

GUIDELINES

FOR THE PROVISION OF FACILITIES AND GENERAL SAFETY AND HEALTH IN THE

Healthcare Industry

TO MEET THE REQUIREMENTS OF THE HEALTH AND SAFETY IN EMPLOYMENT ACT 1992 AND REGULATIONS 1995





*Hon. Max Bradford
Minister of Labour*

Foreword

The Health and Safety in Employment Act 1992 reformed the law and provided, for the first time, comprehensive coverage and a consistency of approach to the management of safety and health in all New Zealand workplaces.

Before this Act, the healthcare industry was largely exempt from health and safety legislation. The culture of the industry and the traditional orientation towards patient care had focused efforts towards making sure that patients are cared for, sometimes without applying the same standards of care to its staff.

Over the last few years, there has been an increased awareness of the hazards healthcare workers are exposed to. This heightened awareness provides a positive climate for healthcare facilities to develop a comprehensive occupational health and safety programme that will promote the recognition, evaluation, and control of the hazards to healthcare workers.

The law places a general duty on all employers to provide a safe and healthy place of work. The healthcare industry has occupational hazards similar to those of other complex employment settings or industries, as well as hazards unique to the healthcare environment. Injuries frequently reported by healthcare workers include musculoskeletal injuries, lacerations, contusions, and needlestick injuries, along with exposure to infectious diseases and various chemicals.

A comprehensive occupational health and safety programme will help to identify, evaluate, and control the risks related to these hazards, and all departments and all jobs should be covered by such a programme. These guidelines outline the process, and in doing so give information on means of compliance with the Act and the regulations.

My intention in publishing these guidelines is that they will be another step towards the ultimate goal of the legislation — which is to constructively change people's attitudes and responses to workplace health and safety.

A handwritten signature in blue ink, consisting of a large, stylized 'M' and 'B' followed by a smaller signature.

Hon. Max Bradford
Minister of Labour

Contents

About these guidelines	4
Content of the guidelines	5
Application of reference material	5
Definitions	6
“All practicable steps”	7

Part 1: Managing occupational safety and health

1.1 Management commitment	10
1.2 Occupational health and safety policy	10
1.3 Consultation	11
1.4 Planning	11
1.5 Audit and review	12
1.6 System for hazard identification, assessment, and control	12
1.7 Monitoring	14
1.8 Provision of information	15
1.9 Emergency procedures	16
1.10 Education and training	17
1.11 Health promotion	17
1.12 Controls over purchasing	18
1.13 Management of contract work	18
1.14 Accidents and serious harm (records and notification)	20
1.15 Injury management and rehabilitation	21

Part 2: Specific hazards

2.1 Biological / infectious hazards	24
2.2 Chemical hazards	26

2.3 Safety in the laboratory	31
2.4 Hazardous waste management	31
2.5 Environmental / mechanical hazards	32
2.6 Physical hazards	40
2.7 Violence at work	46
2.8 Psychological / psychosocial hazards	49

Part 3: Facilities and general safety

3.1 Accommodation for clothing	54
3.2 Air conditioning systems	54
3.3 Atmospheric conditions	55
3.4 Common facilities and amenities	56
3.5 Drinking water	57
3.6 Seating	57
3.7 Facilities for rest	58
3.8 First aid	58
3.9 Lighting	59
3.10 Maintenance of facilities	61
3.11 Meals in places of work	61
3.12 General place of work ventilation	62
3.13 Removal of steam, fumes, dust and other contaminants	63
3.14 Toilets	65
3.15 Washing facilities	66
3.16 Drainage of floors	67
3.17 Fire precautions	68
3.18 Safe means of access and egress	69
3.19 Signs, colour coding and aisle marking	70
3.20 Restriction on the employment of young persons	71
3.21 Protective clothing and equipment	72
3.22 Duties of designers, manufacturers, suppliers and sellers of plant	73
3.23 Duties of designers, manufacturers, suppliers and sellers of protective clothing and equipment	74

About these guidelines

These guidelines are to assist healthcare providers to manage health and safety in line with duties and responsibilities under the Health and Safety in Employment Act 1992, and to give guidance on developing the appropriate policies and procedures. They provide information and raise awareness of hazards commonly found in the healthcare industry.

While reference is made to healthcare facilities, the guidelines may be used where appropriate by those involved in healthcare in the wider community and other settings.

However, it is recognised that there is an increasing trend towards the care of patients in the home setting, and the industry, in conjunction with OSH, is developing separate guidelines.

Because of the diversity of activities found in the healthcare industry, these guidelines do not address all hazards in all areas. However, all departments of any healthcare facility have a duty under the Health and Safety in Employment Act 1992 to provide a safe and healthy working environment. To ensure that this duty is fulfilled, all departments and all jobs should be covered by the health and safety programme outlined in part 1 of the guidelines.

The guidelines are part of a series aimed at different industries. The other guidelines currently available are:

- Commercial and industrial premises
- Agricultural safety, health and accommodation
- Construction
- Forestry
- Machinery
- Woodworking machinery

Many of the general requirements set out in the guidelines for commercial and industrial premises are applicable to the healthcare industry, and they therefore form part 3 of these guidelines. Other guidelines may be applicable to specific situations — such as the use of machinery or plant.

In addition, separate regulations cover mining, petroleum, hazardous equipment (boilers, pressure vessels, cranes, and passenger ropeways) and tractor safety frames.

These guidelines are a guide to the regulations and to good practice in particular situations or hazards. Guidance on the Act is available from other OSH publications, such as *A Guide to the Health and Safety in Employment Act 1992*, or *A Guide to Managing Health and Safety to Meet the Requirements of the Health and Safety in Employment Act 1992*.

LEGISLATIVE PROVISIONS THAT RELATE SPECIFICALLY TO THE SUBJECT OF THE GUIDELINE.

The **most relevant** sections of the Act and regulations are listed separately.

Often the section of the Act referred to contains general provisions, but has been quoted because it is most likely that any prosecution would be taken under it.

Regulations are reproduced as appropriate, and their observance is mandatory where they apply.

THE GUIDELINES THEMSELVES.

These guidelines contain **recommendations** for employers and others on means of compliance with the Health and Safety in Employment Act 1992 and regulations.

They describe good practices for specific work situations, and as such support the Act and regulations. Where appropriate they refer the reader on to Codes of Practice approved by the Minister of Labour under the Act, Standards, regulations made under other Acts of Parliament, and other recognised statements of good practice relevant to the particular area.

They are, however, **guidelines**, and — while every effort has been made towards completeness and accuracy at the time of publication — they should at any time be read in conjunction with the legislation and other documents referred to.

REFERENCES TO FURTHER INFORMATION IN SUPPORT OF THE GUIDELINES.

These include New Zealand and other Standards, Occupational Safety and Health Service publications, other publications, and other sources of information which **support the guidelines**.

LEGISLATION - Emergency procedures

13

General Duties of Employers
13. Employees to ensure safety of employees—
Every employer shall take all practicable steps to ensure the safety of employees while at work, and in particular shall take all practicable steps to—
(a) Develop procedures for dealing with emergencies that may arise while employees are at work.
Duties of Employers in Relation to Training and Supervision
...
14. Employers to involve employees in development of health and safety procedures—
Every employer shall ensure that all employees have the opportunity to be fully involved in the development of procedures developed for the purpose of—
...

15. Recording of accidents or incidents
16. Recording of accidents or incidents or removal charges.

1.9 Emergency procedures

Planning and preparing for emergencies is an essential part of hazard prevention and control. All employees should know exactly what they must do in each type of emergency situation.

It is important, as an element of hazard prevention and control, that healthcare facilities plan and prepare for emergencies, including planning for emergency response operations to handle releases of hazardous substances.

Police, fire brigade, emergency services and other authorities should be incorporated into the emergency response plan.

It is the responsibility of management to ensure that a programme is instituted and that it is frequently reviewed and updated. Staff must be given the opportunity to be fully involved in the development of procedures.

The programme should include, as a minimum:

- A corporate policy statement which emphasises the importance of emergency response planning and affirms management support for the emergency response initiative;
- An outline of chains of command or responsibility during an emergency, in order to ensure a rapid and effective response;
- Clearly defined roles and responsibilities of all facility personnel during an emergency;
- Clearly defined communications network and "alerting" procedures to be used both during normal business and off-hours;
- Detailed emergency response procedures developed and included for each specific type of emergency;
- Emergency evacuation procedures and emergency evacuation routes prepared and posted;
- Procedures to be followed by employees who remain to perform (or shut down) critical plant operations before the plant is evacuated;
- Clearly defined reporting requirements, indicating who is responsible for reporting an incident both within the organisation and to outside authorities;
- Training requirements for all personnel within the facility; and
- Provision for regular review and updating of the emergency response plan.

Section 1.14 provides further information on the recording and notification of accidents and serious harm.

RELATED INFORMATION

Standards

AS 4085:1992 Emergency response for healthcare facilities
AS 3745:1988 Emergency control organisation and procedures for buildings

16

GUIDELINES FOR THE PROVISION OF FACILITIES, GENERAL SAFETY AND HEALTH IN THE HEALTHCARE INDUSTRY — MAY 1997

Content of the guidelines

The guidelines contain three categories of information on safety and health:

- Relevant sections of the Health and Safety in Employment Act 1992 and the Health and Safety in Employment Regulations 1995.
- The guidelines themselves — based in part on standards contained in former legislation or on generally accepted good practice; and
- References to further information in support of the guidelines.

Application of reference material

Approved codes of practice

If an approved code of practice has been issued for any type of work (under section 20 of the Act) then such work should be carried out in accordance with that code of practice.

Standards

These guidelines frequently refer to New Zealand and other standards that provide technical guidance and specifications for employers and others.

In addition, standards may be specified in particular regulations as having application to

any place or type of work, equipment, plant, activity, or any other thing, covered by the regulations.

Building Act 1991

Any building which is constructed or altered is required to comply with the requirements of the Building Act 1991 to the extent that those requirements apply to the construction of the building.

Definitions

All words have their common or dictionary meaning unless otherwise defined in any associated document, such as legislation or codes of practice. For clarity, the following definitions are provided here:

Acute toxicity is where a harmful or potentially lethal effect occurs immediately or shortly after a single exposure.

Administrative controls reduce or eliminate an employee's exposure by changing the duration, frequency, and/or severity of exposure. Examples of administrative controls include rotating employees to jobs free of the specific hazard, adjusting work schedules, and providing adequate staffing when the work output is increased.

Blood refers to human blood, human blood components, and products made from human blood.

Bloodborne pathogen means harmful micro-organisms that are present in human blood and which can cause disease in humans.

Chronic toxicity refers to the harmful effects of a chemical which occur after repeated or prolonged exposure. Chronic effects may also occur some time after exposure has ceased.

Contaminated means the presence or reasonably anticipated presence of blood or other potentially infectious materials on an item or surface.

Cytotoxic means being destructive to living cells.

Engineering controls use technological means to isolate or remove hazards from the workplace. Examples of engineering controls include dilution or local exhaust ventilation, or the use of a scavenging system in an operating room to prevent exposure to waste anaesthetic gases.

Mutagen is a chemical or physical agent that has the property of increasing the rate of mutation among cells. Chemicals, ionising radiation, and viruses may act as mutagens.

Mutation is a change occurring in the genetic material (DNA) in the chromosomes of a cell. It is caused by a fault in the replication of a cell's genetic material when it divides to form two daughter cells.

Oncogenic means causing or encouraging the growth of tumours.

Parenteral is the word applied to the administration of drugs by any other route other than by the mouth or by the bowel.

Prophylaxis means treatment or action adopted with a view to warding off disease.

Sterilisation refers to a physical or chemical procedure to destroy all microbial life, including highly resistant endospores.

Teratogenic means able to produce abnormalities in a developing embryo or foetus, that is, causing birth defects.

Work practice controls refers to controls that reduce the likelihood of exposure to hazards by altering the manner in which a task is performed (e.g, prohibiting the two-handed technique for the recapping of needles after use).

“All practicable steps”

Many of the duties in the Health and Safety in Employment Act are qualified by the words “take all practicable steps”.

This phrase applies to the general duties that must be carried out by employers, employees, self-employed people, people in control of workplaces, and “principals”, who are people who engage contractors to carry out work for them.

These people are required to take all steps that are reasonably practicable. A step is practicable if it is possible or capable of being done. Whether a step is also reasonable takes into account:

- The nature and severity of any injury or harm that may occur;
- The degree of risk or probability of injury or harm occurring;
- How much is known about the hazard and the ways of eliminating, isolating or minimising the hazard; and
- The availability and cost of safeguards.

The degree of risk and severity of potential injury or harm must be balanced against the cost and feasibility of the safeguard. The cost of providing safeguards has to be measured against the consequences of failing to do so. It is not simply a measure of whether the person can afford to provide the necessary safeguards. Where there is a risk of serious, or frequent injury or harm, a greater cost in the provision of safeguards may be reasonable.

Any judgement of whether a safeguard was “reasonably practicable” is to be made taking common practice and knowledge throughout the industry into account.

A claim by an individual person that he or she did not know what to do about a hazard

would not be successful if the hazard was widely known to others in the industry and safeguards were in place.

The concept of “reasonableness” is based on the hypothetical “reasonable person” and the way that he or she might behave in a particular situation. It is based on the values of society of the day and, in the end, will involve a value judgement.

The overall test is what would a reasonable and prudent person do in all the circumstances. There are no firm guidelines. The question of what is reasonably practicable is always a matter of fact and degree in each situation.

An example of a practicable step

A recent court case illustrates what the courts expect by “all practicable steps”. It saw a crown health enterprise plead guilty to a charge under section 6 of the Act after two nurses became affected by exposure to glutaraldehyde, a chemical used widely in the healthcare industry to disinfect medical instruments.

The nurses, who suffered severe headaches and respiratory irritation, were exposed while performing their duties in the sluice rooms attached to the hospital’s four operating theatres. Used theatre equipment was placed in large open containers filled with 2% glutaraldehyde solution. Nurses and other staff working in the sluice rooms were exposed to glutaraldehyde fumes. There was no ventilation system.

The problem occurred in an old part of the hospital due for replacement. Closure of the operating theatres even temporarily was not practicable, leaving the hospital two options: installing ventilation (estimated to cost up to \$250,000) or replacing glutaraldehyde with an alternative chemical. The latter course was eventually adopted.

Hospital authorities had recognised the problem posed by glutaraldehyde as far as providing respirators, gloves and aprons for the nurses to wear. However, the respirator was regarded as uncomfortable to wear for any length of time.

In summing up what was expected of the hospital, the judge recognised the restraints of health budget requirements. However, the judge agreed that closing down the area where the fumes were affecting workers until the fumes were taken away, or providing some other disinfectant system were reasonably practicable steps available to the hospital that should have been taken.

LEGISLATION — Occupational health and safety policy

ACT

General Duties of Employers

6. Employers to ensure safety of employees—

Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

- (a) Provide and maintain for employees a safe working environment; and
- (b) Provide and maintain for employees while they are at work facilities for their safety and health; and
- (c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use; and
- (d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—
 - (i) In their place of work; or
 - (ii) Near their place of work and under the employer's control; and
- (e) Develop procedures for dealing with emergencies that may arise while employees are at work.

...

Duties of Employers in Relation to Training and Supervision

13. Training and supervision—Every employer shall take all practicable steps to ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work—

- (a) Either—
 - (i) Has; or
 - (ii) Is so supervised, by a person who has such knowledge and experience of similar places, and work, plant, or substances of that kind, as to ensure that the employee's doing the work, using the plant, or dealing with the substance, is not likely to cause harm to the employee or other people; and
- (b) Is adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that the employee is or may be required to use or handle.

14. Employers to involve employees in development of health and safety procedures—

Every employer shall ensure that all employees have the opportunity to be fully involved in the development of procedures developed for the purpose of—

- (a) Complying with sections 7 to 10 of this Act; or
- (b) Dealing with or reacting to emergencies or imminent dangers.

The most effective approach to managing health and safety in the healthcare industry is to integrate health and safety with a facility's management objectives. A systematic approach, where health and safety objectives are managed in the same way as financial, service, or quality objectives will help to achieve a high standard of health and safety performance.

1.1 Management commitment

The leadership and commitment of management provide an essential foundation for an effective health and safety programme. The successful co-ordination of the activities of employees towards a common objective depends on the degree of management commitment and involvement. This should be reflected in the management's knowledge of the particular health and safety needs of the organisation and the conviction that high standards are attainable. Management are responsible for ensuring that the facility has appropriate policies, programmes, and adequate resources (both personnel and financial resources) in place to provide a healthy and safe workplace.

1.2 Occupational health and safety policy

As the basis of its health and safety management system each healthcare facility should develop a clear, concise, statement of its health and safety policy which explains how management seeks to achieve their commitment.

Essential points to consider:

- It should be a clearly written policy which sets the direction for the organisation by communicating management's commitment to health and safety;
- It outlines the responsibility and accountability of managers and supervisors at all levels of management. It should specify who is responsible for doing what, and the specific arrangements which are in place for identifying hazards, assessing risks and then controlling them. Health and safety responsibilities should be included in all job descriptions and be part of performance assessment. A health and safety co-ordinator or an occupational health unit may act as a resource for managers working towards the achievement of specific health and safety goals;
- It should be developed through a process of consultation between management and employees or their health and safety representatives, and be authorised by management at the highest level;
- It should be effectively communicated to all employees;
- It should be periodically reviewed to ensure that the policy remains up to date; and

- The policy should cover staff, patients, visitors, and others in contact with the services provided.

1.3 Consultation

Consultation is an integral part of good management. It is the means by which employers and employees work together to improve health and safety in the workplace. When planning changes to the workplace, consultation should take place as early as possible, and be an ongoing process.

Consultation can lead to improved health and safety practices as employees are most likely to know the risks associated with their work, and may be able to suggest effective solutions. Employee involvement in problem identification and related workplace changes also help ensure that employees are committed to the changes.

Consultation may include, but is not limited to:

- Developing policies, procedures and action plans for the identification, assessment, and control of hazards in the workplace;
- Reviewing accident statistics;
- Participation in problem solving;
- Involvement of senior management;
- Consultation with employees or their representatives on major occupational safety and health issues; and
- Ensuring that employees have access to all relevant information and occupational health and safety training courses.

FURTHER INFORMATION

OSH publication

Code of Practice for Health and Safety Representatives and Health and Safety Committees

1.4 Planning

The development of a plan to manage health and safety is essential to achieve a consistent approach throughout the healthcare facility.

A plan should identify clear objectives and standards that will have to be achieved, and should also incorporate an action plan which allocates tasks and provides a time frame for completion.

Planning should also include provision for appropriate training for people at all levels so that they can effectively meet their responsibilities.

LEGISLATION — Consultation

ACT

- 14. Employers to involve employees in development of health and safety procedures—** Every employer shall ensure that all employees have the opportunity to be fully involved in the development of procedures developed for the purpose of—
- (a) Complying with sections 7 to 10 of this Act; or
 - (b) Dealing with or reacting to emergencies or imminent dangers.

1.5 Audit and review

Health and safety audit, along with performance review, is the final step in the health and safety management control cycle which effective organisations use to maintain and develop their ability to manage risks to the fullest possible extent. As a process, it aims to ensure that control measures are working and kept up to date.

Auditing and performance review allow policy implementation to be assessed against four key indicators:

- Assessment of compliance with health and safety performance standards;
- Assessment of achievement of specific objectives;
- Identification of areas where standards are absent or inadequate; and
- Analysis of incident, accident, and ill health data.

The programme review and evaluation should measure outcomes, such as the attainment of goals and objectives, trend analysis, and programme effectiveness. These outcomes can be evaluated by using employee interviews and testing, and by observing work practices to determine whether employees understand the health and safety policies, procedures, and training. Programme effectiveness may also be evaluated by observing both overall and departmental trends in occupational injuries and illnesses.

