000 ppm it is fatal.

- Carbon monoxide is released with the exhaust of both petrol and gas forklifts, which therefore shall not be used in freezer chambers, containers, chillers or enclosed storerooms.
- Ammonia is used in most meat plants for refrigeration. Toxic levels of ammonia can occur by leakages in freezers, cold stores, chillers or engine rooms.
- Sulphur dioxide can be released from preserved coagulum or blood products.
- Chlorine gas used in water treatment at some plants.

#### (b) Biological Hazards

There are biological hazards associated with work in confined spaces. These include:

- bacteria, for example, Legionella, E coli, gastroenteritis;
- viruses, for example, Hepatitis A, B and C; and
- zoonoses.

For further information on biological hazards, see Chapter 15 of these guidelines.

#### (c) Other Hazards

Other hazards include:

- machinery;
- slips, trips and falls; and
- flooding with water or other waste products.

At the end of the hazard identification process, the employer and health and safety representative should be able to list all confined spaces—from the most regularly entered, such as chillers, to the "almost never" entered, such as blood tanks.

It would be useful to have all confined spaces recorded in a register along with the reasons for entry and the potential hazards associated with them. It may look like Table 6.

The hazard identification should be reviewed whenever any relevant changes are made to the workplace, such as the introduction of new plant, and changes to maintenance procedures.

Confined Space	Reason for Entry	Potential Risks
Freezers and chillers	Normal work of stacking, e	etc Emissions from one forklift, machinery and ammonia leak
	Stocktake	Emissions from three forklifts, machinery and ammonia leak
Rendering vat	Cleaning and maintenance	Sulphur dioxide, dust and zoonoses
Bloodpit	Clear blockage in pipe	Hydrogen sulphide, sulphur dioxide and zoonoses
Stickwater tank	Clear blockage	Hydrogen sulphide, sulphur
Offal pit and augers Cl	ear blockage and Ma maintenance	ethane, hydrogen sulphide, sulphur dioxide, zoonoses and machinery

## Table 6: Example of Identified Confined Spaces in an Abattoir antipod Space Beasen for Entry

#### 20.2 Risk Assessment

Each entry into a confined space should be treated as a separate task and a risk assessment should be completed for each task.

The objective of the assessment is to determine what steps should be taken to make the work safe and without risk to health and safety, and what procedures should be established during the actual work process.

The assessment should be written, and should take into account the following.

#### (a) Work Required to be Done, Including Whether it is Necessary to Enter the Confined Space

For instance, in cleaning a blood pit, does the work need to be done? If so, does the worker have to enter the space to do it?

#### (b) Methods by which the Work can be Done

For instance, can the cleaning of the blood pit be done by high pressure hose, do cleaning solvents have to be used, are they applied with a brush or by other means?

#### (c) Hazards Involved

Are residual vapours present, do the cleaning materials give rise to fumes, will fumes escape when the blood is disturbed, can the worker be exposed to an electrical current, will the worker be affected by extremes of heat, is there a potentially explosive atmosphere?

#### (d) Actual Method and Plant Proposed

What method will be used to clean the pit, what equipment will be used, how will atmospheric testing be done, how will the pit be isolated from electrical hazards, what protective equipment is needed, who is the observer? A step-by-step job procedure should detail these points.

#### (e) Emergency and Rescue Operations

Has a detailed rescue plan been developed, have people been assigned to tasks, is appropriate and adequate equipment available?

Entry into a confined space should not be permitted until the atmosphere has been tested and evaluated to determine if there is a hazard from:

- oxygen deficiency (less than 19.5% or in excess of 21%);
- contaminants in the atmosphere, including flammable or combustible contaminants;
- contaminants which can be generated by the production process or maintenance/ cleaning procedure; and
- extremes of temperature.

For each confined space, an entry permit should be completed before entry. When the procedure has been completed, a Confined Space Entry Permit should be issued by an "authorised person". An authorised person is a competent person authorised in writing by the employer to undertake specific tasks, for example, place locks on isolating equipment, test the atmosphere or supervise the safe execution of the work in the confined space.

#### 20.3 Risk Control

Where hazards are assessed as a risk to employees' health and safety when they are entering a confined space, the employer should ensure that control measures are used to eliminate or substantially reduce the risks. The control measures should include the following.

#### (a) Entry Permit System

Entry to a confined space must not take place without prior approval by the employer. Such approval should take the form of a formal Confined Space Entry Permit which:

- specifies the location and type of work to be done, including safe work procedures;
- confirms that identified hazards have been evaluated; and
- confirms the necessary protective measures and procedures.

#### (b) Air Testing

Before a person enters a confined space, the employer should ensure that the atmosphere is monitored for:

- oxygen content;
- explosive atmospheric mixtures; and
- atmospheric contaminants.

There are number of methods available for monitoring the atmosphere, and the following precautions are necessary:

- the person conducting the testing must be trained;
- the appropriate equipment must be used; and
- the equipment must be calibrated and checked with manufacturer's recommendations.

#### (c) Observers

A stand-by person(s) should be appointed to maintain communication with the people inside a confined space. Communication may be by voice, radio, hand signals, rope signals or other appropriate means.

A Model Confined Space Entry Permit is included at Appendix 9.

## Part 4 — Personal Protective Equipment and Clothing

## 21. Personal Protective Equipment and Clothing

#### 21.1 Personal Protective Equipment—General

Personal protective equipment and clothing are those items of equipment or clothing worn by an employee to minimise or eliminate exposure to specific occupational hazards.

When seeking to reduce the exposure of an employee to the risk of injury or illness, the emphasis should be on eliminating or reducing the risk. At all times, the hierarchy of control, as described in Chapter 10, should be followed.

Generally, personal protective equipment should only be used:

- as an interim measure before controls, such as substitution or isolation, are implemented;
- where other controls are not possible or available;
- where other controls are inadequate;
- during activities such as maintenance, clean-up and repair where other controls are neither a feasible nor an effective means of protection; or
- during emergency situations.

Where it is agreed that personal protective equipment should be used, the employer should consult with health and safety representatives and employees to determine the appropriate design and range of sizes to be trialled and purchased.

#### 21.2 Personal Protective Equipment in the Meat Industry

The employer should ensure that a personal protective equipment program incorporates the following:

- identification and assessment of the hazard(s) as the basis for the selection of personal protective equipment;
- assigning personal protective equipment to employees for their exclusive use, where appropriate;
- testing for proper fit at each use;
- cleaning and maintenance after use;
- proper storage when not in use;
- periodic inspection and repair after defined times of use;
- periodic evaluation by the administrator of the program to assure its continued functioning and effectiveness;
- supervisor training;
- an employee training program in which employees can become familiar with the personal protective equipment and its proper limitations; and
- guidance of supervisory personnel in continued surveillance of personal protective equipment use and determination of workers' exposure to hazards.

The nature of meat industry processes is such that they require manual tasks using sharp knives and thus are not always amenable to control measures higher up the hierarchy of control.

The employer should ensure that a comprehensive personal protective equipment program is implemented to ensure that the risks associated with the use of hand knives are reduced.

#### 21.3 Selection of Personal Protective Equipment

The employer should ensure the proper selection of personal protective equipment to suit the employees by implementing the following three basic steps.

#### (a) Identification and Assessment of Hazards

The employer should identify and assess hazards in the workplace as the basis for a decision on the need for a personal protective equipment program. The employer should ensure that a survey of operations and work environments is carried out to identify where personal protective equipment may be required.

Identifying potential hazards should include:

- reviewing the work processes;
- maintaining an inventory of physical and chemical agents encountered either routinely or periodically;
- examining all the different job activities of a work area; and
- studying the existing control measures.

#### (b) Selection

No single design of any item of personal protective equipment will provide absolute protection against all hazards which may be found in the workplace. Nor do all designs of a particular device incorporate all features, performance levels and accessories sufficient to protect against the most critical hazards found in a particular industry. It cannot be assumed that any one proprietary item will suit all workers with respect to comfort and acceptability.

The employer should ensure that the selection of personal protective equipment takes into account the following:

- a detailed evaluation of the nature of the hazard(s);
- the circumstances and restrictions of the task(s) to be performed, including temperature and humidity;
- the performance requirement for the item of personal protective equipment;
- the fit and comfort of the item of personal protective equipment to the user; and
- the effect of the item of personal protective equipment on the ability to carry out the task.

The employer should ensure that the selection of personal protective equipment also takes into account the suitability of the device for use in conjunction with any other personal protective equipment that may be required.

Once the personal protective equipment needs have been identified, the employer should ensure that:

- an analysis of the types available to meet that need is carried out;
- test data is checked for each available alternative; and
- fit to the employees is tested.

It is preferable for the user to be allowed a personal choice from among an agreed range of personal protective equipment, though the employer should ensure that the choice is made from among suitable and effective types.

#### (c) Training

The employer should ensure that initial information is provided in a number of ways, including advisory literature, posters, training programs and explanation by supervisors. Personal discussion is more effective as any problems the user may foresee can be raised and, if necessary, remedial action initiated. The employer should ensure that employees using personal protective equipment are provided with training in when, where, why and how to use personal protective equipment to achieve the necessary level of protection.