The programme review and evaluation should be used to determine any programme elements that need to be altered to improve the overall effectiveness.

LEGISLATION - System for hazard identification, assessment and control

ACT

General Duties of Employers

6. Employers to ensure safety of employees— Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

- (a) Provide and maintain for employees a safe working environment; and
- (b) Provide and maintain for employees while they are at work facilities for their safety and health; and
- (c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use; and
- (d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—
 - (i) In their place of work; or
 - (ii) Near their place of work and under the employer's control; and
- (e) Develop procedures for dealing with emergencies that may arise while employees are at work.

Duties of Employers in Relation to Hazard

1.6 System for hazard identification, assessment, and control

Occupational health and safety hazards and risks cannot be identified, assessed or controlled effectively unless the facility maintains one system of hazard identification, assessment and control. This system should remain uniform throughout the healthcare facility so as to ensure that there is no confusion in the management of occupational hazards and risks. The occupational health and safety plan should outline the processes that staff and managers will utilise to identify, assess, and control hazards in their working environment.

Identification of hazards

The comprehensive identification of hazards is a basic building block in the prevention of loss, whether it occurs in the form of harm to people, damage to equipment or process disruption.

From this initial identification of hazards:

- Significant hazards can be identified;
- Appropriate controls for hazards can be established;
- Objectives can be set to cover training and information needs;
- Management, supervision and employee responsibilities can be clearly defined; and
- Comprehensive work standards and procedures (including emergency procedures) can be developed and implemented.

Methods of identifying hazards may include :

- Hazard identification by area — dividing the worksite into identifiable areas;
- Hazard identification by task — identifying the tasks people carry out and the hazards involved at each step;
- Hazard identification by process — identifying the hazards at each stage of a process;
- Hazard identification by occupation — identifying the hazards associated with specific occupational groups.

There is no single ideal system of hazard identification. The most appropriate systems vary to some extent with the type of industry and processes involved, and a combination of methods may need to be used.

Existing resources should be used, such as codes of practice/guidelines, industry information booklets, manufacturers' specifications/ information, reports from inspectors or consultants, and environmental health reports. Records of accidents/illnesses and near misses, and consultation with employees are also important sources of information.

Assessment of hazards

After all the existing hazards faced by workers in an organisation are identified, decisions have to be made as to:

- Whether they are significant hazards and thus need a specific hierarchy of control measures to be applied; or
- Whether any control methods are to be introduced to reduce or eliminate the likelihood of injury from those hazards which are not identified as significant hazards.

Hazards that are assessed as “significant” present such a degree of risk that the Act requires a formal approach in dealing with them.

Control of hazards

Where the hazard is significant, the Health and Safety in Employment Act requires the employer to implement appropriate control measures.

Management

7. Identification of hazards— (1) Every employer shall ensure that there are in place effective methods for—

- (a) Systematically identifying existing hazards to employees at work; and
 - (b) Systematically identifying (if possible before, and otherwise as, they arise) new hazards to employees at work; and
 - (c) Regularly assessing each hazard identified, and determining whether or not it is a significant hazard.
- (2) Where there occurs any accident or harm in respect of which an employer is required by section 25 (1) of this Act to record particulars, the employer shall take all practicable steps to ensure that the occurrence is so investigated as to determine whether it was caused by or arose from a significant hazard.

8. Significant hazards to employees to be eliminated if practicable—Where there is a significant hazard to employees at work, the employer shall take all practicable steps to eliminate it.

9. Significant hazards to employees to be isolated where elimination impracticable—Where —

- (a) There is a significant hazard to employees at work; and
 - (b) Either—
 - (i) There are no practicable steps that may be taken to eliminate it; or
 - (ii) All practicable steps to eliminate it have been taken, but it has not been eliminated,—
- the employer shall take all practicable steps to isolate it from the employees.

10. Significant hazards to employees to be minimised, and employees to be protected, where elimination and isolation impracticable — (1) Where—

- (a) There is a significant hazard to employees at work; and
 - (b) Either—
 - (i) There are no practicable steps that may be taken to eliminate it; or
 - (ii) All practicable steps to eliminate it have been taken, but it has not been eliminated; and
 - (c) Either—
 - (i) There are no practicable steps that may be taken to isolate it from the employees; or
 - (ii) All practicable steps to isolate it from the employees have been taken, but it has not been isolated,— the employer shall take the steps set out in subsection (2) of this section.
- (2) The steps are—
- (a) To take all practicable steps to minimise the likelihood that the hazard will be a cause or source of harm to the employees; and
 - (b) To ensure that there is provided for, accessible to, and used by the employees suitable clothing and equipment to protect them from any harm that may be caused by or may arise out of the hazard; and

- (c) To monitor the employees' exposure to the hazard; and
- d) To take all practicable steps to obtain the employees' consent to the monitoring of their health in relation to the hazard; and
- e) With their informed consent, to monitor the employees' health in relation to exposure to the hazard.

Duties of Employers in Relation to Information

11. Employees to be given results of monitoring—

- (1) This section applies to the results of any monitoring of any employee or place of work if it was undertaken in compliance with this Act; and—
 - (a) If the monitoring was undertaken by or on behalf of an employer; or
 - (b) If—
 - (i) The monitoring was undertaken by or on behalf of a department (within the meaning of the State Sector Act 1988); and
 - (ii) The results have been given to an employer.
- (2) Subject to subsection (3) of this section, every employer shall ensure that—
 - (a) Every employee is given all results to which this section applies of monitoring of the employee (whether as an individual or as one of a number of employees) in relation to health or safety; and
 - (b) All employees who ask for them are given all results to which this section applies of general monitoring of—
 - (i) Conditions in the employee's place of work; or
 - (ii) The health or safety of employees there.
- (3) Every employer shall ensure that—
 - (a) There are omitted from all results to which this section Applies given to any individual employee all information that identifies, or discloses anything about, any other individual employee; and
 - (b) There are omitted from all results to which this section applies given to any group of employees all information that identifies, or discloses anything about, any employee.

LEGISLATION — Monitoring

ACT

Section 10 (2) (c)-(e) applies. It is reproduced at 1.6, above.

Hazard control measures follow the following hierarchy, with the emphasis on elimination, if possible, of the hazard at its source:

- 1) Take all practicable steps to eliminate the hazard (e.g. substitution or process modification);
- 2) If elimination is not practicable or is incomplete, take all practicable steps to isolate the hazard (e.g. engineering controls, such as noise enclosure); and
- 3) If it is impracticable to eliminate or isolate the hazard completely, minimise the likelihood that the hazard will harm employees or others. This includes:
 - Ensuring that effective control measures such as exhaust ventilation, or personal protective clothing and equipment, are provided, accessible, and properly used and maintained; and
 - Monitoring employees' exposure to the hazard.

FURTHER INFORMATION

OSH publications

3 Steps to Make Your Business Safer and Healthier - An aid to implementing the requirements of the Health and Safety in Employment Act 1992

Health and Safety Management Systems Assessment

1.7 Monitoring

Monitoring is defined as being any action taken to determine the current state of a workplace, or worker, in relation to a significant hazard.

This can include:

- Environmental monitoring — assessing the amount of the identified hazard (physical, chemical, or biological) in the workplace environment; or
- Monitoring the exposure of employees to either physical, chemical, or biological hazards in the workplace.

Informed consent is required from each employee before personal monitoring of their health is undertaken. As with any medical record, unless an employee gives specific permission for results to be made available to the employer, the results of biological monitoring carried out on an employee remain confidential between the employee and the person who carried out the monitoring. The only biological monitoring results to which an employer would normally have access would be group results with personal identifiers removed.

1.8 Provision of information

Employers must provide information for employees to ensure that current legislative requirements are known, and that relevant, up to date information is given regarding:

- All identified hazards;
- Control of significant hazards (i.e. the steps taken to control the likelihood that these hazards will be a source of harm);
- The use and care of personal protective equipment where necessary;
- Any hazards that employees may create during work and how to control the likelihood of harm to themselves or others;
- The review of any new work processes, products or equipment, where hazards have been identified and the measures taken to control any likelihood of harm;
- Standards for work practices; and
- The emergency procedures for the healthcare facility.

The dissemination of health and safety information can be conducted through a wide range of activities. Some suggested ways of communicating include utilising existing management and other staff meetings to provide and promote health and safety information, the development of new or changed job descriptions and duty statements, displays on notice boards, inclusion in induction programmes, supervisor's instructions to employees, and arranging for a health and safety representative in each work area.

The information should be presented in an appropriate form, taking into account the literacy and the language needs of the employees. Information may need to be introduced, explained, and the understanding of information by employees may need to be checked.

Information for visitors to the workplace

A system should be developed to ensure that visitors (such as delivery drivers, volunteers, tradespeople and those visiting patients or residents) are made aware of and comply with the health and safety requirements for the facility.

This should include:

- Emergency procedures for the facility;
- The observance of all instructions and warnings;
- The use of suitable safety warning signs in areas where there are hazards; and
- The exclusion of visitors from certain work areas where they may be affected by work hazards.

ACT:

Duties of Employers in Relation to Information

...

12. Information for employees generally —
Every employer shall ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work has been given, in such a form and manner that the employee is reasonably likely to understand it, information about—

- (a) What to do if an emergency arises while the employee is doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place; and
- (b) All identified hazards to which the employee is or may be exposed while doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place, and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to the employee; and
- (c) All identified hazards the employee will or may create while doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place, and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to other people; and
- (d) Where all necessary safety clothing, devices, equipment, and materials are kept.

General Duties of Employers

6. Employers to ensure safety of employees—

Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

...

(e) Develop procedures for dealing with emergencies that may arise while employees are at work.

...

Duties of Employers in Relation to Training and Supervision

...

14. Employers to involve employees in development of health and safety procedures—

Every employer shall ensure that all employees have the opportunity to be fully involved in the development of procedures developed for the purpose of—

...

(b) Dealing with or reacting to emergencies or imminent dangers.

1.9 Emergency procedures

Planning and preparing for emergencies is an essential part of hazard prevention and control. All employees should know exactly what they must do in each type of emergency situation.

It is important, as an element of hazard prevention and control, that healthcare facilities plan and prepare for emergencies, including planning for emergency response operations to handle releases of hazardous substances.

Police, fire brigade, emergency services and other authorities should be incorporated into the emergency response plan.

It is the responsibility of management to ensure that a programme is instituted and that it is frequently reviewed and updated. Staff must be given the opportunity to be fully involved in the development of procedures.

The programme should include, as a minimum:

- A corporate policy statement which emphasises the importance of emergency response planning and affirms management support for the emergency response initiative;
- An outline of chains of command or responsibility during an emergency, in order to ensure a rapid and effective response;
- Clearly defined roles and responsibilities of all facility personnel during an emergency;
- Clearly defined communications network and “alerting” procedures to be used both during normal business and off-hours;
- Detailed emergency response procedures developed and included for each specific type of emergency;
- Emergency evacuation procedures and emergency evacuation routes prepared and posted;
- Procedures to be followed by employees who remain to perform (or shut down) critical plant operations before the plant is evacuated;
- Clearly defined reporting requirements, indicating who is responsible for reporting an incident both within the organisation and to outside authorities;
- Training requirements for all personnel within the facility; and
- Provision for regular review and updating of the emergency response plan.

Section 1.14 provides further information on the recording and notification of accidents and serious harm.

FURTHER INFORMATION

Standards

AS 4083:1992 *Emergency responses for healthcare facilities*

AS 3745:1995 *Emergency control organisation and procedures for buildings*

Code of Practice: *Emergency Evacuation Planning and Staff Training in NZ Hospitals and Community Care Buildings* (available from Standards NZ)

Code of Practice: *Fire Protection in Area Health Board and Licensed Hospitals and Healthcare Buildings* (available from Standards NZ)

1.10 Education and training

Employers are required to provide education and training in health and safety as part of their responsibility to provide a healthy and safe workplace. Employers should provide such training at all levels to ensure that management and employees are able to meet their roles and responsibilities. Occupational health and safety training needs to be integrated with the facility's organisational training system. To ensure that all training needs have been identified in relation to hazards in the workplace and how to deal with them, an evaluation should be carried out as part of the regular review of the facility's health and safety programme.

Occupational health and safety training can be incorporated into:

- Induction training for new employees (including information about workplace standards, hazards, risks, controls, the use of personal protective equipment, accident reporting system, and emergency procedures);
- In-service training;
- Management/supervisor training; and
- Training for those with designated roles and responsibilities such as health and safety coordinators and representatives, committee members, emergency wardens and first-aiders.

A record should be kept of training provided for each employee, the skills they have attained and any further training that could be needed. Training records should be reviewed regularly with employees, to ensure that they are kept up-to-date. See also 3.17, Fire precautions.

Supervision

Employers must ensure that employees who do not have the necessary knowledge and experience are supervised by someone who does, until the employee is able to work in a manner that is not likely to cause harm to themselves or anyone else.

1.11 Health promotion

Health promotion programmes are not a specific requirement of the Health and Safety in Employment Act. However, the development of health promotion material and activities in the workplace can not only help to prevent harm caused by work activities, but can also encourage healthy behavioural practices that can have a positive impact outside the place of work.

LEGISLATION — Education and training

ACT

Duties of Employers in Relation to Training and Supervision

13. **Training and supervision** — Every employer shall take all practicable steps to ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work—

(a) Either—

(i) Has; or

(ii) Is so supervised, by a person who has, —
such knowledge and experience of similar places, and work, plant, or substances of that kind, as to ensure that the employee's doing the work, using the plant, or dealing with the substance, is not likely to cause harm to the employee or other people; and
(b) Is adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that the employee is or may be required to use or handle.

The emphasis of health promotion activities is on:

- Self responsibility;
- Prevention of illness and injury;
- Enhanced health status;
- Participation; and
- Equity and access.

Workplace policy on smoking

The Smoke Free Environments Act 1990 requires every employer to develop a workplace policy on smoking, in consultation with employees. This policy must be based on the principle that employees who do not wish to smoke shall, so far as is reasonably practicable, be protected from tobacco smoke in the workplace. Certain minimum requirements must be included within any workplace policy on smoking, including that smoking must not be permitted in lifts or in office areas where more than one person works in a common air space.

FURTHER INFORMATION

Smoke Free Environments Act 1990

1.12 Controls over purchasing

The employer's responsibilities also involve the interaction with persons that design and provide goods such as machinery, equipment, substances and protective clothing. The development of a health and safety component in the facilities purchasing guidelines is critical. This should take into account any hazards and the cost of controls, well in advance of the introduction of new equipment, products or services into the workplace.

A purchasing system should require designers, suppliers, and sellers to conform with the healthcare facility's nominated health and safety standards, meet all relevant industry standards and provide written health and safety information for all products, chemicals or substances (e.g. provision of Material Safety Data Sheets (MSDS)).

Advice and training should be provided to those persons responsible for any purchasing.

1.13 Management of contract work

The Health and Safety in Employment Act clearly defines the responsibilities of employers, self-employed persons, employees, persons with control of places of work, and principals (any person who engages any other person, other than an employee, for gain or reward).

A principal has a duty to “take all practicable steps” (see p 7 for further explanation) to

LEGISLATION — Controls over purchasing

REGULATIONS.

Regulations 65-69 apply. They are reproduced at 1.22, Duties of designers, manufacturers, suppliers and sellers of plant.

LEGISLATION — Management of contract work

ACT

Other Duties

15. Duties of employers to people who are not employees — Every employer shall take all practicable steps to ensure that no action or inaction of any employee while at work harms any other person.

16. Duties of persons with control of places of work —

To the extent that a person is—

(a) The owner, lessee, sublessee, occupier, or person in possession of a place of work or any part of a

ensure contractors, sub-contractors, their employees and any other people in the area are not harmed while the contracted work is being carried out. This does not absolve the contractor or sub-contractor from meeting their own duties as an employer under the Act.

For a principal to “take all practicable steps” will depend on the circumstances and the nature of the work the contractor is being engaged to do.

There can be considerable variety in the nature of contract work being managed in a healthcare facility and will include long-term contract work, (e.g, laboratory services contracted to private providers) as well as short-term contracts (e.g, bureau nursing staff contracted to work a ward shift).

The healthcare facility should develop a management policy and appropriate procedures relating to contractors and sub-contractors to fulfil the responsibilities of a principal and to ensure that all contract work is managed in accordance with the expected standards.

Large organisations with long-term contracting arrangements should have formal systems in place and negotiate compliance with health and safety requirements as part of the contract tendering process.

Co-ordination between the principal, site management, contractors and healthcare workers should be considered at the time of negotiating a construction or maintenance contract, as this type of work can generate hazards such as noise or solvent vapours that affect patients and/or healthcare staff.

Contractors should be able to provide the principal with a health and safety management plan outlining:

- Compliance with the Health and Safety in Employment Act and other relevant acts, regulations and codes of practice;
- A system to identify existing and new hazards throughout the term of the contract and what action will be taken to control significant hazards;
- Health and safety information and training given to employees engaged for the contract;
- A system for supervising employees where necessary; and
- The accident/incident reporting and investigation procedure, including a procedure to advise the principal of any accident or incident that might occur as a consequence of the contracted work.

Before commencing work, the facility must ensure that all contractors are aware of the relevant health and safety procedures applicable to the place of work. This should include:

- Information on any known hazards they may be exposed to in the place of work and how to control them;

place of work (not being a home occupied by the person); or

(b) The owner, lessee, sublessee, or bailee, of any plant in a place of work (not being a home occupied by the person),—the person shall take all practicable steps to ensure that people in the place of work, and people in the vicinity of the place of work, are not harmed by any hazard that is or arises in the place of work.

17. **Duties of self-employed people** — Every self-employed person shall take all practicable steps to ensure that no action or inaction of the self-employed person while at work harms the self-employed person or any other person.

18. **Duties of principals** — (1) Every principal shall take all practicable steps to ensure that—

(a) No employee of a contractor or subcontractor; and

(b) If an individual, no contractor or subcontractor,—is harmed while doing any work (other than residential work) that the contractor was engaged to do.

(2) Subsection (1) of this section shall be read subject to section 2 (2) of this Act.

19. **Duties of employees**— Every employee shall take all practicable steps to ensure—

(a) The employee’s safety while at work; and

(b) That no action or inaction of the employee while at work causes harm to any other person.

LEGISLATION — Accidents and serious harm (records and notification)

ACT

Accidents

25. **Recording and notification of accidents and serious harm**—(1) Every employer shall maintain (in the prescribed form) a register of accidents and serious harm; and shall record in the register the prescribed particulars relating to—

- (a) Every accident that harmed (or, as the case may be, might have harmed)—
- Any employee at work; or
 - Any person in a place of work controlled by the employer; and
- (b) Every occurrence of serious harm to an employee at work, or as a result of any hazard to which the employee was exposed while at work, in the employment of the employer.
- (2) Subsection (3) of this section applies to—
- Serious harm in respect of which an employer is required by subsection (1) (b) of this section to record particulars; and
 - Accidents of a kind or description required by regulations made under section 21 of this Act to be notified to the Secretary.
- (3) Where there occurs any serious harm or accident to which this subsection applies, the employer concerned shall—
- As soon as is possible after its occurrence, notify the Secretary of the occurrence; and
 - Within 7 days of the occurrence, give the Secretary written notice, in the prescribed form, of the circumstances of the occurrence.

26. **No interference at accident scene**—(1) Where a person is seriously harmed while at work, no person shall,

unless authorised to do so by an inspector, remove or in any way interfere with or disturb any wreckage, article, or thing related to the incident except to the extent necessary—

- To save the life of, prevent harm to, or relieve the suffering of, any person; or
 - To maintain the access of the general public to an essential service or utility; or
 - To prevent serious damage to or serious loss of property.
- (2) Subsection (1) of this section does not apply where a person is seriously harmed by—
- An accident involving a motor vehicle on a public highway; or
 - An accident being investigated under Part VIII of the Shipping and Seamen Act 1952, the Armed Forces Discipline Act 1971, the Civil Aviation Act 1990, or the Transport Accident Investigation Commission Act 1990; or
 - An accident being investigated by a member of the Police.

- Emergency procedures that exist and are required to be followed in the event of an emergency; and
- The observance of all instructions, warnings and restricted areas.

1.14 Accidents and serious harm (records and notification)

The Health and Safety in Employment Act requires employers to keep a register of work-related accidents and serious harm. This includes every accident that harmed (or might have harmed):

- Any employee at work;
- Any person in a place of work under the employer's control.

Employers are also required to investigate all accidents, harm and near-misses to determine whether they were caused by a significant hazard.

Employers are required to notify serious harm that occurs to employees while at work to the Secretary (in practice, the nearest OSH office), as soon as possible. In addition, the accident must also be reported on the prescribed form within 7 days. (Forms are included in the Workplace Accident Register available from OSH offices and selected stationers.)

If a person suffers serious harm, the scene of the accident must not be disturbed unless to :

- Save life or prevent suffering;
- Maintain public access for essential services e.g, electricity, gas;
- Prevent serious damage or loss of property;

The OSH office will advise whether it wishes to investigate the accident and what action may be taken in the meantime.

FURTHER INFORMATION

OSH publications

A Guide to Managing Health and Safety to Meet the Requirements of the Health and Safety in Employment Act 1992

A Guide to the Health and Safety in Employment Act 1992

Workplace Accident Register

Guidelines for the Provision of Facilities and General Safety and Health in Commercial and Industrial Premises

1.15 Injury management and rehabilitation

Although not a specific requirement under the Health and Safety in Employment Act, a comprehensive approach to health and safety management includes the integration of prevention and rehabilitation strategies in a workplace.

Most employees require only basic medical treatment for injury or illness and will return to work after a short absence without the need for formal rehabilitation. Injury or illness causing serious harm, or long-term absence from normal duties, requires a managed procedure to assist with recovery and return to normal work.

This could include:

- Early reporting, intervention and assessment procedures;
- Clearly defined responsibilities for the rehabilitation programme (e.g. appointing a rehabilitation co-ordinator);
- A multi-disciplinary approach to rehabilitation;
- A system for liaison between the injured person, those involved in the workplace and health practitioners;
- A system to monitor and progressively upgrade rehabilitation to match the recovery process;
- Follow-up after the return to normal work; and
- A system to identify suitable alternative duties.

The objective of a rehabilitation programme is to encourage an early return to work that is designed, programmed and supervised to ensure the recovery process is maintained and that there is no risk of further illness or injury.

The rehabilitation policy should be included in the induction programme to ensure employees understand the procedure.

Investigation

It is important that all occupational illness or injury is fully investigated:

- To identify the real cause of injury or illness;
- To develop effective methods to prevent future similar accidents/incidents occurring; and
- To meet the legislative requirements of the Health and Safety in Employment Act.

LEGISLATION -Specific hazards

ACT

General Duties of Employers

6. Employers to ensure safety of employees—

Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

- (a) Provide and maintain for employees a safe working environment; and
- (b) Provide and maintain for employees while they are at work facilities for their safety and health; and
- (c) Ensure that plant used by any employee at work is so arranged, designed, made, and maintained that it is safe for the employee to use; and
- (d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—
 - (i) In their place of work; or
 - (ii) Near their place of work and under the employer's control; and
- (e) Develop procedures for dealing with emergencies that may arise while employees are at work.

Duties of Employers in Relation to Hazard Management

7. **Identification of hazards**— (1) Every employer shall ensure that there are in place effective methods for—

- (a) Systematically identifying existing hazards to employees at work; and
 - (b) Systematically identifying (if possible before, and otherwise as, they arise) new hazards to employees at work; and
 - (c) Regularly assessing each hazard identified, and determining whether or not it is a significant hazard.
- (2) Where there occurs any accident or harm in respect of which an employer is required by section 25 (1) of this Act to record particulars, the employer shall take all practicable steps to ensure that the occurrence is so investigated as to determine whether it was caused by or arose from a significant hazard.

8. **Significant hazards to employees to be eliminated if practicable**—Where there is a significant hazard to employees at work, the employer shall take all practicable steps to eliminate it.

9. **Significant hazards to employees to be isolated where elimination impracticable**—Where —

- (a) There is a significant hazard to employees at work; and
 - (b) Either—
 - (i) There are no practicable steps that may be taken to eliminate it; or
 - (ii) All practicable steps to eliminate it have been taken, but it has not been eliminated,—
- the employer shall take all practicable steps to isolate it from the employees.

Occupational hazards encountered by healthcare workers are well documented and generally fall into five categories :

Biological / infectious hazards - Infectious/biological agents, such as bacteria, viruses, fungi, or parasites, that may be transmitted via contact with infected patients or contaminated body secretions/fluids (e.g, human immunodeficiency virus (HIV); hepatitis B, C viruses; tuberculosis).

Chemical hazards - Various forms of chemicals that are potentially toxic or irritating to the body system, including medications, solutions, and gases (e.g, ethylene oxide, waste anaesthetic gases, glutaraldehyde).

Environmental / mechanical hazards - Factors encountered in the work environment that cause or potentiate accidents, injuries, strain, or discomfort (e.g, poor equipment or lifting devices, slippery floors).

Physical hazards - Agents within the workplace environment, such as radiation, electricity, extreme temperatures, and noise that can cause tissue trauma.

Psychosocial / psychological hazards - Factors and situations encountered or associated with one's job or work environment that create or potentiate stress, emotional strain, and/or interpersonal problems (e.g, stress, shiftwork).

2.1 Biological / infectious hazards

Biological / infectious agents can be transmitted to a person through inhalation, injection, ingestion, or physical contact. The combination of the number of organisms in the environment, the virulence of these organisms and the resistance of the individual ultimately determines whether or not the person will actually contract the disease.

An infection control programme should formalise and document the policies, procedures and practices necessary to minimise the risk of disease transmission and occurrence throughout a healthcare facility.

This requires consultation with employees and the support of all management and staff.

As healthcare facilities vary considerably in size, patient or resident populations, infectious disease concerns and available resources, it is important that the policy and procedures for infection control should take into account the particular characteristics and infection risks of the individual facility.

Employer responsibilities

It is the employer's responsibility to provide all staff in the healthcare facility with adequate protection against infection and provide a safe working environment.

Safe work procedures should be developed within the framework of hazard identification, assessment and control.

This should include:

- Baseline monitoring for previous exposures (e.g. Hepatitis B immune status, baseline Mantoux) as part of the employment procedure;
- Staff access to appropriate testing, vaccination and counselling programmes;
- Procedures for monitoring employee health;
- A procedure for employees to report ill health, accidents and injuries with appropriate follow-up, including investigating all work-related ill health or injuries;
- Reporting serious harm injuries to OSH;
- Staff education and training in principles, policies and procedures of infection control. This applies to all staff, those with support responsibilities as well as clinical staff;
- Implementation of controls, e.g. engineering controls, such as an appropriate ventilation system;
- Standard work procedures (and the provision of personal protective equipment if necessary) to protect employees' health;
- Procedures to regularly monitor the work environment and work practices to assess compliance with the facility's infection control and health and safety policies; and
- Procedures for ensuring that standard precautions are used throughout the facility.

Employee responsibilities

It is the responsibility of all employees to take all practicable steps to protect their health and the health of others, by following the policies and procedures of the infection control programme for the facility.

Housekeeping and laundry

Policies and procedures should cover all routine, and any specific purpose cleaning such as, isolation areas, surgical suites, used patient care equipment and the handling of contaminated spills.

Laundry services should also have policies and procedures for the safe collecting, handling, storage and distribution of laundry. This should cover procedures for dealing with soiled items and laundry from people with known infections.

Standard precautions

A new strategy of standard precautions was introduced in 1996.

Standard precautions are precautions to be taken by all healthcare facility staff and applied to all patients or residents, regardless of their presumed infectious status. Standard precautions recognise that blood, all body fluids, secretions and excretions (except sweat) regardless of whether or not they contain visible blood, non-intact skin, and mucous

10. Significant hazards to employees to be minimised, and employees to be protected, where elimination and isolation impracticable

— (1) Where—

- (a) There is a significant hazard to employees at work; and
 - (b) Either—
 - (i) There are no practicable steps that may be taken to eliminate it; or
 - (ii) All practicable steps to eliminate it have been taken, but it has not been eliminated; and
 - (c) Either—
 - (i) There are no practicable steps that may be taken to isolate it from the employees; or
 - (ii) All practicable steps to isolate it from the employees have been taken, but it has not been isolated,— the employer shall take the steps set out in subsection (2) of this section.
- (2) The steps are—
- (a) To take all practicable steps to minimise the likelihood that the hazard will be a cause or source of harm to the employees; and
 - (b) To ensure that there is provided for, accessible to, and used by the employees suitable clothing and equipment to protect them from any harm that may be caused by or may arise out of the hazard; and
 - (c) To monitor the employees' exposure to the hazard; and
 - d) To take all practicable steps to obtain the employees' consent to the monitoring of their health in relation to the hazard; and
 - e) With their informed consent, to monitor the employees' health in relation to exposure to the hazard.

Duties of Employers in Relation to Information

11. Employees to be given results of monitoring—

- (1) This section applies to the results of any monitoring of any employee or place of work if it was undertaken in compliance with this Act; and—
- (a) If the monitoring was undertaken by or on behalf of an employer; or
 - (b) If—
 - (i) The monitoring was undertaken by or on behalf of a department (within the meaning of the State Sector Act 1988); and
 - (ii) The results have been given to an employer.
- (2) Subject to subsection (3) of this section, every employer shall ensure that—
- (a) Every employee is given all results to which this section applies of monitoring of the employee (whether as an individual or as one of a number of employees) in relation to health or safety; and
 - (b) All employees who ask for them are given all results to which this section applies of general monitoring of—
 - (i) Conditions in the employee's place of work; or
 - (ii) The health or safety of employees there.
- (3) Every employer shall ensure that—
- (a) There are omitted from all results to which this

section Applies given to any individual employee all information that identifies, or discloses anything about, any other individual employee; and
(b) There are omitted from all results to which this section applies given to any group of employees all information that identifies, or discloses anything about, any employee.

...

12. Information for employees generally —

Every employer shall ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work has been given, in such a form and manner that the employee is reasonably likely to understand it, information about—

- (a) What to do if an emergency arises while the employee is doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place; and
- (b) All identified hazards to which the employee is or may be exposed while doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place, and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to the employee; and
- (c) All identified hazards the employee will or may create while doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place, and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to other people; and
- (d) Where all necessary safety clothing, devices, equipment, and materials are kept.

Duties of Employers in Relation to Training and Supervision

13. **Training and supervision**—Every employer shall take all practicable steps to ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work —

- (a) Either—
 - (i) Has; or
 - (ii) Is so supervised, by a person who has such knowledge and experience of similar places, and work, plant, or substances of that kind, as to ensure that the employee's doing the work, using the plant, or dealing with the substance, is not likely to cause harm to the employee or other people; and
- (b) Is adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that the employee is or may be required to use or handle.

membranes are potentially infectious, and that precautions are required to reduce risk of transmission of disease from both recognised and unrecognised sources of infection.

Standard precautions combine the major features of universal precautions (designed to reduce risk of transmission of blood-borne pathogens) and body substance isolation (designed to reduce risk of transmission of pathogens from moist body substances) and include, but are not limited to, handwashing, use of protective gloves, and use of barrier protection.

FURTHER INFORMATION

Publications

Guidelines for Tuberculosis Control in New Zealand Tuberculosis Working Party 1996. Ministry of Health.

Draft Infection Control Standards and Draft Laundry Guidelines (1996) National Licensing Office, Ministry of Health.

Video

Bloodborne Pathogens in the Workplace

2.2 Chemical hazards

Many factors can influence the risk of hazards associated with chemicals in the workplace. These include the toxicity and physical properties of the substances, work practices, the nature and duration of the exposure, the effects of combined exposures, the routes of entry into the human body, and the susceptibility of the worker.

The principal aim of a chemical safety programme is to systematically identify and investigate potential hazards in order to minimise the risk of adverse health and safety effects due to exposure to chemicals in the workplace. The programme should also aim to ensure that employees with potential for exposure to chemicals used at work are provided with education and training. This should cover the nature of the hazards and means of assessing and controlling exposure to chemicals, including safe storage and emergency plans. Transport, storage, and disposal of waste chemicals and therapeutic and diagnostic agents should comply with appropriate waste management policies.

Principles of operational control

The principles of operational control in the use of chemicals are:

- Elimination of hazardous substances wherever practical.
- Substitution — consider substituting a less toxic substance, or the same substance in a less hazardous form or process (e.g. using a less flammable solvent; or using detergent rather than acid for cleaning).
- Isolation of the hazardous substance by putting distance or shielding between the substance and the worker. This prevents the dangers associated with the chemical from reaching the worker.

- Minimisation by the provision of general and local ventilation to remove or reduce the concentration of airborne contaminants such as fumes, gases, vapours, and mists.
- Engineering controls — use plant or processes that are able to contain or minimise the generation of hazardous substances (e.g. fume cupboards).
- Protection of the worker by the provision of personal protective equipment to prevent physical contact with the worker.
- Safe work practices — these usually involve management decisions which require persons to work in safer ways (e.g. by allowing access for authorised persons only; reducing the period of exposure; or regular cleaning and decontamination).

Common chemical hazards

Healthcare workers are potentially occupationally exposed to a number of chemicals in the workplace:

- Anaesthetic waste gases and vapours (gases such as nitrous oxide, enflurane, halothane, and isoflurane);
- Chemotherapeutic agents (antineoplastic and cytotoxic drugs, anti-viral or antibacterial drugs);
- Cleaning agents (disinfectants such as isopropyl alcohol, iodine, betadine, chlorine);
- Sterilising agents (such as glutaraldehyde, ethylene oxide);
- X-ray processing chemicals;
- Insecticides;
- Medications;
- Soaps and detergents;
- Solvents (e.g. alcohol, acetone, benzoin);
- Tissue fixatives and agents; and
- Inorganic mercury.

Below is a brief summary of some of the common categories of hazards.

Anaesthetic waste gases and vapours

Anaesthetic gases can be released into work areas such as the operating room, the recovery room and delivery suites. While faulty seals in equipment account for the majority of gas leaks, other causes include poor administration techniques and exhalation by patients. Low levels of nitrous oxide, halothane, enflurane, and isoflurane may be released by any of these means. Exposure to the gases generated from vapourisers may also occur when anaesthetic technicians fill the vapourisers.

Proper ventilation, gas scavenger systems for extracting waste and exhaled gases in the induction mask, and regular testing of anaesthetic equipment will enhance programmes to limit exposure.

Cytotoxic (antineoplastic) drugs

The greatest risk of occupational exposure to cytotoxic drugs is during their preparation and administration. Other aspects of patient care such as spill and waste management may also pose a risk of occupational exposure.

All employees who may be exposed need to be fully informed of all potential dangers and the need to take adequate precautions.

It is essential that written policies and procedures are established for the safe handling of cytotoxic drugs. This should be accompanied by education and training designed to teach personnel the risks involved with the handling of these drugs, the different routes of exposure, and the means to protect both themselves and others from unnecessary exposure. Safety guidelines should also include proper procedures for drug preparation, administration to patients, and how to deal with spills, as well as routine disposal of waste to reduce unnecessary exposure to personnel.

No screening test is currently available to reliably determine exposure. Employers have a responsibility to ensure that they remain aware of, and apply, current developments for monitoring the health of personnel involved in the handling of cytotoxic drugs. Any overt direct exposure should be documented for future reference.

FURTHER INFORMATION

OSH publication

Guidelines for the Safe Handling of Cytotoxic Drugs and Related Waste

Sterilising agents

Ethylene oxide is used in the health industry as a sterilising agent for medical devices and equipment. Areas in the hospital that use sterilising agents include the operating rooms, central supply, renal dialysis units, respiratory therapy departments and areas that autoclave equipment. Its use is especially important in the sterilisation of heat- and moisture-sensitive items which cannot be sterilised by steam, e.g. some plastics.

There is evidence that the inhaled gas may be the cause of leukaemia in sterile services staff. The liquefied gas from the gas cylinder causes dermatitis, blisters and burns when spilt on the skin.

Effective source control measures (i.e. containment or local exhaust ventilation) and work practices must be implemented to reduce the potential for worker exposure. Because the odour of ethylene oxide cannot be detected until the concentration exceeds approximately 700 ppm, significant exposures can occur without the worker's knowledge. This possibility emphasises the need for an effective and reliable system of exposure control measures.

Publications

National Code of Practice for the Safe Use of Ethylene Oxide in Sterilisation/Fumigation Processes [NOHSC:2008(1992)]

Guidance Note for the Safe Use of Ethylene Oxide in Sterilisation/Fumigation Processes [NOHSC:3016(1992)]

AS1714:1990 *Sterilizers - 12/88 ethylene oxide- Hospital use*

Formaldehyde is a tissue sterilant or preservative used in dialysis units, pathology departments, central supply departments and gross anatomy laboratories. Formaldehyde gas is an irritant to the eyes and respiratory tract. As a liquid in solution, it can cause both primary irritation and sensitisation dermatitis. Formaldehyde exposure has also been linked to occupational asthma in the hospital setting and in other work environments. The US Environmental Protection Agency have listed formaldehyde as a probable human carcinogen; therefore exposure must be controlled to maintain the lowest levels possible.

Staff education regarding chemical hazards, along with health surveillance of exposed workers, will enhance the effectiveness of any safety programme. Adequate ventilation is essential.

Glutaraldehyde is used as a disinfectant, sterilising and cleaning agent, biological tissue fixative and as a component in developer for processing x-ray film. Skin contact with glutaraldehyde solutions, aerosols and vapours can cause eye irritation and either irritant or allergic contact dermatitis. Inhalation of vapours and aerosols can cause nose, throat and lung irritation; headaches; and nausea. Respiratory sensitisation can cause allergic rhinitis and asthma-like reactions.

The substitution of a less hazardous chemical in place of glutaraldehyde, or a change of process is the preferred option.

Enclosure of work procedures and processes where glutaraldehyde is used, appropriate work practices, local exhaust ventilation, and the use of personal protective equipment are required to prevent skin contact and inhalation where substitution is not possible.

X-ray processing chemicals

Because such a wide range of chemicals is used in x-ray film processing, it is important to know precisely what procedures to use to avoid risks to health.

The focus has to be on controlling the chemicals at their source through containment, while also providing ventilation to act as a second line of defence. Where technically possible, the chemicals used should be substituted by safer alternatives.

Skin contact should be avoided at all times, and suitable protective clothing worn when performing routine cleaning of processor units and manual mixing of chemicals.

Inorganic mercury

Mercury contamination in healthcare facilities is predominantly caused by the breakage of thermometers and blood pressure apparatus. The majority of these spills do not pose a

high acute risk. The initial response to such spillages should be to isolate the immediate area and begin the cleanup procedure. As with all other hazardous substances in the workplace, there should be procedures in place to deal with spillages and cleaning of contaminated surfaces. Any person involved in mercury cleanup should use the appropriate personal protective equipment, including clothing protection and gloves. Areas where mercury-containing apparatus is handled should have an impervious floor and work surface. The cleanup of a major mercury spill or gross contamination (e.g. ejected mercury from manometers) of laboratory surfaces and equipment should only be carried out by people trained to do so.

Latex sensitisation

The introduction of standard precautions in healthcare has led to greater use of barriers against infection, with gloves being a primary method of protection. Fear of HIV transmission and other blood-borne diseases means that people working in healthcare make much more extensive use of gloves than they used to.

Latex sensitisation can pose a serious threat to the health and jobs of some health professionals and patients. It can cause a variety of allergic reactions, from urticaria to rare cases of anaphylactic shock.