The persons requiring training concerning personal protective equipment include:

- employees exposed occasionally to the need for personal protective equipment, either in an emergency or as visitors or temporary workers in the danger area;
- employees who have to work frequently or continuously in the danger area;
- selectors of personal protective equipment—to ensure that they specify personal protective equipment according to all of the criteria set out above;
- buyers of personal protective equipment—to ensure that they do not deliberately or inadvertently substitute a less suitable type or make than the one specified, and that they purchase sufficient variety and quantity to suit the population present or likely to be taken on for the range of jobs;
- maintenance staff—so that they know when and how to keep the equipment up to specification;
- managers and supervisors—so that they understand their role in controlling, monitoring, encouraging and enforcing the various aspects of the system; and
- trainers—so that they can plan and carry out all of the training of all the above groups.

The employer should ensure that the training takes place at the introduction of the scheme, for all who are affected by it, and:

- at the induction of new staff into any of the jobs specified above and on in-plant transfers;
- whenever any of the personal protective equipment is changed for new models;
- whenever there are any changes in the regulations or standards governing the provision or use of items of personal protective equipment; and
- when monitoring of the effectiveness of the scheme indicates that refresher training is appropriate.

The training needs and methods appropriate to each of these categories will be different. However, the employer should ensure that a training program includes as a minimum:

- the purpose and necessities for the personal protective equipment;
- understanding the deficiencies and restrictions of personal protective equipment;
- an opportunity to examine appropriate examples of the range of suitable personal protective equipment;
- proper fitting, and how to test for fit; and
- maintenance.

#### 21.4 Use and Maintenance

In order to achieve the necessary degree of protection in practice, the employer should ensure that the conditions of fit and the use and the state of repair of the personal protective equipment each time it is used are as good as that achieved during the original tests. The employer should ensure that wear and tear are considered.

The employer should ensure proper use by arranging for training (see above) of both supervisors and workers in the selection, use and maintenance of personal protective equipment.

The employer should ensure that scrupulous maintenance is an integral part of any personal protective equipment program.

The employer should ensure that there is a proper maintenance program which includes:

- inspection for defects;
- cleaning and disinfecting;
- repair/recharge;
- storage; and
- control of the inventory of components—how items of personal protective equipment are made ready for re-issue after maintenance.

The employer should ensure that arrangements are made to ensure that no person uses an item of personal protective equipment which has been used by another person unless it has been adequately disinfected and cleaned.

#### 21.5 Specific Equipment

#### (a) Moisture-resistant Aprons

Moisture-resistant aprons should be worn to prevent contamination of outer clothing by hazardous biological substances such as ingesta, faeces, blood and other body fluids. Such aprons should be capable of easy cleaning and be replaced as required.

The employer should ensure that:

- these aprons are provided to all employees working in the areas where contamination of outer clothing with water and biological wastes may occur, such as offal rooms, tripe rooms and slaughter floors;
- employees in hide and pelt sheds are provided with aprons of a similar moisture impervious material, which resists penetration by rough or sharp pieces of plant or other materials, for example, burrs; and
- aprons are repaired or replaced when they are no longer effective.

#### (b) Abdominal Protective Aprons

The employer should ensure that:

 Where it is assessed that there is a risk of abdominal or groin injury, all knife users are provided with, and wear, abdominal protective aprons made from chain mail, metal discs or laminated plastic slats which cover the chest, abdominal/groin and upper thigh areas. Halterneck straps on aprons are not recommended as they can cause neck strain.



• Cleaning facilities are provided for this type of protective apron which consist of a hot water spraywash, detergents and rinsing equipment.

#### (c) Hand Protection

The employer should ensure that:

- Employees working in "dry" areas, such as skin and hide sheds, are provided with gloves to guard against contact with burrs or other materials of a hazardous nature. The gloves should allow for considerable dexterity while shielding hands from minor cuts, abrasions, splinters and dirt. Gloves should provide a snug closure around the wrist. Where it is necessary to provide protection to the forearm, then gauntlet gloves should be provided.
- Moisture-resistant hand protection, such as rubber or disposable gloves, is considered.
- Employees working in cold areas are provided with warm glove liners for rubber gloves.
- Employees using knives are provided with, and wear, a properly fitting chain mail glove on the non-knife hand to protect against cuts.
- Mesh gloves have five finger protection and are capable of attaching to a forearm guard.
- Forearm guards are made of mesh or perspex with a lip towards the elbow to prevent knife contact sliding off the guard and into the upper arm.
- Forearm guards are attached to the mesh glove.
- Facilities for cleaning gloves and guards of fat and other contamination are provided.
- Insulated gloves or work-glove liners are provided to employees working in freezers or handling frozen products.

#### (d) Foot and Leg Protection

The employer should ensure that where the relevant risk has been assessed:

- Long aprons that extend beneath the top of rubber boots are provided to prevent hot water contacting the body and entering the boots.
- Leggings or spats are worn outside the boots to prevent water or other fluids entering boots.
- Rubber boots have a tread pattern that provides a non-slip grip on the floor. When the tread pattern deteriorates, the employer should ensure that the boots are replaced.
- Cleaning facilities for rubber boots, consisting of a fixed series of brushes with a spray detergent/water fixture, are provided which enable boots to be worked through it while being worn.
- Employees who may be at risk of toe-crushing injuries, such as hide and pelt shed, maintenance or stockyard workers, are provided with steel-capped boots.
- Employees working in areas where acids/meat emulsions are used are supplied with acidresistant waterproof boots.
- All safety footwear complies with Australian Standard AS 2210 Occupational Protective Footwear.

#### (e) Head Protection

Where there is a risk of head injury, engineering controls should be implemented as the first option to eliminate the risk. If the risk cannot be eliminated, hard hats should be considered. Hard hats are intended to prevent head injuries from falling or flying objects and from bumping one's head.

The employer should ensure that:

- hard hats are worn in areas such as sticking or hoisting operations where falling/ kicking hazards exist; and
- all hard hats comply with Australian Standard AS 1801 Industrial Safety Helmets.

Bump caps will not provide protection from injury. They are used for hygiene purposes and for protection against very minor bumps.

#### (f) Eye and Face Protection

The employer should ensure that:

- In areas of high dust activity, such as carcase splitting or rendering plants, eye and face
  protection, such as goggles and respiratory protection or full-face protection, is provided and
  used.
- In "wet" areas, such as spray cattle washes and carcase washes, eye and face protection is
  provided to prevent contaminated aerosols from contacting the mucosa of the eyes, nose and
  mouth.
- In areas where steam is a potential hazard, anti-fog glasses and goggles are provided and used.
- All eye protection complies with Australian Standard AS 1337 Eye Protectors for Industrial Applications.
- Employees involved in the processing of "brucella reactor" cattle are provided with full-face protective equipment and disposable masks and goggles. Disposable gloves and disposable overalls and/or aprons should also be provided and worn. Disposable protective equipment should be incinerated after use.

#### (g) Hearing Protection

Noise exposure levels in the workplace should not exceed the limits set in the *National Standard for Occupational Noise* (see Chapter 19).

The employer should ensure that:

- Noise levels are reduced by the use of silencers, insulation, isolation of machinery and other types of engineering solutions.
- Hearing protection is provided in areas where engineering and administrative controls do not sufficiently reduce the noise. In these instances, some form of personal protective equipment must be provided, such as ear muffs.
- Reusable rubber plugs, if used, should be properly washed before each use.
- Disposable foam or wax plugs are not used as they may be contaminated with blood, fat or other hazardous materials that may be introduced into the ear and cause infection.
- Employees are trained in the proper fitting and use of hearing protection. The importance of personal hygiene should be stressed, as dirt in the ear or on the hearing protectors can lead to infection in the ear.
- Ear muffs are used to reduce exposure to noise or specific frequencies in areas such as that around bowl choppers and silent cutters where the noise generated is low frequency and requires ear muffs specifically designed to provide low frequency attenuation.

• Hearing protectors comply with Australian Standard AS 1270 Acoustics—Hearing Protectors.

#### (h) Respiratory Protection

The employer should ensure that:

- respiratory equipment to supply oxygen or canisters to filter the air is available, depending on risk assessment, at appropriate locations;
- employees required to enter confined spaces, such as those working in rendering plant blood tanks or with boilers, are fully trained in the use of respirators and know the locations of such equipment;
- appropriate employees and supervisory staff are trained in the operation and maintenance of respirators and are aware of the locations of such equipment; and
- all respirators comply with Australian Standard AS 1715 Selection, Use and Maintenance of Respiratory Protective Devices and Australian Standard AS 1716 Respiratory Protective Devices.

#### (i) Thermal Protection

The employer should ensure that:

- employees employed in freezers are provided with freezer suits, insulated boots and head and face protection; and
- employees working in other cold areas where the temperature is less than 15° C, and who are not
  engaged in strenuous activity, are provided with suitable clothing to protect against prolonged
  exposure to cold.

## Part 5—Emergency Programs and First Aid

## 22. Emergency Programs

Emergency procedures should be developed and should cover each possible source of emergency.

An effective emergency procedures program should highlight the need for planning, organisation and training and maintaining preparedness.

#### 22.1 Planning

The employer should ensure that employees and supervisors are aware of where emergencies may arise.

Internally-originating problems include:

- fire;
- explosion;
- power failure;
- equipment failure;
- gas leakage; and
- escaping animals.

External occurrences that may lead to emergencies include:

- storm and flood; and
- sabotage.

Once the origin of the problem has been established, it should then be a coordinator's role to determine the equipment and facilities required. A successful emergency procedures program should, as a result of thorough planning, have a full inventory of equipment required and the procedure for using it.

The planning phase should also present an evacuation plan, with options to cover all contingencies.

#### 22.2 Organisation and Training

The employer should determine who is responsible for coordinating the response and establish the line of command in an emergency.

Emergency crews should be selected and trained in establishment procedures and plant layout, including local authorities where appropriate. The employer should ensure that all employees are advised as to what is required of them should an emergency develop.

#### 22.3 Maintenance of Preparedness

The employer should ensure that:

- Replacements for emergency crews are available for times of absence.
- Practice drills are conducted and their effectiveness evaluated, and improvements are made, where necessary.
- Training is provided to supervisors and updated when new information becomes available.
- An emergency procedures program keeps all employees informed of what is required. If necessary, such information should be published in community languages and circulated to all employees.

## 23. First Aid

#### 23.1 Medical and First Aid Facilities

Compensation data and practical experience in the meat industry demonstrate that the industry provides a hazardous work process and thus requires the provision of first aid facilities that may be in addition to the minimum legal requirements.

#### 23.2 First Aiders

The employer should ensure that at least the minimum legal requirements are met. Assessment of the need for number and level of first aiders should be undertaken in consultation, taking into account:

- the size and layout of the workplace;
- the location of the workplace;
- the number and distribution of employees, including shiftwork arrangements;
- the nature of the hazards of the work;
- known occurrences of accidents or illnesses; and
- the distance from the workplace to the nearest available and appropriate health and medical services, including the location of the nearest ambulance service.

The employer should ensure that the standard training provided by an accredited first aid training provider is supplemented with specific training in the recognition of infections, such as zoonotic diseases. First aiders should be given specific training in how to protect themselves against transmission of infectious diseases such as Hepatitis B.



#### 23.3 First Aid Rooms

In most States and Territories there are regulations which prescribe the minimum standards regarding the provision of first aid rooms. However, in recognition of the particular risks associated with work in the meat industry, the employer should, in consultation, determine whether a first aid room is required, even if not prescribed by the regulations. All first aid rooms should be fully equipped with equipment and materials relevant to the particular hazards that exist in the workplace, including eye modules and burns modules, where appropriate.

#### 23.4 First Aid Kits

The employer should ensure that the provision of first aid kits is at least in compliance with the minimum legal requirements. In consultation, the employer should assess all parts of the workplace, and the risks associated with the work to determine if additional kits are required. For instance:

- first aid kits in pig dehairing areas should include an eye module; and
- first aid kits in rendering rooms and maintenance workshops should include a burns module.

Reference should be made to Chapter 15 for specific advice on first aid in relation to occupational diseases.

## Appendices

- 1. Model Self-audit Checklist
- 2. Model Health and Safety Policy
- 3. Summary of Health and Safety Representatives' Rights and Functions
  - New South Wales Victoria Queensland South Australia Western Australia Tasmania Northern Territory Australian Capital Territory
- 4. Model Housekeeping Checklist
- 5. Model Safe Manual Handling Checklist

Risk Identification Checklist Risk Assessment Checklist Risk Control Plan

- 6. Sample Material Safety Data Sheet
- 7. Model Checklist for Plant
- 8. Model Maintenance Inspection Checklist
- 9. Model Confined Space Entry Permit

## **Model Self-audit Checklist**

The following self-audit checklist may be used by companies to assess and monitor the effectiveness of their approach to occupational health and safety management. The purpose of the checklist is to enable companies to pinpoint possible deficiencies in their systems and to develop appropriate corrective strategies. A self-audit checklist is different to a hazard checklist. The underlying philosophy is one of achieving continuous improvement in occupational health and safety management. It is recommended that the self-audits be undertaken by a small team, with representatives from both management and employees.

#### A. Management Commitment and Involvement

- 1. Does the organisation have a health and safety policy?
- 2. Do all employees have access to a copy of the policy?
- 3. Is the policy reviewed regularly?
- 4. Has the company set clear objectives for improving health and safety?
- 5. Have health and safety responsibilities been defined in writing for all levels of management?
- 6. Are managers familiar with these responsibilities?
- 7. Is there a system for checking that responsibilities are being met?
- 8. Is health and safety regularly discussed at management meetings?
- 9. Do all managers visibly demonstrate a commitment to health and safety by their actions and involvement?
- 10. Is the health and safety program integrated into the overall management system?

#### **B.** Employee Awareness and Participation

- 1. Are relevant legislation and regulations regarding health and safety representatives and/or health and safety committees complied with?
- 2. Are there clear mechanisms for employees to raise health and safety concerns?
- 3. Does management actively seek the involvement of employees in identifying, assessing and solving health and safety problems?
- 4. Is there an agreed procedure for resolving health and safety issues?
- 5. Do employees have the skills needed to actively participate in solving health and safety problems, for example, communication, problem-solving, etc?

#### C. Training

- 1. Do all new employees receive adequate induction training which includes health and safety?
- 2. Are health and safety skills and information included in the overall training program?
- 3. Have all managers and supervisors received training in health and safety?
- 4. Is the training program documented and are records maintained?
- 5. Is the effectiveness of training regularly evaluated?
- 6. Do the people delivering the training have adequate training skills?

#### D. Risk Identification, Assessment and Control

- 1. Have procedures been developed to identify, assess and control health and safety risks in the workplace?
- 2. Are employees aware of, and involved in, these procedures?
- 3. Are regular workplace inspections/safety audits undertaken?
- 4. Is there a system for recording incidents and accidents?
- 5. Are employees, managers and supervisors aware of the system?
- 6. Are performance indicators for health and safety used to help prevent work-related injuries and diseases?
- 7. Are there established procedures for investigating accidents and serious incidents?
- 8. Is there a preventive maintenance program which takes account of health and safety issues?
- 9. Is equipment inspected regularly and maintained?

#### E. Specific Workplace Issues

- 1. Does the organisation have specific strategies, where appropriate, to address possible risks associated with the meat industry such as:
  - manual handling;
  - overuse strains;
  - noise;
  - hazardous substances;
  - knife safety;
  - mechanical and electrical hazards;
  - confined spaces;
  - temperature extremes;
  - zoonotic diseases;
  - slips and falls; and
  - work organisation, for example, shiftwork and extended hours in retail outlets.

#### F. Communication and Information

- 1. Is there a clear mechanism for health and safety information to be communicated to employees?
- 2. Is there a system to ensure that relevant information on plant, equipment, hazardous substances and work processes is maintained?
- 3. Has the need for languages other than English and literacy needs been assessed?

#### **G. Emergency Procedures**

- 1. Has an emergency procedure been documented?
- 2. Is a trained emergency team in place?
- 3. Are regular emergency evacuations practised?
- 4. Are all fire extinguishers and fire exits signposted and maintained?

- 5. Are all employees familiar with the emergency procedures?
- 6. Is provision made for ensuring the health and safety of visitors to the workplace?

#### H. Personal Protective Equipment

- 1. Are there systems to assess whether personal protective equipment and clothing is required and what type is needed?
- 2. Where personal protective equipment is provided, is there a system which ensures that it is properly fitted, maintained, worn correctly and as required and is replaced when necessary?
- 3. Have employees received adequate training in the use of personal protective equipment?

#### I. Purchasing and Design

- 1. Is there a purchasing policy that requires that health and safety issues be taken into account when purchasing equipment and substances?
- 2. Are employees consulted prior to changes in workplace design, layout or work organisation which may affect health and safety?
- 3. Have persons responsible for workplace design, purchasing or development of work practices received appropriate training in health and safety?
- 4. Are suppliers/sub-contractors required to conform to the company's health and safety standards?

#### J. First Aid

- 1. Are relevant regulations complied with in relation to:
  - number and training of first aiders;
  - provision of first aid kits;
  - provision and design of first aid room(s); and
  - employment of specialised personnel, for example, occupational health nurses?
- 2. Are all employees aware of how to gain access to first aid treatment in an emergency?
- 3. Are first aiders aware of company procedures for calling an ambulance, transfers to hospital, referral to a medical practitioner, workplace-based rehabilitation, etc?
- 4. Are first aiders trained in the prevention of infectious diseases such as hepatitis and HIV?
- 5. Have all first aiders been offered Hepatitis B injections?

#### K. Rehabilitation

- 1. Have rehabilitation policy and procedures been documented and are they regularly reviewed?
- 2. Has a Rehabilitation Coordinator been identified and trained?
- 3. Are active efforts made to return injured/ill employees on alternative duties wherever appropriate?
- 4. Is regular contact made with injured employees off work?
- 5. Are all employees aware of the workplace-based rehabilitation program?
- 6. Are efforts directed towards creating a positive "culture" for rehabilitation to occur?

#### Self-audit Checklist Report

#### 1. Rate Current Position

- S Satisfactory—regular review will be undertaken.
- R In place—but refinements necessary.
- U Unsatisfactory, inadequate or non-existent-major upgrade required.
- N Not applicable to this site.