Workers should be aware of the potential health effects related to latex sensitivity, so that adverse reactions can be recognised and preventative steps taken before symptoms become severe.

Every facility should have a policy to:

- Supply relevant information;
- Encourage staff to seek help if actual or possible allergy presents;
- Provide alternatives to latex-based devices as necessary; and
- Compile purchasing data so that informed choices can be made when purchasing.

FURTHER INFORMATION

OSH publications

Approved Code of Practice for the Management of Substances Hazardous to Health

A Guide to Occupational Skin Disease

Chronic Organic Solvent Neurotoxicity: Diagnostic criteria

Guidelines for the Preparation of Material Safety Data Sheets in New Zealand

Guidelines for the Safe Handling of Cytotoxic Drugs and Related Waste

Practical Guidelines for the Safe Use of Organic Solvents

Safe Occupational Use of Glutaraldehyde in the Health Industries

Safety with Corrosive Chemicals

Working with Formaldehyde

Workplace Exposure Standards 1994

2.3 Laboratory safety

The development of policies and procedures is the first step in establishing a laboratory health and safety system. For the system to work properly, the policies and procedures developed need to become standard work practices.

Assessment of risks in hospital laboratories is particularly difficult when one considers the range of possible hazards — fires; explosions; inhalation of toxic gases, aerosols and vapours; splashes of corrosive chemicals on the skin or in the eyes; thermal burns; cryogenic burns; accidental injections; falls; and cuts and grazes. Of these, the most difficult risks to assess are exposures to chemicals, radiation, or infectious agents. Exposures in laboratories are typically short in duration, intermittent, and involve small quantities (relative to an industrial setting) of mixtures of agents. Little is known about the health effects of such an exposure profile.

Due to the difficulties in quantifying risks, an effective approach to laboratory safety involves development of universal control measures. In this context, the term “universal control” refers to the use of measures such as ventilation, substitution, personal protective equipment, and documented storage, handling, and disposal procedures in order to minimise or even eliminate exposures, irrespective of the agents involved.

FURTHER INFORMATION

Standards

AS 2243 (set): 1990-95 *Safety in laboratories*

AS/NZS: 2243.3: 1995 *Microbiology*

AS 2830: 1985 *Good laboratory practice*

2.4 Hazardous waste management

Policies for handling hazardous waste should be developed in consultation with waste generators, waste handlers and waste disposal staff. There should be recognition of the chain of responsibility and involvement of all levels in policy development and implementation.

“Cradle to grave” waste management policies in workplaces should be developed. These should include policies for:

- Identifying waste materials;
- Comparatively assessing the benefits of using materials against the problems associated with disposing of their waste;
- Preparing a transport and disposal flowchart from the waste generator to the disposal site;
- Clearly allocating responsibilities for each step in this process; and
- Training staff in waste management procedures and hazards.

NZS 4304:1990 *Healthcare waste management* is the agreed basis for acceptable practice for the management of healthcare related waste. The facility generating the waste should be responsible for ensuring the safe disposal of all healthcare wastes arising within the facility.

The waste management policy should be environmentally responsible and comply with legal requirements. The procedures in place should protect the health and safety of persons in the facility and the community.

FURTHER INFORMATION :

Standard

NZS 4304:1990 *Healthcare waste management*

2.5 Environmental / mechanical hazards

Manual handling

Musculoskeletal injuries and back pain are serious problems within the health industry and are a major cause of loss of work time.

Back injury can occur as a result of a single event, but is more often the cumulative result of many episodes of awkward postures, movements, weights and forces on the back, causing “wear and tear” over time.

Manual handling is related not only to lifting, transferring or positioning patients, but also to work postures adopted in other activities, e.g. work carried out by ambulance staff, orderlies, support services, and personnel in areas such as radiography and physical therapy. In community care, manual handling problems can arise from difficult working circumstances, and limited ability to modify the work area to minimise the risk.

Training and educating employees how to lift cannot by itself address the fundamental problems of manual handling. A broader, multidisciplinary approach is required, in which employers and employees work together to reduce the risks of manual handling tasks and help prevent injuries.

A systematic approach to the management of manual handling problems, leading to a prevention-based strategy, is necessary. This comprises:

- Identification of manual handling hazards;
- Assessment of which manual handling tasks pose a risk of injury occurring;
- Control of the risk by either removing the hazard entirely, isolating it, or minimising the risk it poses; and
- Evaluation of the control measures to see if they are working.

Management systems should aim to prevent manual handling injuries.

The identification of manual handling hazards should show both a proactive and a reactive approach. Proactive methods include safety inspections, observation of tasks and the application of ergonomic principles to the design of equipment and facilities. Reactive methods include investigating reports of discomfort, the use of hazard registers to identify existing and potential problems, and the analysis of incident reports to investigate and resolve accidents and incidents.

Assessment of manual handling tasks should take into consideration the following factors:

- Evaluation of how tasks are performed by observation of activities (e.g, nature of loads, work heights, working postures, actions and movements);
- Workplace design or layout and ergonomic principles;
- Duration and frequency of manual handling;
- Location of loads and distances moved;
- Loads and forces (including assessment of patient size, mental co-operation and physical co-ordination);
- Characteristics of loads and equipment;
- Consideration of work organisation and workload;
- Environmental conditions (such as lighting, heat and humidity, noise, vibration, condition of floor surfaces);
- Skills and experience (knowledge about health and safety issues of manual handling and training in how to perform tasks to minimise the risk of injury);
- Physical capacity of individuals;
- Clothing (design of uniforms, comfortable, non-slip footwear);
- Special needs (e.g, pregnancy or disability, gradual return to work); and
- Equipment and furniture design and maintenance.

Control options could include:

Design and redesign - ideally all plant and equipment should be designed safe from the outset. Examples include reorganisation or redesign of jobs, tasks or workplace layout, elimination or reduction in the amount of manual handling where possible.

Manual handling aids to reduce the burden of manual handling.

Assessment of new equipment/furniture for manual handling risks prior to purchase. Professional ergonomic expertise may be required.

Provision of education and training on safe manual handling and lifting techniques on induction and planned, regular refresher courses. Provision of training in the correct use of mechanical and other patient handling aids.

Provision of information and education on injury prevention and the principles of back care (this could be included in a health promotion programme);

Clothing design should provide the ability to perform manual handling tasks safely and modestly. Footwear should be comfortable, provide good foot support, and have a non-slip sole.

Management of manual handling injury

The manual handling policy should include a system for the early reporting and management of back pain and manual handling injuries. Employee access to appropriate medical and rehabilitation services will provide a well-managed recovery. The policy should also cover follow-up and monitoring of recovery after the person has returned to work.

FURTHER INFORMATION

OSH publications

Back in Care - Preventing back pain and back injuries in caregivers

Back in Care - Preventing musculoskeletal injuries in staff in hospitals and residential care facilities

Manual Handling - Guidelines for the workplace

Manual Handling - A workbook

Prevention of slips, trips and falls

Slips, trips and falls are the most common cause of injury and also the most preventable. Identification of potential slip, trip and fall hazards is important to prevent or reduce the incidence of accidents in all work areas.

Many falls result from longstanding hazards which people get used to, put up with and plan to change but ignore until some incident or accident focuses attention on them. Simply walking down a hospital corridor can often be a challenge — housekeeping trolleys, wheelchairs, extra beds/stretchers and groups of people frequently clutter the corridors.

Basic safety housekeeping and regular maintenance procedures can eliminate many fall hazards. Some prevention measures to consider are:

- Regular inspection of floor surfaces for changes, e.g. lifting or damage;
- Regular inspection of lifts for correct floor approximation;
- Prompt clean-up of spills;
- Educating staff to recognise potential hazards (e.g. to prevent coffee/tea spillage, reduce fill level of cups) and to document control measures;
- Placement of warning signs to highlight spillages or during cleaning;
- Designing for effective drainage;
- Ensuring that all walkways and work areas (including bathrooms and kitchens) are kept clear of unnecessary equipment and furniture;

- Ensuring all walkways and stairs are well lit at all times;
- Securing power leads in all work areas (e.g, patient equipment, computers) and walkways;
- Provision and use of appropriate and safe stools or ladders for high storage areas; and
- Provision and use of appropriate footwear for the work area.

Occupational overuse syndrome

Occupational overuse syndrome (OOS) is a collective term for a range of conditions, including injury, characterised by discomfort or persistent pain in muscles, tendons, nerves, soft tissues and joints with evidence of clinical signs. Symptoms such as pain, discomfort and muscle weakness may continue even after initial clinical signs have diminished. The common feature is that they are all caused by prolonged, excessive muscle tension, forceful movements, repetitive actions, and awkward postures.

OOS can be classified into three broad groups — localised inflammations, compression syndromes and pain syndromes. The various problems that come under the OOS heading are all different, and distinguishable from the aches and pains that are part of normal life. The development of OOS may include other factors such as stress, difficult working conditions, and poorly managed workload.

OOS can effect people in a wide variety of occupations in a healthcare facility, including:

- Professional medical and dental staff;
- Housekeeping staff;
- Kitchen and laundry staff;
- Maintenance staff (e.g, carpenters); and
- Clerical and other staff using visual display units (VDUs).

The introduction of VDUs into the workplace has changed the structure of jobs, work organisation and the work environment, and the health industry is no exception. While the transition to the electronic workstation has led to increased skills and efficiencies, it has sometimes led to health problems, often caused by lack of knowledge and understanding. OOS is a health problem that is often raised with VDU use.

As OOS symptoms may develop over a period of time, and can cause severe loss of bodily function that can lead to injury resulting in absence from work for extended periods, the risk factors for OOS need to be treated as significant hazards.

These factors include:

- Work organisation and planning (control over workload, task specification, rest breaks);
- Workplace/workstation design (layout based on ergonomic principles);

- The design of equipment and tasks (allows relaxed postures and movements to be used); and
- Staff education, training and skills (knowledge of safe working techniques; and knowledge of the causes and early warning symptoms of OOS and how to get help; included in induction training).

If an employee faces a significant hazard which cannot be reasonably eliminated or isolated, then the HSE Act requires the employer to take all practicable steps to minimise the hazard and monitor the employee's exposure to the hazard.

A system for the early reporting of aches, pains or discomfort should be set up, and employees trained how to use it, so that they can be dealt with promptly before symptoms become severe or chronic. Employee access to appropriate assessment and medical services will benefit from accurate diagnosis and rehabilitation.

Because of the widespread nature of the symptoms and the difficulty of treatment for occupational overuse syndrome, the saying "prevention is better than cure", is particularly important.

FURTHER INFORMATION

OSH publications

Approved Code of Practice for the Safe Use of Visual Display Units

Occupational Overuse Syndrome - Guidelines for Prevention and Management

Occupational Overuse Syndrome - Checklists for the Evaluation of Work

Occupational Overuse Syndrome - Treatment and Rehabilitation : A Practitioner's Guide

The Pocket Ergonomist (Keyboard/Clerical)

The Floppy Ergonomist - floppy disk and explanatory leaflet

Vehicle safety

Vehicles used as a part of the normal duties of work are considered a place of work in terms of the Health and Safety in Employment Act.

Employers who have employees travelling regularly on public roads, between worksites, visiting clients, transporting clients and transporting goods and equipment, must take "all practicable steps" to ensure the health and safety of their employees and other people who might be affected by the actions of their employees.

Employers must ensure that all vehicles are regularly maintained and have a current warrant of fitness. All internal fixtures, such as those used for restraining wheelchairs, stretchers, gas bottles etc., must be regularly checked and maintained. Employees must hold the correct drivers licence and be provided with information, training and supervision to enable them to drive safely.

Depending on the type of driving required, an employer may need to provide guidance in safe procedures, and information and training on:

- Safe loading and securing of goods;
- Safe loading and securing of people (e.g, wheelchairs and stretchers);
- Safe manual handling procedures;
- Safe handling and transport of chemicals, including gas bottles;
- Safe handling and transport of medical supplies and samples;
- Provision and use of appropriate fire extinguishers;
- First-aid procedures;
- Defensive driving and driver awareness training;
- If appropriate, long-distance driving and avoiding fatigue;
- Seatbelt and seat headrest adjustment;
- The use of cigarettes, alcohol, and other drugs while driving; and
- The use of cellphones in vehicles.

Safe loading

Employees who drive as part of their normal duties need training on how to secure loads to prevent them shifting in transit, and how to arrange the weight of a load to ensure a safe balance for steering and braking.

Vans, station wagons and hatchbacks used to carry equipment or other loads should be fitted with appropriate safety screens behind the driving seats to protect the driver or passengers from heavy items flying forward in sudden braking or collision.

If possible, vehicles should be assessed for manual handling risks that could occur during the loading and unloading of vehicles, particularly when these actions will occur several times during one work shift (e.g, district nurses' duties).

Passenger service vehicles in which equipment is fitted for people with special mobility requirements must comply with the requirements as set out in section 8; Land Transport Rule 31001.

FURTHER INFORMATION

Publications

Everly, M. Drive to Survive. *Health and Safety at Work*, November 1996
Transportation of Dangerous Goods, Land Transport Safety Authority
Transportation of Medical Supplies, Ministry of Health
Vehicle Standards (Passenger Service Vehicle Construction), LTSA

Another source

Automobile Association

ACT

Sections 6-10 apply. They are reproduced at the beginning of this part.

REGULATION.

11. **Noise** — (1) Every employer shall take all practicable steps to ensure, in relation to every place of work under the control of that employer, that no employee is exposed to noise above the following levels:

(a) A noise exposure level, $L_{Aeq,8hr}$ of 85 dB(A); and
 (b) A peak noise level, L_{peak} of 140 dB,—
 whether or not the employee is wearing a personal hearing protection device.

(2) For the purposes of subclause (1) of this regulation,—

(a) The noise exposure level, $L_{Aeq,8hr}$ is the level of the daily noise exposure normalised to a nominal 8-hour day, in dB(A) referenced to 20 micropascals; that is to say, it is the steady noise level that would, in the course of an eight hour period, cause the same A-frequency-weighted sound energy as that due to the actual noise over the actual working day; and

(b) The peak noise level, L_{peak} , is the highest frequency-unweighted peak sound pressure level in the place of work in decibels referenced to 20 micropascals, measured using sound measuring equipment with “P” time-weighting, as specified in the Australian Standard numbered AS 1259.1-1990 and entitled “Sound level meters Part 1: Non-integrating”; and

(c) The levels of noise referred to in subclause (1) of this regulation shall be measured and assessed in accordance with the Australian Standard numbered AS 1269-1989 and entitled “Acoustics— Hearing conservation”.

(3) Where an employer has taken all practicable steps to ensure that no employee at any place of work under the control of that employer is exposed to noise above the levels specified in subclause (1) of this regulation but has not eliminated the risk that any employee may be exposed to noise above those levels, the employer shall communicate clearly, by way of signs, labelling of machinery, or other appropriate means—

(a) The fact that noise levels at the place of work are or are likely to be hazardous; and

(b) The sort of personal hearing protection device that is suitable to protect against the noise levels; and

(c) Where such a device may be obtained.

Noise

Exposure to excessive noise levels can cause hearing loss, annoyance, interfere with communication and reduce personal performance.

In a healthcare facility, excessive noise levels can be encountered in a number of departments — e.g, workshops, laundry areas, orthotics and plaster rooms.

A preliminary assessment should be carried out to determine the areas where noise levels are likely to, or actually, exceed the exposure limits.

A more detailed assessment may need to be carried out in order to:

- Determine the amount of noise to which employees are exposed;
- Help identify sources of noise;
- Develop noise control strategies; and
- Determine appropriate hearing protection needs.

The HSE Act clearly establishes a hierarchy of control, with elimination of the noise hazard through engineering controls being the first priority. In the case of machinery or processes where it is not technically feasible to make sufficient reduction in noise levels by engineering methods, noise exposure must be reduced by isolation of the noise hazard from employees. Only if this is not practicable should protection, by means of personal hearing protectors, be relied on to protect the employees from the hazard on an on-going basis.

New developments in noise control are continually occurring, and employers should keep up-to-date, and purchase equipment with the lowest noise rating.

The control of excessive noise can be achieved by the introduction of a hearing conservation programme at the workplace.

Such a programme may include:

- Identifying hazards to hearing at the workplace;
- Assessing the risks, noise assessments;
- Developing a noise policy and programme of action;
- Implementing control measures;
- Providing audiometric testing to any employee regularly exposed to excessive noise;
- Providing training in noise reduction and prevention;
- Providing information to enable employees to work in a safe and healthy manner; and
- Consulting with employees at all stages.

OSH publications

Management of Noise at Work: Resource kit, including:

- *Control Guide: Management of noise at work*
- *Approved Code of Practice for the Management of Noise in the Workplace*
- *List of Graded Hearing Protectors*
- *Fact sheets and employee booklets*

Noise-induced Hearing Loss of Occupational Origin: A guide for medical practitioners

Noise-induced Hearing Loss — A message to employees on preventing hearing loss

Noise-induced Hearing Loss — A message to employers on preventing hearing loss

Vibration

Noisy processes are often associated with vibration. Intense vibration may be transmitted to employees who operate some vehicles, equipment, and hand-held tools. Where employees are exposed to whole- or part-body vibration, the exposure must be controlled and maintained within limits that protect employees from adverse health effects. Guidance on these limits is contained in international Standards (e.g, ISO 2631 and ISO 5349) and other documents.

Reducing vibration is the most effective course of control. Some ways to do this are to:

- Ask about vibration levels before deciding which new tool or machine to buy. Where possible, choose low-vibration equipment;
- Consider whether the job could be done without using high-vibration tools;
- Provide tools designed to minimise vibration;
- Maintain tools and equipment in good condition;
- Make sure that employees use the right tool for the job;
- Alter the job to reduce the grip and pressure that the employee needs to apply.

Other measures

Where employees need to carry on using high-vibration tools, other measures can help to reduce the harmful effects, such as:

- Designing work breaks to avoid long periods of uninterrupted vibration exposure;
- Advising employees to exercise fingers and hands to help blood flow; and
- Information and training should be provided to employees on the hazard, signs of injury, and ways to minimise risk, and report any symptoms.

2.6 Physical hazards

Physical hazards for healthcare workers include exposure to needles and other sharp instruments, ionising and non-ionising radiation, electrical hazards, and compressed gases.

A systematic approach to identify all possible hazards should be implemented. A walk through of the healthcare facility by an appropriately trained person, or a selected group from the health and safety committee, in consultation with the employees in each area can be used to perform the identification procedure. All hazards and potential hazards should be identified and recorded.

Once all the potential hazards are identified, an assessment to categorise those deemed to be capable of causing serious harm should be carried out. Once the significant hazards are identified, the hierarchy of steps to eliminate, isolate, or minimise the hazard must be implemented.

People who can potentially come into contact with radiation hazards, such as cleaners and waste management personnel, may not be adequately trained. The requirements of people involved in waste disposal also need to be considered.

Radiation

An extensive programme of radiation protection must accompany the use of radiation in hospitals. Such a programme should aim at protecting patients from excessive exposure to radiation during diagnosis or treatment, and the public and personnel against exposure to leakage radiation-emitting equipment, radioactive sources, or patients who have undergone an isotopic investigation or treatment.

All healthcare workers should be aware of the hazards associated with the use of equipment involving radiation.

Non-ionising radiation

Similar to visible light, non-ionising radiation has the ability to increase the temperature of a target material. Different types of non-ionising radiation include:

- Radio waves;
- Microwaves;
- Infrared light;
- Visible light;
- Ultraviolet light;
- Lasers;
- Magnetic fields; and
- Ultrasound.

Ultraviolet radiation. The biological effects of exposure to ultraviolet radiation are due mainly to destructive, photochemical reactions in tissue and are dependent on the wavelength range of the radiation. As penetration of the radiation is small, effects are limited mainly to the anterior parts of the eyes and to unprotected skin.

When sources are powerful enough to be a hazard, protection against overexposure may be achieved by a combination of:

- Administrative control measures;
- Engineering control measures; and
- Personal protection.