#### 2. Priority to Establish an Action Plan

A priority system is required. Issues to be considered include:

- likelihood and severity of risks;
- legislative compliance;
- costs; and
- timeframe.

Urgent—to be rectified as soon as possible. High—to be rectified within one month. Medium—to be rectified within six months. Low—to be rectified within twelve months.

#### 3. Action Plan

An action plan should include:

- strategies for implementation;
- timetable; and
- responsibilities.

#### 4. Monitoring and Evaluation

#### 5. Report Format

Item	Rating	Priority	Action Plan
A:1			
A:2			
A:3			
etc.			

### Appendix 2

## Model Health and Safety Policy

A health and safety policy is one way in which employers are able to demonstrate a commitment to health and safety, and in some States it is a legal requirement for companies to develop a written policy document. The health and safety policy should reflect the company's aims and objectives and should signal that a planned, comprehensive and integrated approach to the management of occupational health and safety will be developed and implemented. Health and safety policies should be developed using a consultative approach which demonstrates the company's commitment to involving employees in issues affecting their health and safety.

Employers should ensure that the health and safety policy is widely communicated throughout the organisation and that language and literacy issues have been given appropriate consideration.

#### Example of a Health and Safety Policy—ABC Meatworks

The management and employees of ABC Meatworks are committed to the belief that every employee is entitled to a safe and healthy place in which to work. The achievement of zero injuries and illnesses in the workplace is our ultimate objective. We will continuously seek to improve our processes, practices and procedures in order to achieve this goal, and to ensure this, we undertake to:

- Comply with all relevant legislation.
- Provide a healthy and safe work environment.
- Consult with our employees and their representatives on matters affecting their health and safety.
- Provide and maintain appropriate equipment to protect employees' health and safety.
- Train all employees, managers and supervisors so that they may perform their tasks safely and meet their responsibilities.
- Consider health and safety when purchasing or designing plant and equipment, or altering work organisation and work practices.
- Develop and document policies, procedures and responsibilities in relation to specific hazards, risk assessment, rehabilitation, etc.
- Ensure that all managers and supervisors are held accountable for their health and safety responsibilities.
- Regularly evaluate and update our health and safety program.

All managers, supervisors and employees must fully understand their responsibilities for health and safety and must demonstrate a personal commitment to our aims and objectives in this regard. We are committed to achieving best practice in occupational health and safety through the cooperative efforts of everybody within our company.

Signed by: Chief executive and employee representative

Date:

# Summary of Health and Safety Representatives' Rights and Functions

The information in this appendix is a summary of the rights and functions accorded under State and Territory occupational health and safety legislation to employees elected to represent other employees on health and safety matters in the workplace.

For exact advice on the method of election and the powers of the representative, administrative requirements in relation to the representative, and for information on the role of health and safety committees, refer to the relevant Act and regulations. Relevant government authorities in each State and Territory can advise on where to obtain copies of the legislation.

The advice contained in the *National Guidelines for Health and Safety in the Meat Industry* goes beyond the legislative requirements in some States and Territories in the area of consultative arrangements with employees and their representatives. The legislative requirements should be seen as the minimum standard, as an effective occupational health and safety program requires the involvement of company personnel at all levels.

Where the following summaries refer to "the workplace", it means the whole or any part of the workplace, or where there is more than one representative, those parts of the workplace in which the employees who elected that representative may go in the course of their work.

#### **New South Wales**

The Occupational Health and Safety Act 1983 and regulations confers particular powers on members health and safety committees. A committee must be formed where there are more than 20 persons employed, and more than half of those persons request it. Employee representatives should make up at least half of the committee. Committee members have the following powers:

- to inspect the workplace in a manner determined by the committee at agreed intervals of not less than three months; whenever there is immediate risk of injury; or at any time with the approval of the employer;
- to be provided with details of proposed changes to the workplace that could affect health and safety, before the change occurs;
- to have access to information relating to accidents, occupational diseases and any plant or substance for use at the workplace;
- to recommend particular training to overcome occupational health and safety hazards; and
- to exercise his or her functions as a representative and attend approved training during paid time.

The Act also confers the right on an employee representative, not necessarily being a health and safety committee member, to be consulted by, and to accompany, an inspector during an inspection.

#### Victoria

The Occupational Health and Safety Act 1985 confers the following rights and functions on health and safety representatives:

- to inspect the workplace after giving reasonable notice to the employer or immediately in the event of an accident or hazardous situation;
- to accompany an inspector during an inspection of the workplace;
- to require the establishment of a health and safety committee;
- to be present at an interview between an employee and either an inspector or the employer, providing the employee consents;
- to have access to information held by the employer relating to actual or potential hazards and the health and safety of employees (only with employee consent, or in a form that does not allow the identification of the employee);
- to be consulted on all proposed changes to the workplace, plant or substances that may affect health, safety and welfare at the workplace;
- to take such time off work with pay to perform functions or attend approved training courses;
- to be provided with facilities and assistance by the employer in order to exercise their rights and perform their functions;
- to seek the assistance of any person in performing their functions;
- to be notified by an inspector upon entry to a workplace;
- to receive information from an inspector about his/her observations and any action proposed by the inspector;
- to be notified of all health and safety issues reported in the workplace;
- to issue a Provisional Improvement Notice where a contravention of the Act cannot be resolved through consultation; and
- to direct work to cease where there is immediate threat to health and safety, after consultation with the employer.

## Queensland

The *Workplace Health and Safety Act 1989* confers the following rights and functions on health and safety representatives:

- to inspect the workplace at weekly intervals;
- to report in writing to the health and safety officer or employer on all matters concerning the health and safety of persons at the workplace;
- to participate in the activities of a health and safety committee;
- to request the employer to establish a health and safety committee; and
- to be consulted on all proposed changes to the workplace, plant or substances used that may affect health and safety at the workplace.

## South Australia

The Occupational Health, Safety and Welfare Act 1986 allows for the election of a health and safety representative and a deputy who, in the absence of the health and safety representative, may perform the functions of the health and safety representative. Those rights and functions are:

- to require the employer to form a health and safety committee;
- to be consulted by the employer on the composition of that committee;
- to be a member of that committee, and to require the committee to meet;
- to inspect the workplace after giving reasonable notice to the employer, or immediately in the event of an accident or hazardous situation;
- to investigate complaints relating to occupational health, safety or welfare made by employees in the workgroup;
- to be present at an interview between the employer or an inspector and an employee, at the employee's request;
- to make representations to the employer on any matter relating to occupational health, safety or welfare at the workplace;
- in relation to a workplace inspection, be accompanied by such consultants as the representative thinks fit, discuss relevant matters with employees, and carry out any investigation that may appear appropriate;
- to be consulted on any proposed changes to the workplace, the plant or substances used, handled, processed or stored at the workplace, the work conducted or procedures for carrying out that work, where the changes might affect occupational health, safety and welfare;
- to be consulted on any proposed changes to occupational health, safety and welfare practices, procedures and policies;
- to have access to information (and, on request, to be supplied with copies of information) relating to risks that may arise in the workplace, and aggregate information relating to the health and safety of employees;
- to be immediately notified of an accident or hazardous situation;
- to be notified of all work-related injuries;
- to be provided with facilities and assistance to perform their functions and duties;
- to take time off work with pay to perform functions of a representative or take part in approved training courses;
- to issue a default notice requiring a person to remedy a contravention of the Act, where such a contravention cannot or has not been resolved by consultation;
- where there is immediate threat to the health and safety of an employee, direct that work cease (where possible, consultation with the employer should occur prior to this);
- to be notified when an inspector attends the workplace;
- to accompany an inspector during an inspection of the workplace;
- to receive information from an inspector about his/her observations and any actions proposed by the inspector; and
- to be provided with copies of any notices issued by an inspector.

## Western Australia

The Occupational Health, Safety and Welfare Act 1984 confers the following rights and functions on health and safety representatives:

- to inspect the workplace at agreed times, or after reasonable notice to the employer if 30 days have passed without an inspection;
- in the event of an accident or immediate threat to health and safety, to inspect immediately and carry out appropriate investigations;
- to report any hazard or potential hazard at the workplace to which an employee is, or might be, exposed;
- where there are more than 10 employees in the workplace, to request the employer to establish a health and safety committee;
- to refer any matters he/she thinks relevant to the health and safety committee;
- to be a member of a health and safety committee;
- to be notified of an inspector's presence in the workplace;
- where requested by an inspector, accompany that inspector in the performance of his/her functions in the workplace;
- to have access to information relating to hazards arising from plant and substances used and the systems of work at the workplace, and to the health and safety of employees (only with employee consent, or in a form that does not permit identification of the employee);
- to be present at an interview between an employee and the employer concerning occupational health, safety or welfare, at the employee's request;
- to take time off work with pay to perform the functions of a health and safety representative and attend approved training course;
- to be notified of all accidents or dangerous occurrences in the workplace; and
- to be provided with facilities and assistance necessary to perform their functions.

## Tasmania

The *Industrial Health, Safety and Welfare Act 1977* allows for the election of employee safety representatives where more than 10 people are employed in a workplace. The Act and regulations made under it confer the following rights and functions on employee safety representatives:

- to require the employer to confer with the representative for the purpose of ensuring compliance with the Act, on reasonable request;
- to inspect the workplace as is reasonably necessary;
- to accompany an inspector during his/her inspection of the workplace;
- to be provided with the results of any inquiry into an accident, injury or illness in the workplace; and
- to be provided with information relating to the hazards of the work carried out in the workplace.

## **Northern Territory**

The *Work Health Act 1986* allows for the establishment of a health and safety committee where more than 20 persons are employed. The Act confers the following rights and functions on health and safety committees, at least half the members of which must be elected by the workers at the workplace:

- to nominate a person to inspect the workplace at agreed times or, if more than 30 days have elapsed with no inspection, on giving reasonable notice to the employer;
- to have access to information relating to hazards arising from the plant and substances used and the system of work at the workplace, and the health and safety of workers;
- to be consulted on proposed changes at the workplace which may affect the health and safety of workers;
- to be notified as soon as possible after an accident or dangerous occurrence;
- to be provided with reasonable facilities and assistance for the performance of the committee's functions;
- to be permitted to carry out their functions as members of the health and safety committee and attend relevant training courses; and
- to be involved in the development, implementation, maintenance and monitoring of health and safety
  programs and procedures, including standards, the keeping of information, proposed changes, education
  and training.

### **Australian Capital Territory**

The Occupational Health and Safety Act 1989 allows for the election of health and safety representatives and deputy health and safety representatives. The following rights and functions conferred on the health and safety representative may be exercised by the deputy when the health and safety representative, because of absence or any other reason, is unable to do so:

- to inspect the workplace after giving reasonable notice, or after an accident or dangerous occurrence in the workplace or if the representative believes that there is an immediate threat of an accident or dangerous occurrence;
- to accompany an inspector during an inspection;
- to investigate employee complaints and represent employees in consultations with the employer concerning the development, implementation and review of health and safety measures;
- to examine the records of the health and safety committee;
- to be present at an interview concerning health and safety between an employee and an inspector or the employer, with the employee's consent;
- to have access to information relating to risks to health and safety arising from the conduct of an undertaking by the employer, and plant and substances used, and to the health and safety of employees, with the permission of employees, or in a form that does not identify the employees;
- to take time off work with pay to exercise the powers of a health and safety representative and to undertake an approved training course;
- to have access to facilities to enable the representative to exercise his or her powers;
- to issue a Provisional Improvement Notice to a person contravening or likely to contravene the Act, after taking all reasonably practicable steps to rectify the matter through consultation;
- where an immediate threat to health and safety exists, to inform the supervisor of that threat or, where the supervisor cannot be contacted immediately, to direct work to cease; and
- to be given copies of any notices issued by an inspector.

# Appendix 4

# Model Housekeeping Checklist

Checklists should be developed for individual workplaces, and separate parts of the workplace. They should be adapted from models available, like the one following, or from other sources. Checklists should be used carefully. They allow easy, on the spot recording of findings, and assist you to be organised about an inspection. However, be careful that you do not become so intent on filling out the checklist that you miss other problems which may not be recorded on it.

The following checklist is a model only, and essentially covers "housekeeping" issues. Regular use of such a checklist can assist in the early identification of hazards. Other types of checklists, such as the Model Safe Manual Handling Checklist (see Appendix 5), can be used to identify the various risk factors associated with a single hazard.

### A. Maintenance

1.	Have rails been greased?	🗖 Yes	🗖 No
2.	Is the band saw guard in place?	🗖 Yes	🗖 No
3.	Is other machinery properly guarded?	🗖 Yes	🗖 No
4.	Is the emergency stop button on the band saw in working order?	🗖 Yes	🗖 No
5.	Are emergency stop buttons on other machinery in working order?	🗖 Yes	🗖 No
6.	Are wheels of trolleys running smoothly?	🗖 Yes	🗖 No
7.	Are floor surfaces in good condition?	🗖 Yes	🗖 No
8.	Are stairs and ramps in good condition?	Yes	🗖 No
В.	Safety/Emergency Equipment		
1.	Is the first aid kit adequately stocked?	🗖 Yes	🗖 No
2.	Is there a properly qualified first aider on the premises at all times when work is being done?	🗖 Yes	🗖 No
3.	Are mesh gloves and aprons in good condition?	🗖 Yes	🗖 No
4.	Are rubber gloves and plastic aprons provided for clean up?	🗖 Yes	🗖 No
5.	Are emergency lights in working order?	🗖 Yes	🗖 No
6.	Are emergency exits accessible?	🗖 Yes	🗖 No
7	Is fire suppression equipment in place, and in working order?	T Yes	🗖 No

С.		Environment	
1.	Domestic: Is the temperature maintained at a 15°C minimum?	Yes	🗖 No
	Export: Is the temperature maintained between 8°C and 10°C?	Yes	🗖 No
2.	Are the cold air fans directed so that cold air does not blow directly onto the workers?	🗖 Yes	🗖 No
3.	Is suitable clothing available for those workers who need extra protection against the cold?	TYes	🗖 No
4.	Is ventilation of the room adequate?	Yes	🗖 No
5.	Is the lighting adequate?	Yes	🗖 No
6.	Are noise levels kept below an L <sub>Aeq,</sub> 8h of 85 dB(A)?	TYes	🗖 No
	If not, are hearing protection devices provided?	🗖 Yes	🗖 No
	Are hearing protection devices properly maintained?	Yes	🗖 No
D.	Systems of Work		
1.	Is there adequate working space for each worker on every job that they do?	🗖 Yes	🗖 No
2.	If there have been any changes to the systems of work, were they introduced only after consultation with the health and safety representative and workers?	Yes	🗖 No
3.	Have incident reports and first aid records been checked to identify tasks that may be hazardous?	🗖 Yes	🗖 No
4.	Has risk identification and assessment of those tasks been undertaken?	TYes	🗖 No
Е.	Hazard Substances		
1.	Is there a substances register, and is it up to date?	Yes	🗖 No
2.	Have Material Safety Data Sheets been provided for all hazardous chemicals in use?	🗖 Yes	🗖 No
F.	Amenities		
1.	Is cool, clean, palatable drinking water provided in the workplace?	TYes	🗖 No
2.	Is water pressure sufficient in amenities?	🗖 Yes	🗖 No
3.	Is the supply of hot and cold water properly balanced?	🗖 Yes	🗖 No
4.	Are soap and nailbrushes provided at handbasins?	🗖 Yes	🗖 No
5.	Are hand drying facilities provided?	🗖 Yes	🗖 No
6.	Are waste bins in the amenities provided with lids?	Yes	🗖 No
7.	Are sanitary disposal units provided in the women's toilets?	TYes	🗖 No
8.	Is soiled work clothing removed daily?	TYes	🗖 No
9.	Are the amenities properly cleaned daily?	🗖 Yes	🗖 No

# Model Safe Manual Handling Checklist

# **Risk Identification Checklist**

Description of work location	
	Date
Task description	
Assessed by: Employer	. Position
Assessed by: Employee(s)	. Position(s)
Assessed by: <i>Health and</i> safety representative(s)	. Position(s)

The existence of any one of the following key risk factors, that is, a Yes answer, indicates the need for further assessment as outlined in Chapter 4 the *National Code of Practice for Manual Handling*.

## A. Movement, Posture and Layout during Manual Handling

1.	ls tł pas	nere frequent or prolonged bending down where the hands s below mid-thigh height?	🗖 Yes	🗖 No
2.	ls th	nere frequent or prolonged reaching above the shoulder?	TYes	🗖 No
3.	ls th rea	nere frequent or prolonged bending due to extended ch forward?	🗖 Yes	🗖 No
4.	ls tł	nere frequent or prolonged twisting of the back?	TYes	🗖 No
5.	Are peri upri	awkward postures assumed frequently or over prolonged jods, that is, postures that are not forward facing and ight?	TYes	🗖 No
	в	Task and Object		
1.	ls n peri	nanual handling performed frequently or for long time lods by the employee(s)?	🗖 Yes	🗖 No
2.	Are	loads moved or carried over long distances?	TYes	🗖 No
3.	ls tł	ne weight of the object:		
	(a)	more than 4.5 kilogram and handled from a seated position?	Yes	🗖 No
	(b)	more than 16 kilogram and handled in a working posture other than seated?	🗖 Yes	🗖 No
	(c)	more than 55 kilogram?	TYes	🗖 No

Note: Weight is not used to prescribe absolute limits, but is one of the important factors to be considered when assessing and controlling risk.

4.	For pushing, pulling or other application of forces, are large
	pushing/pulling forces involved?

T Yes	🗖 No
<b>L</b> , 100	

5.	Is the load difficult or awkward to handle, for example, due to its size, shape, temperature, instability or unpredictability?	TYes	🗖 No
6.	Is it difficult or unsafe to get an adequate grip on the load?	TYes	🗖 No
C.	Work Environment		
1.	Is the task performed in a confined space?	Yes	🗖 No
2.	Is the lighting inadequate for safe manual handling?	Yes	🗖 No
3.	Is the climate particularly cold or hot?	Yes	🗖 No
4.	Are the floor working surfaces cluttered, uneven, slippery or otherwise unsafe?	TYes	🗖 No
D.	Individual Factors		
1.	Is the employee new to the work or returning from an extended period away from work?	TYes	🗖 No
2.	Are there age-related factors, disabilities or other special factors that may affect task performance?	TYes	🗖 No
3.	Does the employee's clothing or personal protective equipment interfere with manual handling performance?	🗖 Yes	🗖 No

# **Risk Assessment Checklist**

To be filled out with consultation between employer, health and safety representative(s) and employee(s).