Emphasis should be placed on administrative and engineering control measures to minimise the need for personal protection.

Lasers. Radiation from lasers can cause damage to living tissue, primarily by thermal effects. The extent of the damage depends on the frequency of the radiation, the power intensity of the beam, the exposure time and the type of tissue exposed. The tissues most at risk from lasers are the eyes and skin.

In general, the number of persons in the vicinity of an operating laser and their time for potential exposure should be minimised. The operation should be under the control of a competent person who is aware of the hazards. An energised laser, if left unattended, should be made inaccessible to all but authorised users.

Potential hazards from direct or reflected emission may also be reduced by the use of physical barriers (closed rooms, absorbent panels, enclosed instrument casings), interlocks, and shutters.

There are no New Zealand regulations controlling the use of lasers. The National Radiation Laboratory does provide an advisory service, and Standards New Zealand has produced a standard on laser safety, NZS 5821, which is, in part, an adoption of AS 2211.

Healthcare facilities should establish laser safety programmes specific to the use of lasers in their facility and provide education and training to exposed healthcare workers about the establishment's laser precautions. The following should be addressed:

- Establishing policies and procedures for the safe use of lasers;
- Training employees in the proper use of lasers;
- Ensuring that laser impact points are free of flammable and combustible substances;
- Ensuring that warning signs are posted at entrances to laser use areas; and
- Establishing precautions for the safe use of lasers, including:
 - Provision and use of appropriate goggles/glasses for affected patients and healthcare workers;

- Eye, skin and tissue protection while the laser is in use;
- Smoke evacuators, to extract at source (i.e, isolation) if procedure produces a “plume”, with provision and use of surgical high-filtration masks (respirators) if this is not practicable; and
- Baseline and periodic medical surveillance (i.e, eye and skin examinations) for exposed personnel.

Microwave and radiofrequency radiation can be harmful because of its ability to produce heat in body tissue. The amount of heat produced depends on the intensity of the radiation, the duration of the exposure, and on the water content of the tissue and its ability to dissipate heat.

Ionising radiation

Ionising radiation has the same properties as non-ionising radiation plus the ability to create ions in exposed material. Such production of ions could result in direct damage to the genetic material of the cells (the cell is the basic constituent of biological material) and/or the production of cellular poison (e.g, peroxide).

The different types of ionising radiation are:

- Alpha particles;
- Beta particles;
- Neutrons;
- X-rays; and
- Gamma rays.

Ionising radiation is used for a variety of diagnostic and treatment procedures, including:

- Radiographs (x-rays);
- Fluoroscopy;
- Angiography;
- Computerised axial tomography (CAT) scans;
- Nuclear medicine scans;
- Teletherapy; and
- Cobalt treatments.

Ionising radiation has cumulative and long-term effects that may damage tissue. Patients and staff must be monitored and protected from scatter and non-essential direct exposure.

The formulation of many radioactively labelled chemicals such as unencapsulated radioisotopes that are injected or implanted into patients makes them potentially readily

absorbable. Normal use of these particles creates almost no risk to workers, but accidents, such as spills, may expose the worker to high levels of radiation. Therefore, compliance with guidelines for handling these substances is essential.

Radiation protection

The basic principle of radiation protection is to avoid all unnecessary exposures to the radiation. There are three fundamental strategies to follow:

Time. The shorter the exposure to radiation the smaller the dose. Plan the work to avoid unnecessary exposure.

Distance. The greater the distance from a source of radiation, the smaller the radiation dose. Distance is a very effective protective measure against radiation exposure.

Shielding. If because of physical conditions it is not possible to reduce the radiation intensity through distance, then suitable absorbing material should be placed between the worker and the source of radiation.

Further information regarding the management of hazards associated with ionising and non-ionising radiation may be obtained from the National Radiation Laboratory (NRL). Under the Radiation Protection Act 1965, healthcare facilities using ionising radiation must be licensed, with staff who are appropriately qualified.

The National Radiation Laboratory have produced numerous codes of practice on radiation safety. These are set out below.

FURTHER INFORMATION

Legislation

Radiation Protection Act 1965, reprinted 1986.

Radiation Protection Regulations 1982.

NRL publications

Code of safe practice for the use of unsealed radioactive materials, 1996 revision. Code NRL C1.

Code of safe practice for the use of sealed radioactive materials in industry, 1989. Code NRL C2.

Code of safe practice for the use of unsealed radioactive materials in medical diagnosis, therapy, and research, 1994. Code NRL C2.

Code of practice for the safe use of lasers, 1976. Code NRL C4.

Code of safe practice for the use of x-rays in medical diagnosis, 1994. Code NRL C5.

Code of safe practice for the use of x-rays in diagnosis (chiropractic), 1986. Code NRL C6.

Code of safe practice for the use of x-rays in dentistry, 1991. Code NRL C7.

Code of safe practice for the use of x-rays in diagnosis (veterinary), 1984. Code NRL C8.

Code of safe practice for the use of x-rays in podiatry, 1990. Code NRL C10.

Code of safe practice for the use of irradiating apparatus in medical therapy, 1992. Code NRL C12.

All licensed facilities should have copies of the above codes. Extra copies or further information on radiation can be obtained from:

National Radiation Laboratory
PO Box 25-099,
108 Victoria Street,
CHRISTCHURCH

Standards

NZS 5821:1981 *Laser safety*

AS/NZS 4173 : 1994 *Guide to the safe use of lasers in healthcare*

AS/NZS 3200 *Approval and test specification - Medical electrical equipment*

Part 2.22:1993: *Particular requirements for safety - Diagnostic and therapeutic laser equipment*

AS 2211: 1991 *Laser safety*

OSH publication

Guidance Notes for the Protection of Workers from Solar Ultraviolet Radiation

Electrical hazards

Electricity is a form of energy which can cause death or serious injury if poorly controlled.

Employers must ensure all electrical equipment and fixed electrical installations are without risk to health and safety when used correctly.

In general, an employer must ensure:

- The right equipment has been selected for the task. Consider the environment, design, and capacity;
- The equipment has been installed properly (according to the manufacturers' instructions by a qualified person). Consider whether the electrical installation will be overloaded by the addition of a new machine by consulting with an electrician;
- The operator has been trained to use the equipment — defective, obsolete, redundant, home-made or home-repaired electrical equipment is not used at a workplace;
- Equipment is properly maintained by qualified persons; “do not use” and “lockout” tags are provided and used where appropriate.

Principal contractors must ensure all employers, employees and self-employed persons on a project comply with statutory requirements for electrical safety.

It is good preventative maintenance to organise a regular inspection and testing of all electrical equipment in the facility. All new equipment should be inspected, preferably by a licensed electrician, before it is used. This is especially important for equipment imported from overseas, which may not conform to NZ specifications with regard to electrical safety.

Installations in hazardous areas, for example locations where there may be an accumulation of ignitable dusts, vapours or gases, should have special thought given to their design. This may involve the use of flameproof equipment, purging systems, intrinsically safe equipment and/or dust-excluding, ignition-proof equipment. If the atmosphere is very corrosive, then protection for the equipment, or the use of different equipment, is recommended.

High-voltage equipment

Some laboratory equipment, such as an electrophoresis bath, uses power supplies that are capable of delivering high voltages and currents. This type of equipment and its power

supply should incorporate the following:

- Automatic shutdown if earth leakage is detected;
- Overload protection to protect the supply unit;
- Safety interlocks to turn the power off;
- Earthed power points;
- No obstruction of air intakes;
- Clean, unobstructed dust filters; and
- Be operated only in accordance with the manufacturer's specifications.

When this type of electrical equipment is in use, the cell and the power supply should be labelled with a “DANGER - HIGH VOLTAGE” sign.

Cellphones

Because of the high frequencies used in cellphones, these devices are very likely to interfere with electro-medical equipment. Overseas studies have shown that all cellphones create sufficient levels of electromagnetic interference to interfere with electro-medical equipment at distances of 2 metres or closer. This 2 metre distance includes through solid concrete walls, floors, and ceilings, as well as inside rooms. Facilities should have in place a clear policy for the use of cellphones.

FURTHER INFORMATION

Ministry of Commerce, Energy Inspection Group — for information about electrical wiring under the Electricity Act 1992, Electrical Wiring Regulations 1993

NZCEP11: 1993 *New Zealand Electrical Code of Practice for Inspection and Testing of Low Voltage Installations for Certification Purposes*

NZCEP12: 1993 *New Zealand Electrical Code of Practice for Electrical Installations - The safe use of electricity in medical locations and associated areas*

Standards

AS 2500: 1986 *Guide to the safe use of electricity in patient care*

AS 3003: 1995 *Electrical installations - Patient treatment areas of hospitals and medical and dental practices*

AS 3551: 1988 *Acceptance testing and in service testing of electromedical equipment*

2.7 Violence at work

Violence in the workplace has received increased attention in recent years, and in the health industry, violence must now be recognised as an important occupational hazard.

The expression of violence includes:

- The use of physical force to injure, endanger or damage people or their property;
- Intimidation, or coercive or fear-inducing behaviour; and

LEGISLATION - Violence at work

ACT

General Duties of Employers

6. Employers to ensure safety of employees—
Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —
(a) Provide and maintain for employees a safe working environment; and

.....

(e) Develop procedures for dealing with emergencies that may arise while employees are at work.

.....

- Verbal abuse and harassment, including racial or sexual harassment.

Some aspects of violence, such as physical assault, are self-evident. The use of language is harder to gauge — verbal abuse and gestures may be offensive or threatening to some people, and yet this may be the way some people express anger in their everyday lives.

In the health industry, violence at work applies to any incident in which an employee is abused, threatened, or assaulted in circumstances directly connected to the performance of normal duties. This can be from patients, clients, visitors, members of the public or fellow employees.

Certain activities place workers at higher risk of assault or aggression.

Staff who work in emergency service areas, community and mental health services and those who work alone in isolated areas, are particularly at risk. Violence committed by disturbed people includes those who are disoriented or confused because of age, neurological or psychological impairment, reaction to anaesthesia, or the influence of alcohol or other drugs.

Violence and aggression at work and the fear of it can have wide effects.

For employers, any form of violence can lead to low morale within the healthcare facility, financial costs, lost productivity and the personal costs of emotional trauma.

The potential for incidents involving violence is a significant hazard and the duty on employers extends to taking all practicable steps to protect employees from incidents of violent behaviour which may result in injury, or harm to their health, the same as for any other hazard in the place of work.

Employees also have a duty under the Health and Safety in Employment Act to ensure their own safety while at work and that no action (or inaction) on their part causes harm to another person.

Management responsibilities

Early intervention is the most effective way of addressing violence in the workplace. The recommended approach is to eliminate the opportunity for violent or threatening behaviour to occur. An action plan will identify any potential for violence, assess incidents and determine control measures to deal with violence during or after the event.

Employee involvement is essential when preparing an action plan.

Identification

To assist, employers should provide information to staff to increase awareness of violence as a hazard and to encourage the reporting of all incidents of violent behaviour (a confidential reporting system may be appropriate).

Employers must identify situations in which violent or threatening behaviour may arise, for example:

- Dissatisfaction with prolonged or poor service;
- Staffing levels inappropriate to client dependency;
- Providing care for people who are stressed, angry or deprived;
- Disturbed people (mental or intellectual impairment, or those affected by drugs or alcohol);
- Working with people in the community who have a history of violence;
- Institutionalised clients who may generate aggressive behaviour toward other residents or staff;
- Where drugs are administered or stored;
- Employees working in isolation; and
- Inadequate building and ground security.

Incident/accident reports should be assessed to identify the nature and extent of any violence and to identify areas of particular risk. Grouping incidents with similar features may show a pattern and help in developing preventive measures.

Reporting and investigating procedures also need to be reviewed to determine effectiveness.

Control measures

Steps must be taken to control actual or potential incidents of violence.

This may involve redesign of the work environment, or administrative systems, such as:

- Changing the system of work to limit the opportunity for violent behaviour; (e.g, improve cash or drug handling procedures);
- Providing clear guidelines on what to do in threatening situations;
- A roster which includes an adequate level of experienced and appropriately trained staff (including weekend and night shifts);
- Having flexible staffing levels to adjust to needs;
- Reducing work pressures and waiting times;
- Provision of training in the prevention and management of violence (including induction training and follow-up information and training);
- Clear policy and procedures to be followed in the case of sexual harassment;
- Effective security and communication systems (surveillance of premises and grounds, controlled access, alarm systems, adequate lighting, planned maintenance, and provision of “bleepers” for staff who need to work in isolated areas); and
- Monitoring and assessing the effectiveness of the preventative measures; (e.g, a system

where employees can provide feedback to check if changes that have been put into place are working).

Larger health facilities may consider providing a trained crisis intervention team to respond to emergencies and, if necessary, provide escort or transport services.

Working in isolation

Measures that may reduce risks for staff working in isolation (e.g, those working alone in the community) include:

- Staff training in recognising signs of disturbance and in conflict resolution;
- Procedures for assessing risk and changes in client condition;
- Providing staff with information on client risk;
- Using two-person work teams;
- Provision of an adequate communication system (e.g, cellphone, periodic reporting to base); and
- Provision of extra security procedures for night work.

Help for victims when violent incidents do occur

To minimise the negative effects following a violent incident, an appropriate post-incident response system can provide debriefing, counselling and support for staff who have become victims. This may also include colleagues of the victim, especially if they were witness to the violence.

- Provide medical evaluation and treatment for injuries.
- Assist with completing medical and legal reports.
- Where appropriate and necessary, contact the police.

FURTHER INFORMATION

Employment Contracts Act 1991

Health and Disability Commissioner (Code of Health and Disability Services Consumers' Rights) Regulations 1996

Human Rights Act 1993

Mental Health Act 1989

OSH publications

A Guide for Employers and Employees on Dealing with Violence at Work

Guidelines for the Safety of Staff from the Threat of Armed Robbery

What Employees Need to know about Violence at Work

For further advice

Specialist consultants

New Zealand Police

Trade unions

Employers' associations

2.8 Psychological / psychosocial hazards

Stress, fatigue and shiftwork

Occupational stress is becoming an increasingly important issue, not only in the management of occupational health and safety, but also in terms of general management concerns such as cost, quality of service and personnel management.

Occupational stress is a complex process in which many issues such as hours of work, job organisation, the physical environment, personal health and the amount of pressure in the individual's private life, are all interwoven.

Stress and fatigue

The inter-relationship between work, stressors, stress and fatigue may all have an effect on health and safety at work.

In the health industry, the relationship between workplace stressors leading to symptoms of stress and fatigue can be a significant hazard for some healthcare workers. Constant demands on their time, energy, and professional skills, along with the stress of direct responsibility for patient care, exposure to death and dying, and disturbed and sometimes suicidal people, (all of which may be exacerbated by hectic work schedules that do not allow restful breaks), put them at high risk.

All workers are exposed to some source of stress in the workplace, and many have no ill effect from exposure to work-related stressors.

However, individuals react differently and have a varying ability to cope with situations. The stressors of living can lead to stress when a person's coping mechanisms are overwhelmed. This stress can result in fatigue.

The issues of stress and fatigue at work need to be managed like any other hazard in the workplace. The Health and Safety in Employment Act requires employers to take all practicable steps to prevent harm occurring to employees from the way work is organised.

In some circumstances, the effects of stress and fatigue can be a significant hazard which can lead to “serious harm” in terms of the legislation.

A systematic approach is recommended to identify stress hazards, assess for significant harm, and determine effective control measures.

Work situations differ in each healthcare facility, and within the facility itself. Consequently the nature of various stressors will vary accordingly.

To assist with the identification of potential stress hazards, employers should encourage the reporting of signs and symptoms of stress and fatigue. A confidential reporting system may need to be developed.

Some factors which can contribute to stress in the health industry:

LEGISLATION - Psychological / psychosocial hazards

ACT.

General Duties of Employers

6. Employers to ensure safety of employees—
Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

- (i) In their place of work; or
- (ii) Near their place of work and under the employer's control; and

.....

- The intensity and duration of physical and mental effort (chronic urgency, shift work, inflexible work schedules, unpredictable work hours, long or unsociable work hours);
- The emotional stress of caring for sick people;
- The state of health and physical well being of worker (fit, healthy people often cope better with physical and mental stress);
- Organisational factors (lack of control over work load, poor planning of work, level of experienced staff inadequate for client dependency, poor communication within the workplace, organisational changes leading to job insecurity); and
- The work environment (lighting, noise, adequate work space, work station design).

Signs of stress amongst employees may manifest themselves in higher absenteeism, higher staff turnover, lower productivity, lack of concentration and making mistakes, low morale and increased accident and illness rates. Alcohol and drug dependence and depression are also more likely to occur in employees under stress.

In the past, views on stress at work have focused on the individual rather than the work. A stress management programme for employees will not control the causal factors of stress. Although it may help, it will not remove the hazard, as it deals with the victim rather than the stressor. Managing occupational stress involves organisational changes, including improved communication in the workplace and assistance with personal change (e.g. physical fitness, relaxation, time management).

It is often difficult to know if a personal problem is affecting an employee's work, therefore it is important to have a system in place to provide staff with the opportunity to seek professional assistance for any possible personal concerns that could adversely affect their work.

An employee assistance programme (EAP) can be an effective strategy for managing personal problems that may affect work performance. Such programmes are described below.

Shiftwork

The health industry provides continuous care for high-dependency patients and emergency situations. Such a service requires continual mental alertness and co-ordination by all healthcare providers and emergency personnel.

Irrespective of what shift patterns are worked, shiftwork is a significant stressor for most shiftworkers and their families.

Most people who work shifts find it difficult to make the biological and social adjustments required by their work. Shiftwork causes circadian rhythm disturbances, poor sleep patterns and social disruption. Night work is particularly tiring because it means working at a time of physiological shutdown and sleeping during the day, which is less restful than night-time sleep.

Fatigue is a particular occupational hazard for shiftworkers. When staff are constantly asked to work excessive or ad hoc overtime, be on-call over 24 hours, work broken shifts or six-day weeks without adequate recovery time, these work practices constitute an occupational safety and health hazard which needs to be regulated.

Research studies have been undertaken into the organisation of shiftwork systems and roster design in order to reduce the negative impact of shiftwork on workers physical and psychological health and the effect on social and family life.

FURTHER INFORMATION

OSH publication

Stress and Fatigue: Their Impact on Health and Safety in the Workplace

Other publications

Klein M. *The Shiftworker's Handbook - A personal health and lifestyle guide for shiftwork professionals*. Synchro Tech, New York, 1993. Available from 315 S 9th Street, Suite 211 Lincoln NE 68508 USA .

Grandjean. *Fitting the Task to the Man*. 4th ed. Taylor and Francis, London, 1988.

Employee Assistance Programmes (EAPs)

Personal problems can have a serious effect on work performance and can lead to unhealthy and unsafe work practices which may endanger the employee concerned, work colleagues, clients and others in the work area. As part of taking all practicable steps, employers should have a system in place to deal with such issues as soon as the possibility of impaired work performance is recognised.

The aim of an EAP is to provide assistance to employees with any personal problems that can affect their performance at work.

Personal problems which can be dealt with by an EAP include:

- Drug or alcohol dependency;
- Financial difficulty;
- Family or relationship difficulties;
- Stress;
- Grief; and
- Physical and mental ill-health

The objective of an EAP is to help employees restore their health and work performance to satisfactory levels.

The policy and procedures of an EAP should be developed in consultation with the employees in the place of work. Procedures for referral and all details relating to counselling and treatment must be treated with strict confidentiality (in line with the Privacy Act 1993 and the NZ Bill of Rights Act 1990).

ACT

General Duties of Employers

6. Employers to ensure safety of employees—

Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control; and

.....