The Risk Identification Checklist should be completed before using this checklist.

Description of work location MUTTON KILL FLOOR

	Conthelia	ABC	MEATW	ORKS	R. G. Class	
	here a	INT I	un inco	Halard	Date 15	17/95
Task worksta	tion 7R/M	AREA-	REMOVAL	OF WASTE	IN BUC	KETS"
Assessed by:	Employer	JACK "	MANAGER	Position	SHPER	1180R
Assessed by:	Employee	s) MARIA	NORKER	Position	(s) LABOU	RER
Assessed by: safety represe	Health an ntative(s)	d JOE WOI	RKER	Positior	(s) KILL FL	DOR. SAFET
Have there be	een any ree	ords of inju	ry related to	this task at this	workplace?	TYes D No
Records" at p	page 25 of the port of the por	he National	Code of Pra	ctice for Manual	Handling.	DOING
THIS : 101	A	- 10	-			
f No, procee	d directly	to the risk as	ssessment im	mediately below	M - 7 DA	уJ
f No, procee Refer to Cha	d directly pter 4 of t	to the risk as	ssessment im Code of Prac	mediately below	∽ - ⁊ ⊅♠ Handling for	yJ guidance)
If No, procee Refer to Cha	d directly pter 4 of t	to the risk as	ssessment im Code of Prac	mediately below	∽ - ⁊ ₯♠	yJ guidance)
f No, procee Refer to Cha lection in Code of	d directly pter 4 of t	to the risk as	ssessment im Code of Prac	mediately below	M - 7 DA Handling for	guidance)
If No, proceed Refer to Cha Dection in Code of Practice	d directly pter 4 of t	to the risk as	ssessment im Code of Prac	mediately below	∽ - ⁊ ₯↔ Handling for Is there	guidance) a Risk?
If No, procee Refer to Cha Section in Code of Practice	d directly pter 4 of the	to the risk as	ssessment im Code of Prac	mediately below	M - 7 DA Handling for Is there	guidance) a Risk?
If No, procee Refer to Cha Section in Code of Practice 4.6-4.7 A	d directly pter 4 of the	to the risk as the National of movements	ssessment im Code of Prac	mediately below	M - 7 DA Handling for Is there	guidance) a Risk?
If No, procee Refer to Cha Section in Code of Practice 4.6-4.7 A	d directly pter 4 of the actions and ASY 70	movements	ssessment im Code of Prac	nediately below trice for Manual	<u>~ 7 DA</u> Handling for Is there <u>_</u> 7 Yes	guidance) a Risk?
If No, proceed Refer to Cha Dection in Code of Practice	d directly pter 4 of the actions and ASY 700 BEND	movements E TR I CA To o N E	ssessment im Code of Prace	nediately below tice for Manual - NEED TO LIFT	<u>~ 7 DA</u> Handling for Is there	guidance) a Risk?

4.8-4.10 Layout of workplace NO MECHANICAL AIDS Yes INO USED. LAYOUT NOT MATCHED TO WORKER AT POINT OF EMPTYING BUCKET - HAS TO LIFT HIGH Yes No 4.11-4.13 Posture 4.14-4.18 Duration and frequency of activity <u>LIFTING</u> Yes No ONLY PERFORMED FIVE TIMES PER HOUR. 4.19-4.20 Distance and time handled \_\_\_\_\_ I Yes I No 4.21-4.23 Weight AVERAGE: 17 Kg. RANGE 10-20 Kg Yes I No WORK SURFACE IS SLIPPERY AND BUCKET MUST BE HELD AWAY FROM BODY DUE TO 40 CM DIAMETER. 4.24-4.26 Force applied TIPPING BUCKET INTO DYes DNO WASTE CHUTE INVOLVES PUSHING. HOWEVER, WORKER STATES THAT THIS IS MINIMAL. 4.27-4.31 Nature of load OCCASIONALLY BUCKET DYes DNO HANDLE IS GREASY, MAKING IT DIFFICULT TO HOLD, BYCKET IS AN AWKWARD SIZE & SHAPE TO CARRY IN BALANCED POSTURE.

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4.32-4.33	Work organisation	_ 🖸 Yes 🗹 No
4.34-4.36	Conditions of workplace FLOORS SLIPPERY AND WET; AIR IS HUMID; HOUSE KEEPING POOR	- - - - - - - - -
4.37-4.38	Skill and experience of employee	- □Yes ØNo
4.39-4.42	Age of employee	I Yes INo
Any other f	actors/comments	Options Changes SCREW/Chile CREW TO DIS ADDR OF
	The Lines No. 546, 9385 3.24	

## **Risk Control Checklist**

List factors assessed as a risk from the Risk Assessment Checklist

ASYMMETRICAL BODY POSTURE, POORLY LOCATED DISPOSAL CHNTE! 17 Kg WEIGHT; LOAD DIFFICULT TO HOLD DUE TO SHAPE/SIZE OF CONTAINER; SLIPPERY HANDLE AND FLOORS.

(Refer to Chapter 5 of the National Code of Practice for Manual Handling for control options)



# **Risk Control Plan**

To be developed in consultation with health and safety representative(s) and employee(s).

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# Sample Material Safety Data Sheet

# CALMAN AUSTRALIA PTY. LTD. ACN. 005 222 560

90 Fairbank Road, Clayton South, Vic. 3169 Telephone: (03) 551 6211 Facsimile: (03) 551 8758

# Material Safety Data Sheet



RUST AND SCALE REMOVER Page 1 of 2 Date Issued : 11 July 1994 Version No. : 3

Normal Office Hours - Mon-Fri 8.30am-5.00pm (E.S.T.) Non Office Hours, Weekends and Holidays (03)579-0060 Melbourne Poisons Information Centre Local Poisons Information Centres -Local Emergency Services in your State

(03)551-6211 (03)592-9959 0055 15678 Refer Telephone Directory

Polsons Sch.: 6

(03)723-4543

PRODUCT IDENTIFICATION PRODUCT NAME & TRADE NAME : Rust and Scale Remover : Acid deruster and descaler Subsidiary Risk : None :8A1 EPG HAZCHEM Code : 2R

**EMERGENCY CONTACTS** 

U.N. No. : 1760 D.G. Class :8 USE/APPLICATION :

SYNONYMS

Designed to remove rust, scale, salts and other deposits from metal hooks, rollers, and overhead rails. An alkali stripping solution is recommended to first remove fats, greases and oils. Items should then be rinsed with water and immersed in Rust and Scale Remover (diluted 1:10 with water). Always add product to water when mixing. Rinse items with water prior to treatment with Hook Oil. Consult Technical Information Bulletin or label for detailed directions. iled directions.

:3

INGREDIENTS	CAS No.	S In Product
Phosphoric Acid	7664-38-2	60-80
Sulphuric Acid	7664-93-9	5-10
Proprietary blend of surfactants	Proprietary	1-5

**Packaging Group** 

#### PHYSICAL DESCRIPTION / PROPERTIES

APPEARANCE AND ODOUR BOILING POINT/MELTING POINT (°C) VAPOUR PRESSURE (mm Hg at 25 °C) PERCENT VOLATILES SOLUBILITY IN WATER	: Clear red thin liquid with : approx. 100 : N/D : 30-35 : Complete	a mild sour odour. pH (CONCENTRATE) pH (USE DILUTION OF) SPECIFIC GRAVITY OTHER DATA	: 1.0-1.5 : 1.5-2.0 (1:100) : approx. 1.35 : None
	FIRE AND EXPLOSIC	ON DATA	

FLASH POINT ( \*C) : None. Not flammable. AUTOIGNITION TEMP ( C) : N/D FLAMMABILITY LIMITS % : LEL Not applicable UEL Not applicable

### HEALTH HAZARD INFORMATION

ACUTE AND CHRONIC EFFECTS (	OF OVEREXPOSURE
-----------------------------	-----------------

EYE : Concentrate and solutions are irritants to eyes and mucous membranes. Overexposure may lead to eye tissue damage. SKIN : Skin contact may produce irritation. Repeated or prolonged skin contact may produce skin inflammation characterised by redness or itching. : Inhalation of vapour is unlikely due to low volatility of product. Breathing excessive amounts of INHALED spray mist may produce nasal and upper respiratory irritation characterised by discomfort and sore throat. Effects of prolonged occupational exposure are not known. : Concentrate and solutions are irritants to mouth, oesophagus and stomach. Chronic health effects not known. SWALLOWED FIRST AID PROCEDURES : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting upper and lower lids. EYE Get medical attention at once. > Immediately flush contaminated skin with plenty of water for at least 15 minutes. Get medical attention SKIN if irritation develops. INHALED : In case of overexposure move exposed person to fresh air. Flush mouth and nasal passages with water repeatedly. If irritation persists, get medical attention promptly. SWALLOWED : Thoroughly rinse mouth with water. Do not induce vomiting. Give plenty of water to drink. Get medical attention at once.

SYDNEY	BRISBANE	ADELAIDE	LAUNCESTON	ZEP products are man
Telephone: (02) 979 7644	Telephone: (07) 277 9868	Telephone: (08) 262 1499	Telephone: (003) 31 9193	in Australia upder lice
Facsimile: (02) 979 7634	Facsimile: (07) 275 1545	Facsimile: (08) 262 7876	Facsimile: (003) 31 4422	ZEP Manufacturing Ci
1		Pacannine. (00) 202 7876	Pacsimile: (003) 31 4422	Atlanta Georgia U

nce from ompany.

RUST AND SCALE REMOVER Page 2 of 2 Date Issued : 11 July 1994 Version No. : 3

#### ADVICE TO DOCTOR

Treat symptomatically as for highly acidic materials. Contact Poisons Information Centre.

#### PRECAUTIONS FOR USE

EXPOSURE LIMITS : Not established for product. Exposure Standards (NOH & SC) for ingredients:

phosphoric acid - 1 mg/m<sup>3</sup>; sulphuric acid - 1 mg/m<sup>3</sup>. ENGINEERING CONTROLS : Use with adequate ventilation. Use exhaust fans and open windows in enclosed spaces. Avoid generating mists.

PERSONAL PROTECTION :

GLOVES : Avoid contact. If contact with hands is likely, wear natural rubber or acid resistant gloves.

PROTECTIVE CLOTHING : Wear full body clothing (eg. long sleeved shirt, pants, overalls) and acid resistant footwear and apron as appropriate. Remove and launder soiled clothing before re-use.

EYE PROTECTION : Wear approved safety glasses/goggles or face shield when handling concentrate and solutions, especially if contact lenses are worn.

RESPIRATORY PROTECTION : Keep face away from mists. If inhalation risk exists wear appropriate mask or respirator approved under Australian Standard.

FLAMMABILITY : Non-Flammable, non-combustible. No specific fire hazards associated with product. No specific ventilation, earthing or flameproofing requirements.

#### SAFE HANDLING INFORMATION

STORAGE & TRANSPORT :

UN No. 1760 (Corrosive Liquid, N.O.S.), Class 8 Dangerous Substance. Observe requirements under State Regulations for Storage and transport. Product is a Scheduled Poison (S6) and must be stored in accordance with relevant State Poisons Act. Keep away from strong alkalis, hypochlorites and oxidising agents.

- SPILLS : Steps to be taken in case material is released or spilled: Observe safety precautions as outlined in "Personal Protection" section above. Contain and absorb spills using an inert absorbent material (eg. sand, earth or vermiculite) or mop-up small spills (mop or sponge). Place in clean labelled plastic or plastic lined container for disposal. Wash area thoroughly with water accompanied by suitable neutralising agents such as soda ash or lime. Ensure surface is not slippery afterwards.
- DISPOSAL : Reuse reclaimed material if possible. Carefully add to water and greatly dilute, or neutralise with dilute alkali and flush to drain with copious amounts of water. Otherwise, place in plastic container prior to disposing through normal commercial refuse system, or at a waste landfill. Consult local council dumps, licensed waste management contractors or the manufacturer for proper disposal method in your area in the event of a major spill. Suitable for incineration by approved agent.

#### FIRE & EXPLOSION HAZARD :

EXTINGUISHING MEDIA : Non-flammable, Non-Combustible. Use water spray, foam, carbon dioxide, dry chemical powder, BCF.

#### FIRE FIGHTING PROCEDURES :

Fire fighters to wear self-contained breathing apparatus if in risk of exposure to corrosive mists or decomposition products.

UNUSUAL FIRE/EXPLOSION HAZARDS AND DECOMPOSITION PRODUCTS :

When subject to high heat may decompose to form water vapour, acid fume, carbon monoxide, carbon dioxide and other unidentified organic compounds.

INCOMPATIBILITY : Strong alkalis, oxidising agents, hypochlorites.

#### OTHER INFORMATION

Keep out of the reach of children. Surfactants employed are biodegradable. Adverse health effects would not be expected under recommended conditions of use so long as prescribed safety precautions are practised. Abbreviations : N/D - Not determined : N/A - Not applicable

Prepared by: Contact Point: Michael Whiteley -Michael Whiteley (03)551-6211

Technical Manager Business Hours

(03)579-0060

All other times.

# Appendix 7

# Model Checklist for Plant

The following checklist is designed for use (after adaptation) by the health and safety representative and the employer to assist in the identification of hazards arising from the use, installation or cleaning of plant and equipment. A separate checklist should be completed for each piece of plant or equipment being inspected.

## A. Traps

Does the plant have unguarded moving parts which could lead to trapping points?

- where the limbs nip point)?	s may be drawn into a trap (an in-running	🗖 Yes	🗖 No
If Yes, detail			
- where the limbs passing moven	s or body are simply trapped by a closing or nent?	🗖 Yes	🗖 No
<b>B. Impact</b> Are there parts of the plant w could cause injury if a perso	which by their speed of movement n gets in the way?	Tes	🗖 No
If Yes, detail			
C. Contact			
them because they are:	cause injury as a result of touching		
	cold?	🗖 Yes	🗖 No
	hot?	🗖 Yes	🗖 No
	sharp?	🗖 Yes	🗖 No
	abrasive?	🗖 Yes	🗖 No
	electrically live?	🗖 Yes	🗖 No
If Yes, detail			

D.	ļ	Entangleme	nt
Is there a risk that machinery parts, product or waste be thrown out of the plant?	e product will	🗖 Yes	🗖 No
If Yes, detail			
E. Existing controls		<b>-</b> . <i>i</i>	<b>—</b>
Are all existing guards locked in place?		Yes	🗖 No
If No, detail			
Would the risks identified in A to E above be eliminatified in A to E above be eliminatified in place?	ited		
	A	🗖 Yes	🗖 No
	В	🗖 Yes	🗖 No
	С	Yes	🗖 No
	D	Yes	🗖 No
	E	Yes	🗖 No
If No, detail			
Can operation of the plant cease if guards are open	ed or removed?	🗖 Yes	🗖 No
If No, detail			
If plant is electrically powered, is an emergency stop	button	 <b>T</b> Yee	
If No, detail		Tes	
F. Associated Risks			
much as is possible from operator's working area ar as required, for example, suspension of overhead ca 2 metres from floor level?	a) separated as and access to plan ables at least	t	🗖 No
If No, detail			
Are all electrical connections properly insulated and	earthed?	TYes	🗖 No
If No, detail			

Is there a risk that operation of the plant or use of the tool as required could lead to other types of injury?

	hearing loss	Yes	🗖 No
	manual handling injury	🗖 Yes	🗖 No
	occupational overuse syndrome	🗖 Yes	🗖 No
	chemical injury, for example, poisoning or acid burn	Yes	🗖 No
	other	🗖 Yes	🗖 No
If Yes, detail			

.....

and implement additional risk identification procedures.

All risks identified should be assessed by the employer in consultation with the health and safety representative(s) and affected employee(s). Control measures should also be determined, in consultation, with the assistance of the maintenance team.

# Appendix 8

# Model Maintenance Inspection Checklist

This checklist is a model only, and was developed for use in a small domestic abattoir. It may be modified or used as guidance in developing a similar checklist to meet the needs of a particular workplace.

# Monthly Safety Check—Beef Kill Floor

The following tests have been completed and the unit has been inspected.

		Results
A.	Crush	
1.	Beef crush cables and pins on door	
2.	Chain on hoist and anchor points—for door	
В.	Rollers and Chains	
1.	For cracks and bushes	
C.	Check Hoist from Landing to Rail	
1.	Wear in chain	
2.	Couplings for wear and cracks	
3.	Hooks for wear	
D.	Check all Stoppers on Gravity Rail to Cradle	
Ε.	Check both Hoists to Cradle from Rail	
1.	Chains for wear	
2.	Couplings for wear and cracks	
3.	Hooks for wear	
F.	Check both Lifting Hoists from Cradle to Rail	
1.	Chains for wear	
2.	Couplings for wear and cracks	
3.	Scissors on rail for wear	
G.	Beef Saw	
1.	Spring balance, hook and safety chain for wear, trolley for wear	
2.	Cables for fraying, wear in guides and drum	
3.	All coupling points for wear on cable	

Н.	Rail and Points	
1.	Rail for dips and wear, holding brackets for cracks	
2.	Points for wear and alignment	
I.	Beef Load Out Lowerator	
1.	Check rail for wear and alignment	
2.	Check bearings	
3.	Check air ram and fittings for wear and leaks	
4.	Check operation of control valve	
J.	Visual Check of Overhead Beams Holding Motors and Rails	
Any	other comments	
Sign	ed by: <i>Maintenance</i>	Date
Sign	ed by: <i>Management</i>	Date
Sign	ed by: <i>Health and</i>	

# Appendix 9

# Model Confined Space Entry Permit

This permit is to be issued with the ABC Meatworks Code of Practice for Work in Confined Spaces.