Substance abuse

Drugs and alcohol can have a significant impact on the occurrence of injury and near misses in the workplace. Drug and alcohol use, apart from increasing a person's risk of injury, can result in reduced productivity, illness, and absenteeism. It not only increases the user's risk of sustaining injury, it also puts other workers at risk. Employers are faced with lateness and absenteeism, lost time and production from accidents and inefficiency and damage to plant, equipment and other property.

The use of prescribed medications should not be overlooked when addressing drugs and alcohol use in the workplace, but may require different strategies.

The issue of substance abuse in the workplace should be part of an overall health and safety strategy which includes the identification and management of hazards.

One measure in addressing drugs and alcohol in the workplace is the development of a policy on alcohol and drugs, rehabilitation and counselling. Prevention should also play a strong role in the enterprise's drug and alcohol policy and particularly in the developing role of the EAP.

Where an employer believes that substance abuse affecting work performance may be occurring, the employer must take steps to ensure the health and safety of the individual who may be suffering the effects of substance abuse, along with other employees who may be affected by the actions of that individual. If an employee's work performance could be impaired in such a way that it creates a risk for that employee, or for other employees, then the employer has no option than to act to remove that risk.

FURTHER INFORMATION

For further advice

Health centres

Medical practitioners

Ministry of Health

The industrial chaplaincy

Trade unions

Employers' Associations

Legislation — Accommodation for clothing

ACT

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

.....

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATIONS

5. Duties in respect of facilities at certain places of work —(1) Every employer shall take all practicable steps to ensure —

(a) That facilities of any of the kinds described in subclause (2) of this regulation are provided for employees at every place of work under the control of that employer where the work is of such a nature that those facilities are required; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are,—

.....

(b) Where the work is of such a nature that employees' clothing is reasonably likely to become contaminated or wet, a place in which to change clothes:

(c) Where the work is of such a nature that it is reasonably likely that employees will bring to the place of work clothes that will not be used at work, facilities for keeping such clothes clean and dry:

.....

Legislation — Air conditioning systems

ACT

General Duties of Employers

6. Employers to ensure safety of employees— Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

(a) Provide and maintain for employees a safe working environment; and

3.1 Accommodation for clothing

Where a change of clothing is necessary for the work performed, separate change rooms for each sex are required, containing clothing accommodation for the protection of the apparel, clothing and other personal belongings of employees not worn during working hours.

In some facilities it could be necessary to provide separate accommodation to avoid the contamination of personal clothing with, for example, soiled protective overalls. Double lockers would usually achieve this.

Arrangements for drying clothes could be necessary where work is conducted outdoors or in damp or humid conditions.

Change rooms, cloak spaces and locker accommodation should comply with those standards for the time being in force. See below for detail.

Change rooms should be provided with adequate lighting and ventilation.

All accommodation provided should be properly maintained, kept clean and not used for the storage of materials or goods.

In light, clean or other facilities where a change of clothing is not necessary, hanging space with provision for safe custody of personal belongings, or half-length lockers, could be used.

FURTHER INFORMATION

Standards

NZS 1187:1969 *Standard specification for clothes lockers* (amended 1976)

OSH publications

Planning the Workplace

Other publications

Safeguard Buyers' Guide to Workplace Safety and Health Products and Services

3.2 Air conditioning systems

In every workplace in which an air conditioning system or similar unit or device is used to control or maintain the temperature or overall atmospheric conditions, the employer should ensure it is regularly inspected, tested and maintained so that it cannot contaminate either the atmosphere or drinking water.

“Sick building syndrome” is an umbrella term for a group of symptoms including eye, nose, and throat irritations, skin rashes, mental fatigue, headache and chest infections suffered by persons working indoors in inadequately managed or designed environments.

Disease such as legionnaires disease can result from poorly designed or maintained ventilation systems.

Air conditioning systems should meet the performance criteria outlined in the guidelines for general ventilation and atmospheric conditions.

See also section 3.12, Ventilation, and section 3.3, Atmospheric conditions.

FURTHER INFORMATION

Building Act 1991 (approved Building Code document G4 *Ventilation*)

Standards

AS 1668: *The use of mechanical ventilation and air conditioning in buildings*

Part 2:1991 *Mechanical ventilation for acceptable indoor air quality*

NZS 4302: *Code of practice for the control of hygiene in air and water systems in buildings*

NZS 4303:1990 *Ventilation for acceptable indoor air quality*

OSH publications

Guidelines for the Management of Work in Extremes of Temperature

Planning the Workplace

Workplace Exposure Standards 1994

Other publications

Industrial Ventilation Manual American Conference of Government Industrial Hygienists

Safeguard Buyers' Guide to Workplace Safety and Health Products and Services

Clearing the Air — a health and safety guide to clean air in offices. New Zealand Council of Trade Unions

Godish T, *Indoor air pollution in offices and other non-residential buildings* (Journal of Environmental Health, vol. 48(4) 190-195

3.3 Atmospheric conditions

Comfortable atmospheric conditions in the workplace are essential for the health and well-being of employees.

Means should be provided in each workplace that, having regard to the processes and activities being carried on, effectively control atmospheric conditions within reasonably comfortable parameters.

A number of environmental factors are involved in the atmospheric conditions in any workplace and should be considered when deciding what control measures should be taken. These include room temperature, humidity, air velocity and amount of radiant heat plus the quantity of fresh air available. The physical activity of the people working in the room should also be taken into account.

Care should be taken in heating workplaces that no fumes are introduced that are likely to cause offence or harm.

Care is required to ensure heating systems are not a source of ignition to any process or activity nearby.

Where practicable, process factors should be controlled at source. If this is not possible, then other options could include controlled micro-environments such as enclosures, or protective clothing. In addition, work practices should be organised to minimise employees' exposure to extremes of heat, cold, humidity or other adverse atmospheric conditions.

REGULATIONS

4. Duties in respect of facilities at every place of work — (1) Every employer shall take all practicable steps to ensure —

(a) That facilities of the kinds described in subclause (2) of this regulation are provided at every place of work under the control of that employer; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are—

.....

(f) Ventilation providing either fresh or purified air:

(g) Means for controlling humidity that arises from any work process or activity;

(h) Means for controlling atmospheric conditions, including air velocity, radiant heat, and temperature:

.....

Legislation — Atmospheric conditions

ACT

General Duties of Employers

6. Employers to ensure safety of employees— Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

(a) Provide and maintain for employees a safe working environment; and

.....

REGULATIONS

4. Duties in respect of facilities at every place of work — (1) Every employer shall take all practicable steps to ensure —

(a) That facilities of the kinds described in subclause (2) of this regulation are provided at every place of work under the control of that employer; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are—

.....

(f) Ventilation providing either fresh or purified air:

(g) Means for controlling humidity that arises from any work process or activity;

- (h) Means for controlling atmospheric conditions, including air velocity, radiant heat, and temperature:
- (i) Facilities to enable any atmospheric contaminants to be controlled as closely as possible to their source:

.....

Legislation — Common facilities and amenities

ACT.

General Duties of Employers

6. **Employers to ensure safety of employees** — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

- (b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATIONS.

4. **Duties in respect of facilities at every place of work** — (1) Every employer shall take all practicable steps to ensure —

- (a) That facilities of the kinds described in subclause (2) of this regulation are provided at every place of work under the control of that employer; and
- (b) That any such facilities are suitable for the purpose for which they are to be used; and
- (c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are—

- (a) Toilets;
- (b) Hand-washing facilities;
- (c) Means of leaving the place of work in an emergency;
- (d) First-aid facilities;
- (e) Facilities for lighting for the purposes of enabling employees to perform their work safely and to move safely about the place of work;
- (f) Ventilation providing either fresh or purified air;
- (g) Means for controlling humidity that arises from any work process or activity;
- (h) Means for controlling atmospheric conditions, including air velocity, radiant heat, and temperature:
- (i) Facilities to enable any atmospheric contaminants to be controlled as closely as possible to their source:
- (j) Facilities for treating or carrying off any atmospheric contaminants for the purpose of minimising the likelihood that any atmospheric

FURTHER INFORMATION

Standards

AS 1668: *The use of mechanical ventilation and air conditioning in buildings*

AS 1668.1: 1991 *Fire and smoke control*

AS 1668.2: 1991 *Mechanical ventilation for acceptable indoor air quality*

Building Act 1991 (approved Building Code document G4 *Ventilation*)

NZS 4302: 1987 *Code of practice for the control of hygiene in air and water systems in buildings*

NZS 4303: 1990 *Ventilation for acceptable indoor air quality*

OSH publications

Guidelines for the Management of Work in Extremes of Temperature

Planning the Workplace

The Pocket Ergonomist (keyboard version)

Workplace Air Quality and Environmental Conditions

Workplace Exposure Standards 1994

Other publications

Industrial Ventilation Manual. American Conference of Government Industrial Hygienists

Clearing the Air — A health and safety guide to clean air in offices. New Zealand Council of Trade Unions

Safeguard Buyers' Guide to Workplace Safety and Health Products and Services

3.4 Common facilities and amenities

Where more than one workplace is contained within one building, the separate employers could provide common facilities and amenities on the same scale as would be required if all persons were employed in a single workplace.

The facilities should be in a convenient location within a reasonable distance of the work area.

Systems to ensure suitable access at all times are necessary, as are adequate arrangements for maintaining and cleaning the facilities.

Generally facilities shared should not be those in a private dwelling house, as they will seldom be sufficiently accessible.

While this does not contemplate employees using public conveniences provided for the public by local authorities, shopping malls, taverns and similar, regard must be had for any special rulings made by the Building Industry Authority in respect of certain establishments.

Refer to section 3.14, Toilets, and 3.15, Washing facilities

FURTHER INFORMATION

OSH publications

Planning the Workplace

3.5 Drinking water

An adequate supply of free, cool, wholesome drinking water is required.

Water should be readily accessible to employees including, where necessary, provision for disabled workers.

Except where the water is delivered in inclined upward jets from which workers can conveniently drink, suitable cups or drinking vessels are required at each point of supply, together with facilities for cleaning them.

Drinking points should not be located in sanitary accommodation.

Any appliance used to cool drinking water should be regularly inspected, tested and maintained so that it cannot in itself contaminate the water.

Where water unsafe for drinking is provided for use in industrial processes or for fire protection, effective precautions to ensure no human consumption are necessary.

Precautions are required to ensure that drinking water supplies are not contaminated by any process or activity in the workplace.

FURTHER INFORMATION

Building Act 1991 (see approved Building Code document G12)

Water Supplies Protection Regulation

Standards

Ministry of Health: *Drinking Water Standards for New Zealand 1995*

AS 3500: *National plumbing and drainage code*

AS 3500.1:1992 *Water supply*

AS 3500.4:1994 *Hot water supply systems*

Other publication

Safeguard Buyers' Guide to Workplace Safety and Health Products and Services

3.6 Seating

Where employees can conveniently and practically do their work seated, then such seating should be provided.

Seating should also be provided for the use of employees whose work is done standing to enable them to take advantage of any opportunity for resting that occurs.

When selecting seating, ergonomic principles should be considered to ensure that factors such as the height, weight, adjustability, construction and stability of the seating is appropriate for the task or situation for which it has been provided.

contaminants will be a cause or source of harm to any employee:

(k) Facilities for employees to have meals during work hours in reasonable shelter and comfort, being facilities that are separate from any plant or materials used in the place of work and that are protected from any atmospheric contaminants, dirt, noise, or any other hazard produced by any work process.

.....

7. Tests for suitability and sufficiency of facilities — (1) The suitability of any facilities provided in accordance with regulations 4 to 6 of these regulations shall be determined having regard to —

(a) The purpose for which the facilities are provided; and

(b) The circumstances in which the facilities are provided.

(2) The sufficiency of the numbers of any facilities provided in accordance with regulations 4 to 6 of these regulations shall be determined having regard to—

(a) The number of employees in the place of work; and

(b) The needs of employees in the place of work; and

(c) The nature of the place of work; and

(d) The nature of any particular hazard in the place of work; and

(e) The type or types of work being carried out in the place of work; and

(f) Whether or not the work is always carried out at the same place of work.

Legislation — Drinking water

ACT.

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATION.

8. Duty in respect of drinking water — Every employer shall take all practicable steps to ensure —

(a) That drinking water is provided for employees at every place of work under the control of that employer; and

(b) That any such drinking water is wholesome; and

(c) That the amount of any such drinking water is sufficient, having regard to the number of employees in the place of work and the nature of the place of work; and

(d) That all employees have access to any such drinking water in a way that is convenient to them.

Legislation — Seating

ACT

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATION

5. Duties in respect of facilities at certain places of work — (1) Every employer shall take all practicable steps to ensure—

(a) That facilities of any of the kinds described in subclause (2) of this regulation are provided for employees at every place of work under the control of that employer where the work is of such a nature that those facilities are required; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are,—

.....

(d) Where the work is of such a nature that it is reasonable for employees to perform it while seated, facilities for sitting:

(e) Where the work is of such a nature that it is not reasonable for employees to perform it while seated, facilities for sitting that enable employees to take any reasonable opportunity for rest that may occur in the course of the work:

Regulation 7 describes tests for suitability and sufficiency of facilities. It is reproduced in section 1.4.

Legislation — Facilities for rest

ACT

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

FURTHER INFORMATION

Standards

BS 3044:1990 *Guide to ergonomic principles in the design and selection of office furniture*

OSH publications

Approved Code of Practice for the Safe Use of Visual Display Units

Ergonomic Evaluation of Office Chairs

Planning the Workplace

Other publications

Safeguard Buyers' Guide to Safety and Health Products and Services

Seating for Office Workers (Department of Health 1989)

Video title

Sitting on the Job

3.7 Facilities for rest

Where seven or more persons are usually employed, a rest area should be provided that is suitable for any person who is indisposed to rest in. The area should be equipped with furniture such as a couch or bed for indisposed persons to rest on.

The area should be a secluded, well-ventilated place, free from distractions such as noise, movement, or process-related smells or fumes.

A separate first-aid room could be adequate for this purpose.

Where such an area is not reasonably available, then alternative arrangements such as sending or taking the employee home can be appropriate.

FURTHER INFORMATION

Building Act 1991 (approved Building Code documents)

OSH publication

Planning the Workplace

3.8 First aid

The employer should provide and maintain health services, first-aid facilities, (including first aid rooms) appliances and requisites in accordance with the requirements of the Factories and Commercial Premises (First Aid) Regulations 1985.

A first aid box or cabinet should be located close to washing facilities (including hot and cold water, soap and clean towels) and should be kept stocked with first aid equipment and materials appropriate for the work being undertaken and the number of persons employed.

The box or cabinet should be clearly identified, kept clean and tidy, and regularly replenished.

First aid supplies should be readily available at all times.

Where more than five employees are employed, a person should be appointed to take charge of the first aid facilities.

Formal first-aid training should be encouraged, and where more than 50 persons are employed a registered nurse or the holder of a certificate issued by the Order of St John, the New Zealand Red Cross Society, or a trainer with qualifications for the time being approved by the Secretary of Labour, is required.

Where more than 100 employees are involved, a first-aid room is required.

Provision should be made to enable first aid delivery to any person who is injured or becomes ill while at work.

Emergency procedures should be developed and practised regularly.

First aiders should be aware of associated hazards such as hepatitis and human immunodeficiency virus (HIV) and the precautions necessary to protect themselves when administering assistance. They should also be aware of safe clean-up procedures of body fluids and soiled surfaces.

If workplace hazards require emergency washing facilities such as a showers, hose attachments or eye fountains, then they should be readily accessible and close to the potential hazard.

FURTHER INFORMATION

Factories and Commercial Premises (First Aid) Regulations 1985

Standard

NZS 2274:1969 *Specification for industrial first aid cabinets* (amended 1978)

OSH publications

Guidance Notes on Providing First Aid Training

Planning the Workplace

Practical Guidelines for the Safe Use of Organic Solvents

Safety at Work — What Every Employee Should Know

The Safe Occupational Use of Glutaraldehyde in the Health Industries

Other publications and information

Safeguard Buyers' Guide to Workplace Safety and Health Products and Services

Order of St John Ambulance Association

The New Zealand Red Cross Society (Inc.)

3.9 Lighting

Lighting design should ensure a uniform distribution of light over the work area to help reduce visual fatigue and provide for the health and safety of all persons in the place of work.

To determine whether sufficient lighting is provided, the values set out in NZS 6703:1984

REGULATION.

6. Duty in respect of indisposed employees —
(1) Every employer shall take all practicable steps to ensure that any employee who, at any place of work under the control of that employer, feels indisposed may—

(a) Rest in facilities provided at the place of work, if the employer decides that that is the appropriate course of action in the circumstances; or
(b) Leave the place of work, if the employer decides that that is the appropriate course of action in the circumstances.

(2) Every employer shall take all practicable steps to ensure—

(a) That any facilities provided under subclause (1) (a) of this regulation are—
(i) Suitable for the purpose for which they are to be used; and
(ii) Provided in sufficient numbers; and
(iii) Maintained in good order and condition; and
(b) That all employees have access to any such facilities in a way that is convenient to them.

Regulation 7 describes tests for suitability and sufficiency of facilities. It is reproduced in section 3.4.

Legislation — First aid

ACT.

General Duties of Employers

6. Employers to ensure safety of employees —
Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATION.

Regulations 4(1) and 4 (2)(d) describe requirements for the provision of first-aid facilities. They are reproduced in section 3.4.

Legislation — Lighting

ACT.

General Duties of Employers

6. Employers to ensure safety of employees —
Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(a) Rest in facilities provided at the place of work, if the employer decides that that is the appropriate course of action in the circumstances; or

.....

REGULATION

Regulations 4 and 7 apply. They are reproduced in section 3.4.

4 (2) The facilities referred to in subclause (1) of this regulation are—

.....

(e) Facilities for lighting for the purposes of enabling employees to perform their work safely and to move safely about the place of work:

should be used. Light value readings should be taken under both daylight and night conditions to determine the sufficiency and suitability of the lighting provided.

Lighting should be provided over the entire place of work, including amenity rooms, passages, stairs, ramps, ladders and gangways, which all should be capable of being lit at such times as people pass along or use them. People passing need not be employees, and could include other persons lawfully in the vicinity. For detailed work or where dangerous processes or machinery is used, higher lighting values will be required than in the general workplace. Localised lighting can meet this requirement.

All exits, not only normal exits, should be lit or be capable of being lit and, where necessary, adequate emergency lighting should be provided.

Outside areas should be satisfactorily lit for work and access during hours of darkness to provide safety and security. A place within the outer boundaries which is used only occasionally for work does not need to be lit constantly, but it should be capable of being lit while work is in progress.

The phrase “capable of being lit” means that electric switches should be so located that light is conveniently and immediately available, and that such switches should be readily identifiable.

In deciding what is suitable lighting, account should be taken not only of the amount of light provided, but also the surrounding brightness, wall colour, light distribution and glare.

Light coloured wall finishes can be used to improve brightness, or darker colours to reduce problems due to reflection, or arc welding flash, for example.

Artificial lights need to be shaded so as to control glare and reflect available light to where it is required. Where necessary, material should be applied to windows and skylights. Blinds, shades, or curtains should be used to reduce heat or glare.

Consideration should be given to any special conditions and other regulations and codes that have application. (See standards listed below.)

The most common of these are specialised fittings and wiring standards applying to hazardous locations, such as spray booths, garage pits, dangerous goods workshops, and wet work areas.

Under certain lighting conditions (flickering from fluorescent tubes), revolving shafting wheels, and high-speed reciprocating parts can appear to be turning backwards, be turning slower than is the case or to be stationary. This optical illusion is known as the stroboscopic effect and its dangers to maintenance staff, machinery operators and passers-by are obvious. This effect is most troublesome and noticeable with fluorescent tubes, but can also arise with filament lamps.

FURTHER INFORMATION

Standards

AS 2383.1:1991 *Electrical equipment for explosive atmospheres* (amended 1992, 1993)

NZS 380: 1968 *Specifications for flameproof electric lighting fittings*

NZS 6703:1984 *Code of practice for interior lighting design*

NZS 6742:1971 *Code of practice for emergency lighting in buildings*

Tables in NZS 6703:1984 (i.e. pages 36-54) give details of measurements, the type of preferred lighting in various circumstances, and minimum lighting values.

Building Act 1991 (approved Building Code document G7 *Natural light* and G8 *Artificial light*)

OSH publications

Approved Code of Practice for the Safe Use of Visual Display Units

Dust Explosions in Factories

Planning the Workplace

Other publications

Lighting for Good Visual Conditions in Workplaces, C Cuttle, ACC, 1980.

Safeguard Buyers' Guide to Workplace Health and Safety Products and Services

You and Your Sight, G Graham (ed.), ACC, 1979

Contacts

Ministry of Commerce, Energy Inspection Group for information about electrical wiring requirements under the Electricity Act 1992, Electricity Regulations 1993, and Electrical codes of practice.

3.10 Maintenance of facilities

Every employer should take all practicable steps to ensure that all facilities are clean and hygienically maintained, fit and suitable for use, and perform to the standard that they are designed or installed to achieve.

FURTHER INFORMATION

OSH health and safety inspectors

Suppliers' and manufacturers' instructions

3.11 Meals in places of work

A dining room or other suitable place for eating is required where employees consume meals in a place of work.

Such a room or place is not required where employees can conveniently have meals at their own homes.

Any dining room or place that is provided should be set apart for that purpose and furnished with tables, chairs, and a suitable means for boiling water.

Dining rooms should be well-ventilated and equipped with a sink and hot and cold running water. It is desirable that a refrigerator be provided.

Legislation — Maintenance of facilities

ACT

6. Employers to ensure safety of employees— Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATION

Regulation 4 applies. It is reproduced in section 3.4.

5. Duties in respect of facilities at certain places of work — (1) Every employer shall take all practicable steps to ensure —

(a) That facilities of any of the kinds described in subclause (2) of this regulation are provided for employees at every place of work under the control of that employer where the work is of such a nature that those facilities are required; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are,—

(a) Where the work is of such a nature that employees are reasonably likely to need facilities for washing the body, such facilities:

(b) Where the work is of such a nature that employees' clothing is reasonably likely to become contaminated or wet, a place in which to change clothes:

(c) Where the work is of such a nature that it is reasonably likely that employees will bring to the place of work clothes that will not be used at work, facilities for keeping such clothes clean and dry:

(d) Where the work is of such a nature that it is reasonable for employees to perform it while seated, facilities for sitting:

(e) Where the work is of such a nature that it is not reasonable for employees to perform it while seated, facilities for sitting that enable employees to take any reasonable opportunity for rest that may occur in the course of the work:

(f) Where the work is of such a nature that it is reasonably likely that any floor will become wet, facilities that prevent employees from becoming wet, whether by way of drainage of any such floor or otherwise.

Regulations 6 and 7 apply. They are reproduced in sections 3.7 and 3.4 respectively.

Legislation — Meals in places of work

ACT

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATION

Regulations 4 and 7 apply. They are reproduced in section 3.4.

All facilities provided should be properly maintained, kept clean and not used for the storage of material or goods.

A suitable means of heating food should be provided, especially where extended hours are worked.

Cupboards are required for foodstuffs and crockery so as to provide protection from dust and vermin.

A rubbish bin fitted with a lid is necessary.

The employer should ensure that no meal is consumed in any place affected by noxious materials, processes or contaminants.

Where a kitchen or serving place is provided, it should meet the requirements of the Food Hygiene Regulations 1974.

Isolation is necessary from any room containing sanitary conveniences in accordance with the Building Act 1993.

FURTHER INFORMATION

Food Hygiene Regulations 1974

Smoke-free Environments Act 1990

Noxious Substances Regulations 1954

Building Act 1991 (approved Building Code document G3 *Food preparation and the prevention of contamination*)

OSH publication

Planning the Workplace

Other publications

Safeguard Buyers' Guide to Workplace Health and Safety Products and Services

Legislation — General place of work ventilation

ACT

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(a) Provide and maintain for employees a safe working environment; and

.....

REGULATION

Regulations 4 and 7 apply. They are reproduced in section 3.4.

3.12 General place of work ventilation

All workrooms (including work areas partially open to the atmosphere where ventilation can be controlled) should be ventilated by natural or mechanical means to provide a constant and sufficient supply of fresh air for the employees using the room.

The supply of fresh air and the removal of hazardous or unpleasant contamination from the air space are two objectives of general workplace ventilation.

The ability to readily control general ventilation is also of importance when managing atmospheric conditions in the workplace.

Usually the ventilation requirement for fresh air is very much less than that for the removal of contamination.

Consideration should be given to the consumption of fresh air for combustion by some heating systems e.g. gas.

Window openings should, where possible, be placed to enable cross-ventilation. As a guide, when relying on natural ventilation, the area of windows should be equivalent to 10 percent of the floor area, and half should be capable of opening.

Doors are not an appropriate means of ventilation in themselves.

FURTHER INFORMATION

Building Act 1991 (approved Building Code document G4 *Ventilation*)

Standards

AS 1668 : *The use of mechanical ventilation and air conditioning in buildings*

Part 2: 1991 *Mechanical ventilation for acceptable indoor air quality*

NZS 4302: 1987 *Code of practice for the control of hygiene in air and water systems in buildings* (amended 1991)

NZS 4303: 1990 *Ventilation for acceptable indoor air quality*

NZS 5261: 1990 *Code of practice for the installation of gas burning appliances and equipment* (Amend 1,1993)

OSH publications

Guidelines for the Management of Work in Extremes of Temperature

Planning the Workplace

Workplace Air Quality and Environmental Conditions

Workplace Exposure Standards 1994

Other publications

Industrial Ventilation Manual. American Conference of Government Industrial Hygienists

Clearing the Air — A Health and Safety Guide to Clean Air in Offices. NZ Council of Trade Unions.

Safeguard Buyers' Guide to Workplace Safety and Health Products and Services

3.13 Removal of steam, fumes, dust and other contaminants

Employees should be protected from the inhalation of any contaminant in the workplace.

Where practicable, dust, fumes, steam or other impurities which arise as a result of any process or in the course of the work should be removed at the point of origin.

Mechanical extraction appliances should prevent the contamination of any other workroom or place of work.

Where any process or other activity discharges or causes to be discharged into the atmosphere any air impurity to which the Resource Management Act 1990 applies, employers should ensure that the discharge conforms with the requirements of that Act.

With regard to hazard control, where elimination or isolation of people from the contamination is not practical, the hazards should be minimised.

Minimisation requires the following:

- Monitoring of the employee's exposure to the hazard;
- Provision with and ensuring the use of suitable protective clothing and equipment;

Legislation — Removal of steam, fumes, dust and other contaminants

ACT

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(a) Provide and maintain for employees a safe working environment; and

.....

REGULATION

Regulations 4 and 7 apply. They are reproduced in section 3.4.

- Monitoring (with the employee's informed consent) the employee's health in relation to the hazard; and
- Any other practical steps be taken that could minimise the effects of the hazard on the employee.

Control measures could also include dilution ventilation, filtration, mechanical extraction systems or a combination of these.

When designing extraction systems, the design should ensure that contaminants are drawn away from the breathing zone of workers, not through it.

The relative toxicity of the contaminant is most important in deciding appropriate control methods, as are other characteristics such as flammability and corrosiveness. With regard to toxicity, reference should be made to the publication *Workplace Exposure Standards 1994*.

Matters relating to specific contaminants, including the parameters for ventilation as a means of control are found in parts of various regulations. These include the Asbestos, Abrasive Blasting, Spraycoating, Electroplating and Lead Process Regulations. Reference should also be made to the Building Code.

FURTHER INFORMATION

Asbestos Regulations 1983

Building Act 1991 (approved Building Code document G4 *Ventilation*)

Noxious Substances Regulations 1954

Standards

AS 1668: *The use of mechanical ventilation and air conditioning in buildings*

Part 2: 1991 *Mechanical ventilation for acceptable indoor air quality*

NZS 4302: *Code of practice for the control of hygiene in air and water systems in buildings*

NZS 4303:1990 *Ventilation for acceptable indoor air quality*

NZS 6101: *Classification of hazardous areas*

Part 1: 1988 *Flammable gas and vapour atmospheres*

Part 2: 1990 *Combustible dusts*

Part 3: 1991 *Specific occupancies (flammable gas and vapour atmospheres)*

NZS 7203: 1992 *Safety in laboratories — fume cupboards* (Amend 1,1992)

OSH publications

Atmospheric Conditions in the Workplace

Glutaraldehyde in Health Industries

Guidelines for the Safe Use of Organic Solvents

Safety at Work — What Every Employee Should Know

Welding Safety

Workplace Air Quality and Environmental Conditions

Workplace Exposure Standards 1994

Other publications

Industrial Ventilation Manual. American Conference of Government Industrial Hygienists

NZCEP *The safety of electricity in a hazardous area*

Safeguard Buyers' Guide to Safety and Health Products and Services

3.14 Toilets

Suitable and sufficient sanitary conveniences should be provided for the exclusive use of both males and females engaged or employed in or about the place of work.

Where more than one workplace is contained within one building, the separate employers could provide common sanitary conveniences on the same scale as would be required if all persons were employed in a single workplace.

The minimum recommended requirements are:

- 1 water closet where up to 15 females are employed, two for up to 20 plus 1 closet for each additional 20 employees or part thereof;
- 1 water closet where up to 20 males are employed, two for up to 30 plus 1 closet for each additional 30 or part thereof;
- 1 urinal where up to 15 males are employed, two for up to 30 plus 1 for each additional 30 males or part thereof.

Toilets for each sex should be constructed and situated in such a way as to ensure privacy for the persons using them. Access should not be through changing facilities used by members of the opposite sex.

They should be readily accessible, well-lit and ventilated, and protected from the weather. If situated outside, good footpath access with lighting should be provided, and where possible access should be covered.

Toilets should not open directly into workrooms, dining rooms, or rooms where food is prepared.

Provision to wash and dry hands is required, including hot and cold water, soap and clean towels or other effective means of drying.

Suitable construction materials include impervious lining materials and floors that can be easily cleaned and maintained to provide hygienic conditions.

Toilet paper should be provided and a means to hang clothing.

Where females are engaged or employed, there should be suitable provision for the disposal of sanitary towels.

Unisex conveniences can be provided for the use of employees if all persons using them are of the same family, the same sex or where the maximum number of persons employed or engaged is usually less than 15.

Such conveniences should be completely enclosed to ensure privacy, have an efficient inside lock, and provide for the disposal of sanitary towels. They should not contain a urinal.

Legislation — Toilets

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

.....

(b) Provide and maintain for employees while they are at work facilities for their safety and health; and

.....

REGULATION.

4. Duties in respect of facilities at every place of work—(1) Every employer shall take all practicable steps to ensure—

(a) That facilities of the kinds described in subclause (2) of this regulation are provided at every place of work under the control of that employer; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are—

(a) Toilets:

(b) Hand-washing facilities:

.....

Regulation 7 describes tests for suitability and sufficiency of facilities. It is reproduced in section 3.4.

Sanitary conveniences for the use of persons with disabilities are required in accordance with the Building Act 1991, and the provisions of the Disabled Persons Community Welfare Act 1975.

They can be used by both persons, with or without disabilities, provided sufficient sanitary conveniences for the numbers engaged or employed are available.

Where conveniences are provided exclusively for the use of persons with disabilities, they should be provided on the basis of one per nine persons employed.

As a rule, any toilets provided by an employer that are open to or available for use by members of the public should not be taken into account when determining whether sufficient conveniences for employees have been provided. However, regard must be had to any special rulings by the Building Industry Association in respect of certain establishments.

Public conveniences provided by local authorities, shopping malls, taverns and similar should not be included in calculating scales of amenities. (Although, again, regard must be had to any special rulings made by the Building Industry Association.)

Refer to section 3.4, Common facilities and amenities.

FURTHER INFORMATION

Disabled Persons Community Welfare Act 1975

Building Act 1991 (approved Building Code document G1 *Personal hygiene*)

Standards

NZS 2038: 1966 *Stainless steel urinals and flushing apparatus*

NZS 3331: 1972 *Specification for quality of vitreous china sanitary appliances*

NZS 4121: 1985 *Code of practice for design for access and use of buildings and facilities by disabled persons*

NZS 4616: 1990 *Washbasins*

OSH publication

Planning the Workplace

Legislation — Washing facilities

ACT

6. Employers to ensure safety of employees—
Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—

- (a) Provide and maintain for employees a safe working environment; and
 - (b) Provide and maintain for employees while they are at work facilities for their safety and health; and
-

3.15 Washing facilities

Employers should provide adequate and suitable washing facilities conveniently accessible to all workers, including as necessary those who are disabled.

Washing facilities should be kept separate from facilities used in connection with any process or activity.

All facilities, conveniences and accommodation provided should be properly maintained, kept clean and not used for the storage of material or goods.

Facilities should include both hot and cold water, suitable non-irritating soap or cleansing agents, nail brushes, and suitable hand and face drying facilities.

Hot water should be tempered or otherwise provided at a temperature low enough to prevent thermal injuries.

Precautions should be taken to ensure hand drying facilities do not spread disease. For example workers should not share towels.

Disposable paper towels, roller cloth towelling, or electrical appliances specifically designed to supply warm air for this purpose meet this objective.

Where employees as a result of their work reasonably need to shower, then showers should be supplied with hot and cold running water, soap, and suitable personal cloth towelling, laundered or replaced at such intervals as are necessary to maintain a clean supply.

Such circumstances could include where employees are exposed to poisonous, infectious, irritating or sensitising substances, and where workers require facilities to clean the whole body (such as when working in very hot environments). It is not desirable for such contaminants to be taken from the workplace to the employee's residence.

Showers should be provided in the minimum ratio of one to every 7 employees ceasing work at any one time, be under cover and provided with suitable doors or curtains to ensure privacy. Adequate changing and drying areas are required and floors should be non-slip.

Doors to shower rooms should be clearly designated and bear the name or design for the gender for which the room is provided.

FURTHER INFORMATION

Factories and Commercial Premises (First Aid) Regulations 1985

Noxious Substances Regulations 1954

Standards

AS 3588:1989 *Shower bases and shower modules*

NZS 2038:1966 *Stainless steel urinals and flushing apparatus*

NZS 3331:1972 *Specification for quality of vitreous china sanitary appliances*

NZS 4121:1985 *Code of practice for design for access and use of buildings and facilities by disabled persons*

NZS 4616:1990 *Washbasins*

OSH publication

Planning the Workplace

3.16 Drainage of floors

Where any process renders floors liable to be wet to such an extent that the wet is capable of being removed by draining, then effective means for draining are required.

Where in-floor drains or pipes are used, they should be fitted with covers to ensure safe access.

Floors can be graded to drain off liquids.

REGULATION

4. Duties in respect of facilities at every place of work—(1) Every employer shall take all practicable steps to ensure—

(a) That facilities of the kinds described in subclause (2) of this regulation are provided at every place of work under the control of that employer; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are—

.....

(b) Hand-washing facilities:

.....

5. Duties in respect of facilities at certain places of work—(1) Every employer shall take all practicable steps to ensure—

(a) That facilities of any of the kinds described in subclause (2) of this regulation are provided for employees at every place of work under the control of that employer where the work is of such a nature that those facilities are required; and

(b) That any such facilities are suitable for the purpose for which they are to be used; and

(c) That any such facilities are provided in sufficient numbers; and

(d) That any such facilities are maintained in good order and condition; and

(e) That all employees have access to any such facilities in a way that is convenient to them.

(2) The facilities referred to in subclause (1) of this regulation are,—

(a) Where the work is of such a nature that employees are reasonably likely to need facilities for washing the body, such facilities:

.....

Regulation 7 describes tests for suitability and sufficiency of facilities. It is reproduced in section 3.4.

Legislation — Drainage of floors

ACT

6. Employers to ensure safety of employees— Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—

(i) In their place of work; or

(ii) Near their place of work and under the employer's control; and

.....

REGULATIONS.

Regulations 5 and 7 apply. They are reproduced in sections 1.10 and 1.4 respectively.

Legislation — Fire precautions

ACT

6. Employers to ensure safety of employees —

Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to —

.....

(e) Develop procedures for dealing with emergencies that may arise while employees are at work.

.....

12. Information for employees generally —

Every employer shall ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work has been given, in such a form and manner that the employee is reasonably likely to understand it, information about—

(a) What to do if an emergency arises while the employee is doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place; and

.....

Duties of Employers in relation to Training and Supervision

13. **Training and supervision** — Every employer shall take all practicable steps to ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work —

.....

(b) Is adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that the employee is or may be required to use or handle.

14. Employers to involve employees in development of health and safety procedures —

Every employer shall ensure that all employees have the opportunity to be fully involved in the development of procedures developed for the purpose of—

.....

(b) Dealing with or reacting to emergencies or imminent dangers.

.....

REGULATIONS.

Regulations 4 and 7 apply. They are reproduced in section 3.4.

FURTHER INFORMATION

Building Act 1991

3.17 Fire precautions

Employers should ensure all places of work comply with the requirements of the New Zealand Fire Service in matters pertaining to fire safety. Such matters will include the number, type and placement of fire fighting devices, alarms and evacuation systems and facilities.

Effective procedures and methods of control are required to minimise the risk of or effect of fire and ensure the safety of all persons in the vicinity.

In workplaces in which there are processes or materials which in the event of a fire are liable to burn with extreme rapidity, emit poisonous fumes or cause explosions, specific control precautions could be required.

Precautions could include the display of safety warning signs, for example those prohibiting smoking or the introduction of naked flames or any other source of ignition into those parts of the place of work.

The employer should ensure that employees are suitably trained in the use and operation of portable or other fire fighting equipment provided at the place of work.

All fire fighting equipment, apparatus and warning signs should be regularly checked and maintained.

Fire and emergency egress exits should be kept clear, be easily identified and always capable of being opened from within.

Section 1.9 of these guidelines provides further guidance on the development of emergency procedures.

FURTHER INFORMATION

Building Act 1991 (approved Building Code document F7 *Warning systems* and F8 *Signs* also C2 *Means of escape*)

Fire Safety and Evacuation of Buildings Regulations 1992

Standards

American Standard NFPA 12 (National Fire Protection Association)

AS 1668 *The use of mechanical ventilation and air conditioning in buildings*

AS/NZS 1319: *Safety signs for the occupational environment*

BS 5306: Part 4: 1986 *Specification for carbon dioxide systems*

BS 5378: Part 1: 1980 *Safety signs and colours* (amended 1987)

NZS 2139: 1967 *Specification for heat-actuated fire detectors* (amended 1968)

NZS 4231: 1985 *Specification for self-luminous exit signs*

NZS 4232: *Performance criteria for fire-resisting enclosures*

Part 1: 1988 *Internal and external fire door sets* (amended 1991)

NZS 4503: 1993 *Code of practice for the distribution installation and maintenance of hand-operated fire fighting equipment in*

buildings

NZS 4504: 1981 *Specification for fire hose reels* (amended 1991)

NZS 4506: 1978 *Specification for portable fire extinguishers of the water, foam and dry powder types* (amended 1979)

NZS 4508: 1979 *Specification for portable carbon dioxide fire extinguishers* (amended 1980,1991)

NZS 4551: 1974 *Specification for portable fire extinguishers of the halogenated hydrocarbon type*

NZS 4512: 1981 *Automatic fire alarm systems in buildings*

NZS 4514: 1989 *The installation of smoke alarms*

NZS 4541: 1987 *Automatic fire sprinkler systems*

NZS 4515: 1990 *Residential fire sprinkler systems*

NZS 4561: 1973 *Specification for manual fire alarm systems for use in buildings*

OSH publication

Planning the Workplace

Other publications

Safeguard Buyers' Guide to Workplace Health and Safety Products and Services

For advice

New Zealand Fire Service

3.18 Safe means of access and egress

Safe means of access should be provided to and in every place of work.