# A. Preliminary Information

		Permit No	
Site	location		
Con	fined space		
Loca	ation of work to be performed		
Dese	cription of work		
Equi	ipment, chemicals, gases, etc to be used are		
Dron			
Cont	fined space entry supervisor ( <i>Print name</i> )	e	
COII	(Signature)		
Corr	netent people involved in this entry		
Con	(Print names)	(Signatures)	
A	(	(e.g. a.a. ee)	
В			
С			
D			
	B Isolation		
Thes	se items have been isolated and/or made safe:		
1.	Pipelines (water, steam, gas, etc)	🗖 Yes 🗖 No	🗖 N/A
2	Mechanical/electrical drives		
2. 3	Sludges deposite waste		
J.	Hermful materials		
4.			
5.	Electrical services		LJ N/A
6.	Danger tags and lockouts have been applied to		
	anotant paraon (Print name)		
Corr	(Signatura)		
	(Signalure)		•••••

# C. Other Precautions

1.	Are warning signs/barriers in position?	🗖 Yes	🗖 No	D N/A
2.	Has smoking been precluded from adjacent areas?	🗖 Yes	🗖 No	□ N/A
3.	Is space adequately ventilated?	🗖 Yes	🗖 No	□ N/A
Note be c	e: If the answer to 3 above is No, forced area ventilation, when arried out.	practicable	e, should	
4.	Is the ducting intake or the forced air ventilation fan, if required, located in an area free of dust, vapours?	🗖 Yes	🗖 No	🗖 N/A
5.	Have other hazards, such as dust and overhead factors, etc, been taken into consideration?	🗖 Yes	🗖 No	🗖 N/A
Spe	cify any hazards associated with 5 above			
Com	npetent person <i>(Print name)</i>			
	(Signature)			
	D. Atmospheric Test Requirements			
1.	The instrument should be calibrated at intervals specified by t	he manufa	acturer/su	pplier.
2.	Pre-entry test (record level of the test)			
(i)	Oxygen % (O) (recommended rate	nge 19.5%	5 <b>-</b> 22%, io	deal 21%)
<i></i> 、				
(11)	Hydrogen sulphide (H S)		(less thar	n 25 ppm)
(II) (iii)	Hydrogen sulphide (H S) Explosive limit % LEL (CH )		(less thar (maxi	n 25 ppm) mum 5%)
(II) (iii) The	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the	test <i>(state</i>	(less thar (maxi e 1st, 2nd	n 25 ppm) mum 5%) ', 3rd, etc)
(II) (iii) The The	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions:	test <i>(state</i>	(less thar (maxi e 1st, 2nd	n 25 ppm) mum 5%) , 3rd, etc)
(II) (III) The The	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device	test <i>(state</i>	(less thar (maxi e 1st, 2nd No	n 25 ppm) mum 5%) , 3rd, etc) <b>D</b> N/A
(II) (iii) The The	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device	test <i>(state</i>	(less thar (maxi e 1st, 2nd No No	n 25 ppm) mum 5%) , 3rd, etc) N/A
(II) (iii) The: The •	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device	test <i>(state</i> Yes Yes Yes Yes	(less thar (maxi a 1st, 2nd No No No	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A
(II) (III) The The • • • Note	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device e: The continuous atmospheric monitoring device should be wo con inside the confined space.	test <i>(state</i> Yes Yes Yes Yes orn at all tir	(less thar (maxi e 1st, 2nd No No No nes by th	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A N/A
(II) (III) The: The • • Note pers Com	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device e: The continuous atmospheric monitoring device should be wo con inside the confined space.	test <i>(state</i> Ves Yes Yes Yes	(less thar (maxi e 1st, 2nd No No No nes by th	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A e
(II) (III) The: The Note pers Corr	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device e: The continuous atmospheric monitoring device should be wo con inside the confined space. hpetent person ( <i>Print name</i> )	test <i>(state</i> Ves Yes Yes rn at all tir	(less thar (maxi e 1st, 2nd No No No nes by th	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A e
(III) (IIII) The: The • • Note pers Corr	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device e: The continuous atmospheric monitoring device should be wo son inside the confined space. hpetent person ( <i>Print name</i> ) ( <i>Signature</i> )	test <i>(state</i> Yes Yes Yes orn at all tir	(less thar (maxi e 1st, 2nd No No No nes by th	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A e
(III) (IIII) The: The • • Note pers Corr Date 3.	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device e: The continuous atmospheric monitoring device should be wo son inside the confined space. hpetent person ( <i>Print name</i> ) ( <i>Signature</i> ) Re-entry test (record level of the test)	test <i>(state</i> Yes Yes Yes orn at all tir	(less thar (maxi a 1st, 2nd No No No nes by th	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A e
(III) (III) The: The • • Note pers Corr Date 3. (i)	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device e: The continuous atmospheric monitoring device should be wo son inside the confined space. hpetent person ( <i>Print name</i> )	test <i>(state</i> Yes Yes Yes orn at all tir	(less thar (maxi e 1st, 2nd No No No mes by th	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A e
(III) (III) The: The • • Note pers Corr Date 3. (i) (II)	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device e: The continuous atmospheric monitoring device should be we con inside the confined space. hpetent person ( <i>Print name</i> )	test <i>(state</i> Yes Yes Yes orn at all tir	(less thar (maxi a 1st, 2nd No No No nes by th 5 - 22%, ic (less thar	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A e Meal 21%) n 25 ppm)
(III) (III) The: The • • • • • • • • • • • • • • • • • • •	Hydrogen sulphide (H S) Explosive limit % LEL (CH ) se levels were obtained after the space is safe under the following conditions: with supplied air respiratory device with an air purifying respiratory protective device without a respiratory protective device e: The continuous atmospheric monitoring device should be we con inside the confined space. hpetent person ( <i>Print name</i> ) ( <i>Signature</i> ) Re-entry test (record level of the test) Oxygen % (O ) (recommended rai Hydrogen sulphide (H S)	test <i>(state</i> Yes Yes Yes orn at all tir	(less thar (maxi a 1st, 2nd No No No nes by th 5 - 22%, ic (less thar (maxi	n 25 ppm) mum 5%) , 3rd, etc) N/A N/A N/A e Meal 21%) n 25 ppm) mum 5%)

The space is safe under the following conditions:

•	with supplied air respiratory device	🗖 Yes	🗖 No	🗖 N/A
•	with an air purifying respiratory protective device	🗖 Yes	🗖 No	🗖 N/A
•	without a respiratory protective device	🗖 Yes	🗖 No	🗖 N/A

Note: The continuous atmospheric monitoring device should be worn at all times by the person inside the confined space.

Competent person (Print name)	
(Signature).	

Date	Time

## E. Personal Protective Equipment

The following personal protective equipment is required to be worn:

1.	Supplied air respirator	Yes	🗖 No
2.	Air purifying respiratory protective device	☐ Yes	🗖 No
3.	Safety belt, harness, rescue line	☐ Yes	🗖 No
4.	Eye protection	☐ Yes	🗖 No
5.	Hand protection	🗖 Yes	🗖 No
6.	Foot protection	🗖 Yes	🗖 No
7.	Protective clothing	☐ Yes	🗖 No
8.	Hearing protection	☐ Yes	🗖 No
9.	Safety helmet	☐ Yes	🗖 No
10.	Gas monitor	☐ Yes	🗖 No
11.	Heat protection	☐ Yes	🗖 No
12.	Intrinsically safe emergency lighting	☐ Yes	🗖 No
13.	Special communications equipment	☐ Yes	🗖 No
14.	Other	☐ Yes	🗖 No
Com	npetent person (Print name)		
	(Signature)		

## F. Personnel

Note: The minimum personnel required with an individual entering the space is one person who is to remain outside the space. This person must hold an acceptable first aid certificate.

I/We understand the procedures required for entry and work in the confined space and the protective measures and equipment to be used.

(Print names)	(Signatures)
A	
В	
C	
D	

The name of the holder of an acceptable first aid certificate who is on standby is

(Print name)

The name(s) of the person(s) entering the confined space is/are:

(Print names)	(Signatures)
A	
В	
C	
D	
Competent person (Print name)	
(Signature)	

## G. Use of Chemical Agents

No chemical agents other than those listed below may be taken into the space

## H. Hot Work

Where hot work is undertaken, a Hot Work Permit is to be completed by the Works Engineer or designate.

Hot work will be undertaken	Yes	🗖 No
Hot Work Permit No		
Special instructions		

## I. Authorisation

The confined space described in this document is, in our opinion, in a safe condition for the work specified to be undertaken, provided that the precautions are fully observed.

Decignated management	ronrocontativo	(Print nama	)
Designated management	representative	1 mill name	/

	(Signature)	
Data	Timo	
Confined space entry supervisor	(Print name)	
	(Signature)	
Date	Time	

## J. Signing Out

All people in Part F who entered the confined space have withdrawn

(Print names)

A	Time out	
В	Time out	
C	Time out	
D	Time out	
Further entry should not be permitted unless a new entry permit is signed.		
Competent person (Print name)		

(Signature) .....

## K. Acceptance of Completed Job

I accept that the work as defined in Part A of this permit has been completed, isolation has been removed and the plant can be returned to service.

Site Engineer or designate (Print name).....

(Signature) .....

Note: All completed Confined Space Entry Permits should be retained on the file indefinitely by the designated management representative.