All means of access or egress should be of sound construction, and be properly maintained.

Safe access should enable all persons, including the disabled, to move conveniently and safely throughout the place of work in the performance of their normal duties. Marked aisles or walkways help in defining access ways.

Safe and rapid egress should be provided from the place of work in an emergency.

Access for the servicing and maintenance of plant, machinery and buildings should also be provided.

Floors should be even, slip-resistant and free from obstructions.

All doors or other means of access or egress to places of work should be kept unlocked, and clear from any obstruction while employees are actually working.

If for security reasons a door is required to be locked, it should be capable of being opened quickly from the inside without the use of a key, so as to allow quick and easy egress at all times.

Freezers, chillers, manholes and similar confined spaces should have effective means to ensure safe access and, in particular, egress.

Steps, stairs, and ramps should be provided where necessary with substantial handrails, and suitable means to prevent slipping.

Openings in floors and pits should be securely fenced or covered. Mezzanine floors also require fencing, including midrails and toeboards.

Legislation — Safe means of access and egress

ACT:

General Duties of Employers

6. Employers to ensure safety of employees — Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—
(a) Provide and maintain for employees a safe working environment; and

.....

(d) Ensure that while at work employees are not exposed to hazards arising out of the arrangement, disposal, manipulation, organisation, processing, storage, transport, working, or use of things—
(i) In their place of work; or
(ii) Near their place of work and under the employer's control; and
(e) Develop procedures for dealing with emergencies that may arise while employees are at work.

.....

REGULATION:

Regulations 4, 5, 6 and 7 apply. They are reproduced in sections 3.4, 3.10 and 3.7 respectively.

Doorways, hatchways and openings in the place of work used for hoisting or lowering goods or materials should have secure fencing and handholds.

Basements whose area exceeds 100m² require at least two safe means of access remotely separated from each other.

Skylights and low level windows in multi-storey buildings should be glazed with shatterproof material or guarded to prevent falls.

Where there is a likelihood of any person inadvertently walking into or striking glazing protective barriers should be provided.

Clear glazing should be suitably marked or patterned for easy identification and warning, and all doors clearly identified.

FURTHER INFORMATION

Building Act 1991 (approved Building Code document D1 *Access routes* also C2 *Means of escape* and F4 *Safety from falling*)
Disabled Persons Community Welfare Act 1975

Standards

AS/NZS 1657: 1992 *Fixed platforms, walkways, stairways, and ladders. Design, construction and installation*

EN115: 1983 *Safety rules for the construction and installation of escalators and passenger conveyors*

NZS 3609: 1978 *Specification for timber ladders*

NZS 4121: 1985 *Code of practice for design for access and use of buildings and facilities by disabled persons*

NZS 4223 *Glazing code* (3 parts)

NZS 5235 *Code of practice for safety in mechanical refrigeration* (2 parts)

OSH publications

Approved Code of Practice for Power-operated Elevated Work Platforms

Planning the Workplace

Safe Access

Safety in Confined Spaces

3.19 Signs, colour coding and aisle marking

Suitable safety warning signs should be provided in areas where there are hazards which are not readily apparent. The signs should be displayed in such positions as to be clearly visible to persons working in or entering the area. Areas that need warnings can include:

- Chemical hazards;
- Eye hazards;
- Falling object hazards;
- Foot hazards;
- Hot process hazards;
- Ionising hazards;
- Machinery hazards;

LEGISLATION - Signs, colour coding and aisle marking

ACT

6. Employers to ensure safety of employees—

Every employer shall take all practicable steps to ensure the safety of employees while at work; and in particular shall take all practicable steps to—
(a) Provide and maintain for employees a safe working environment;

.....

REGULATION

12. Information for employees generally —

Every employer shall ensure that every employee

- Noise hazards;
- Radiation hazards;
- Refrigeration hazards;
- Traffic hazards.

Other signs can be used to indicate designated areas or access and egress provisions, e.g. access for persons with disabilities.

The provision of signage is not in itself a means of controlling the hazard, rather it is one possible component of a control system.

Colour coding can be used to indicate hazardous and non-hazardous piping, designated areas, first aid and fire fighting facilities and equipment, traffic areas, process areas, storage areas, including specific colouring of containers and drums, etc.

Aisle marking can be used to indicate traffic and pedestrian ways, storage areas, process areas, fire fighting equipment, etc.

FURTHER INFORMATION

Building Act 1991 (approved Building Code document F8/AS1 Signs)

Standards

NZS 4121: *Disabled persons, for access to buildings*

NZS 5807: *Code of practice for industrial identification by colour, wording or other coding*

NZS 5807C *Poster*

NZS 5842: *Water safety signs*

NZS/AS 1319: *Safety signs for the occupational environment*

OSH publications

Safe Stacking and Storage — Guidelines for

Safety at Work — What Every Employee Should Know

who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work has been given, in such a form and manner that the employee is reasonably likely to understand it, information about—

(a) What to do if an emergency arises while the employee is doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place;

and

(b) All identified hazards to which the employee is or may be exposed while doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place, and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to the employee; and

(c) All identified hazards the employee will or may create while doing work of that kind, using plant of that kind, or dealing with substances of that kind, in that place, and the steps to be taken to minimise the likelihood that the hazards will be a cause or source of harm to other people; and

(d) Where all necessary safety clothing, devices, equipment, and materials are kept.

.....

3.20 Restriction on the employment of young persons

Hazardous work

No employer shall employ any person under the age of 15 in a place where goods are being manufactured for trade or sale, or any in any place where work is being carried out which is likely to cause harm to the health and safety of a person under 15.

Persons under the age of 15 may visit such workplaces if under the direct supervision of an adult or on a guided tour with the prior permission of the person in charge of the operation.

Night employment

Every employer shall take all practicable steps to ensure that no person who has not attained the age of 16 years is employed between the hours of 10 pm on any day and 6 am

LEGISLATION - Restriction on the employment of young persons

REGULATIONS

54. **Employment of young persons**—(1) Subject to subclause (2) of this regulation, every employer shall take all practicable steps to ensure that no employee under the age of 15 years works in any area at a place of work under the control of that employer—

- (a) At any time when goods are being prepared or manufactured for trade or sale in that area;
- (b) At any time when any construction work is being

carried out in that area:

- (c) At any time when any logging operation or tree-felling operation is being carried out in that area;
 - (d) At any time when any work is being carried out in that area that is likely to cause harm to the health and safety of a person under the age of 15 years.
- (2) Subclause (1) of this regulation does not apply to any area if an employee under the age of 15 years works at all times—
- (a) In any office in that area; or
 - (b) In any part of that area used only for selling goods or services.

58. Night employment—Every employer shall take all practicable steps to ensure that no employee under the age of 16 years works, at any place of work under the control of that employer, between the hours of 10 p.m. on any day and 6 a.m. on the next day, unless the employee's employment is in all respects in accordance with an approved code of practice relating to the employment of people under the age of 16 years between those hours in work of the kind the employee is doing.

LEGISLATION - Protective clothing and equipment

ACT

10. Significant hazards to employees to be minimised, and employees to be protected, where elimination and isolation impracticable

— (1) Where—

- (a) There is a significant hazard to employees at work; and
 - (b) Either—
 - (i) There are no practicable steps that may be taken to eliminate it; or
 - (ii) All practicable steps to eliminate it have been taken, but it has not been eliminated; and
 - (c) Either—
 - (i) There are no practicable steps that may be taken to isolate it from the employees; or
 - (ii) All practicable steps to isolate it from the employees have been taken, but it has not been isolated,— the employer shall take the steps set out in subsection (2) of this section.
- (2) The steps are —
- (a) To take all practicable steps to minimise the likelihood that the hazard will be a cause or source of harm to the employees; and
 - (b) To ensure that there is provided for, accessible to, and used by the employees suitable clothing and equipment to protect them from any harm that may be caused by or may arise out of the hazard; and
-

Duties of Employers in Relation to Training and Supervision

13. **Training and supervision** — Every employer

on the next day, unless the employee's employment is in accordance with an approved code of practice relating to work of that kind or description.

3.21 Protective clothing and equipment

Employers should provide for workers who are engaged in any process or activity that involves a risk of bodily injury to them, or a danger to their health, the protective clothing and equipment necessary to afford them reasonable protection against that risk or danger.

All protective clothing and equipment should comply with the relevant standard to ensure it provides the protection it is intended to (see below).

Protective clothing should be considered as the last option where engineering or management controls cannot completely eliminate or isolate the hazard at source. "Protective clothing" means any item of clothing worn to provide protection for the wearer against one or more of the following hazards:

- Harmful liquids, gases, vapours, dusts, powders, toxins, organisms and the like;
- Harmful radiation (both ionising and non-ionising);
- Extremes of temperature outside the normal ambient range;
- Impacts, vibrations, abrasions, cuts and the like;
- Poor visual conspicuity;
- Falling or slipping; or
- Electrical hazards.

Employees should be trained in the use of and maintenance of any protective clothing and equipment they should use.

Regular inspection and maintenance or replacement of defective clothing and equipment is necessary, and suitable storage will help ensure both hygiene and ready accessibility.

Protective clothing and equipment of a personal nature, such as hearing protection or footwear, should be provided on an individual basis.

When purchasing, regard needs to be given to individual fitting requirements. Bulk purchasing of, for instance, one model of earmuff may not ensure effective protection for all staff.

The effectiveness of protective clothing and equipment should be regularly assessed by monitoring employees' health and safety in relation to the hazard.

The employer should ensure that employees use the protective clothing, and equipment provided by them so often as the circumstances for which they are provided arise.

Where there are authorised visitors to places of work where conditions require the use of particular protective clothing or equipment, then employers are responsible for ensuring that such clothing and equipment is available to visitors to the same standard as for employees.

FURTHER INFORMATION

Fumigation Regulations 1967

Standards

AS 2865:1995 *Safe working in a confined space*

AS/NZS 1715:1994 *Selection, use and maintenance of respiratory protective devices*

AS/NZS 1716:1994 *Respiratory protective devices*

AS/NZS 1337:1992 *Eye protectors for industrial applications*

NZS 2264: 1970 and 5806: 1980 *Specifications for industrial safety helmets*

NZS 5845: 1989 *Specifications for industrial safety footwear*

NZS 5811: 1981 *Industrial safety belts and harnesses*

NZS 5812: 1982 *Industrial protective gloves*

NZS 5827: 1988 *Industrial overalls*

NZS 5839: 1986 *High visibility garments and accessories*

OSH publications

A Guide to Respirators and Breathing Apparatus

Safety in Confined Spaces

List of Graded Hearing Protectors, October 1996

Manual Handling Guidelines for the Workplace

Safety at Work — What Every Employee Should Know

Safety with Corrosive Chemicals

Other publications

Safeguard Buyers' Guide to Workplace Health and Safety Products and Services

3.22 Duties of designers, manufacturers, suppliers and sellers of plant

Designers of plant are required to take all practicable steps to ensure that plant and machinery they design, and that is to be used in a place of work, is designed so that it will not be a source of harm to any person during manufacture, use and maintenance. In the design process, consideration shall be given to applicable ergonomic principles especially in the placing of power controls.

Adequate information shall be given to the manufacturer concerning the use for which it was designed, installation, use, adjustment, maintenance, repair, cleaning, dismantling and any other relevant matters.

Manufacturers are required to ensure that if the plant is manufactured and tested to the design, used for the purpose for which it is designed, that its installation, use, adjustment, maintenance, repair, cleaning and dismantling will not cause harm to any person.

Manufacturers, suppliers and sellers of plant and machinery must provide clear and comprehensive information to any purchaser or hirer concerning the use for which it was designed, manufactured and tested, and information on its correct installation, use, adjustment, maintenance, dismantling, repair and any other relevant matters.

shall take all practicable steps to ensure that every employee who does work of any kind, or uses plant of any kind, or deals with a substance of any kind, in a place of work—

(a) Either—

(i) Has; or

(ii) Is so supervised, by a person who has such knowledge and experience of similar places, and work, plant, or substances of that kind, as to ensure that the employee's doing the work, using the plant, or dealing with the substance, is not likely to cause harm to the employee or other people; and

(b) Is adequately trained in the safe use of all plant, objects, substances, and protective clothing and equipment that the employee is or may be required to use or handle.

REGULATIONS

Regulations 68 and 69 impose duties on designers, manufacturers and sellers of plant. These regulations are reproduced below.

LEGISLATION - Duties of designers, manufacturers, and suppliers

REGULATIONS

PART VII

Duties of Designers, Manufacturers, and Suppliers

65. Sufficient compliance with certain duties in this Part—(1) The Secretary may, from time to time, grant recognition to any document containing requirements relating to the duties imposed by any of the following provisions of these regulations:

(a) Regulation 66 (1):

(b) Regulation 67 (1) or (2):

(c) Regulation 68 (1):

(d) Regulation 69 (1), (2), or (3).

(2) On granting recognition to a document under subclause (1) of this regulation, the Secretary shall publish a notice in the Gazette—

(a) Specifying the title of the document and the provision or provisions to which the requirements in the document relate; and

(b) Stating that the document has been granted recognition under subclause (1) of this regulation.

(3) The Secretary may, at any time, withdraw a recognition granted under subclause (1) of this regulation and, on doing so, shall publish a notice in the Gazette to that effect.

(4) It shall, for all purposes, be sufficient compliance with a provision to which subclause (1) of this regulation refers if the designer, manufacturer, or supplier, as the case may be, takes all practicable steps to comply with the requirements in a document—

(a) That contains requirements relating to the duties imposed by that provision; and

(b) That is the subject of a current recognition granted under subclause (1) of this regulation.

(5) For the purposes of subclause (4) (b) of this regulation, a document shall be deemed, in the absence of evidence to the contrary, to be the subject of a current recognition granted under subclause (1) of this regulation if its title is specified in a Gazette notice published under subclause (2) of this regulation and no Gazette notice notifying the withdrawal of that recognition has been published under subclause (3) of this regulation.

Plant

66. **Duties of designers of plant**—(1) Every designer of plant shall take all practicable steps—

(a) To design any plant in accordance with applicable ergonomic principles, including (without limitation) any such principles in relation to the placement of any power control; and

(b) To design any plant in such a way that, if the plant is—

(i) Manufactured in accordance with the design; and
(ii) Used for the purpose for which it was designed; and (iii) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

there is no likelihood that the plant will be a cause or source of harm to any person, or the likelihood that the plant will be such a cause or source of harm is minimised as far as is practicable.

(2) Every designer of plant shall take all practicable steps to ensure that every manufacturer of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the plant has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the manufacturer needs information from the designer in order to be able to carry out the manufacturer's duties under regulation 67 of these regulations.

67. **Duties of manufacturers and suppliers of plant**—(1) Every manufacturer and supplier of plant shall take all practicable steps to ensure that any plant manufactured by that manufacturer or supplied by that supplier is so designed that, if the plant is—

FURTHER INFORMATION

OSH publication

OSH Handbook for health and safety inspectors

3.23 Duties of designers, manufacturers, suppliers and sellers of protective clothing and equipment

Designers of protective clothing and equipment are required to take all practicable steps to ensure that it is designed to ergonomic principles and, if manufactured and properly used for the purpose for which it was designed, in accordance with the designer's instructions, it will give adequate protection from the harm against which it is intended to protect.

Adequate information shall be given to the manufacturer concerning the installation, use, adjustment, cleaning, maintenance, repairing and dismantling of clothing or equipment in accordance with the designer's instructions.

Manufacturers are required to ensure that every supplier and seller of protective clothing and equipment receives clear and comprehensive information concerning the use for which the clothing or equipment is designed; details on its installation, use, adjustment, cleaning, maintenance, repair and dismantling; and any other relevant matters.

Suppliers and sellers are required to ensure that every purchaser or hirer of protective clothing and equipment receives clear and comprehensive information concerning the use for which the clothing or equipment was designed; details on its installation, use, adjustment, cleaning, maintenance, repair, dismantling; and any other relevant matters.

Manufacturers, suppliers and sellers are required to ensure that clothing and equipment is designed, manufactured and tested so that if the clothing and equipment is used for the purpose for which it was designed and installed, used, adjusted, cleaned, maintained, repaired and dismantled according to the designer's instructions, it will give adequate protection from the harm against which it was intended to protect.

Every manufacturer, supplier and seller of protective clothing and equipment is to ensure that, to the extent that it is practicable, the clothing and equipment is permanently marked with clear and comprehensive relevant information concerning the use for which it has been designed; and how to install, use, adjust, clean, maintain, repair and dismantle the clothing and equipment in accordance with the designer's instructions.

FURTHER INFORMATION

OSH publication

OSH Handbook for health and safety inspectors

- (a) Manufactured in accordance with the design; and
- (b) Used for the purpose for which it was designed; and
- (c) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

there is no likelihood that the plant will be a cause or source of harm to any person, or the likelihood that the plant will be such a cause or source of harm is minimised as far as is practicable.

(2) Every manufacturer and supplier of plant shall take all practicable steps to ensure that any plant manufactured by that manufacturer or supplied by that supplier is so manufactured and tested that, if the plant is—

- (a) Used for the purpose for which it was designed; and
- (b) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

there is no likelihood that the plant will be a cause or source of harm to any person, or the likelihood that the plant will be such a cause or source of harm is minimised as far as is practicable.

(3) Every manufacturer of plant shall take all practicable steps to ensure that every supplier of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

- (a) The use for which the plant has been designed; and
- (b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the supplier needs information from the manufacturer in order to be able to carry out any duty of the supplier under this regulation.

(4) Every supplier of plant shall take all practicable steps to ensure that every purchaser or hirer of the plant receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

- (a) The use for which the plant has been designed; and
- (b) How to install, adjust, use, clean, maintain, repair, and dismantle the plant in accordance with the designer's instructions; and

(c) Any other matters about which the purchaser or hirer needs information from the supplier in order to be able to carry out any duty of the purchaser or hirer under the Act or these regulations.

Protective Clothing and Protective Equipment

68. Duties of designers of protective clothing and protective equipment — (1) Every designer of protective clothing or protective equipment shall take all practicable steps—

- (a) To design any protective clothing or protective equipment in accordance with applicable ergonomic principles; and
- (b) To design any protective clothing or protective equipment in such a way that, if the clothing or equipment is—

- (i) Manufactured in accordance with the design; and
 - (ii) Used for the purpose for which it was designed; and (iii) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—it will give adequate protection from the harm against which it is intended to protect.

(2) Every designer of protective clothing or protective

equipment shall take all practicable steps to ensure that every manufacturer of the protective clothing or equipment receives comprehensive and comprehensible information, including, where relevant, detailed instructions, about—

(a) The use for which the clothing or equipment has been designed; and

(b) How to install, adjust, use, clean, maintain, repair, and dismantle the clothing or equipment in accordance with the designer's instructions; and

(c) Any other matters about which the manufacturer needs information from the designer in order to be able to carry out the manufacturer's duties under regulation 69 of these regulations.

69. Duties of manufacturers and suppliers of protective clothing and protective equipment — (1)

Every manufacturer and supplier of protective clothing or protective equipment shall take all practicable steps to ensure that any such clothing and equipment manufactured by that manufacturer or supplied by that supplier is designed in such a way that, if the clothing or equipment is—

- (a) Manufactured in accordance with the design; and
- (b) Used for the purpose for which it was designed; and
- (c) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

it will give adequate protection from the harm against which it is intended to protect.

(2) Every manufacturer and supplier of protective clothing or protective equipment shall take all practicable steps to ensure that any such clothing or equipment manufactured by that manufacturer or supplied by that supplier is so manufactured and tested that, if the clothing or equipment is—

- (a) Used for the purpose for which it was designed; and
- (b) Installed, adjusted, used, cleaned, maintained, repaired, and dismantled in accordance with the designer's instructions,—

it will give adequate protection from the harm against which it is intended to protect.