National Occupational Health and Safety Commission

CONTROL OF MAJOR HAZARD FACILITIES

National Standard [NOHSC:1014(2002)]

National Code of Practice [NOHSC:2016(1996)]

OCTOBER 2002

The National Occupational Health and Safety Commission has declared a *National Standard for the Control of Major Hazard Facilities* and a *National Code of Practice for the Control of Major Hazard Facilities.*

National standards declared by the National Commission under s.38(1) of the *National Occupational Health and Safety Commission Act 1985* (Cwlth) are documents which prescribe preventive action to avert occupational deaths, injuries and diseases. Most national standards deal with the elimination, reduction or management of specific workplace hazards.

National codes of practice declared by the National Commission under s.38(1) of the National Occupational Health and Safety Commission Act are documents prepared for the purpose of advising employers and workers of acceptable ways of achieving national standards.

The expectation of the Commonwealth Government and the National Commission is that national standards and national codes of practice will be suitable for adoption by Commonwealth, State and Territory governments. Such action will increase uniformity in the regulation of occupational health and safety throughout Australia and contribute to the enhanced efficiency of the Australian economy.

It should be noted that National Commission documents are instruments of an advisory character, except where a law, other than the National Occupational Health and Safety Commission Act, or an instrument made under such a law, makes them mandatory. The application of any National Commission document by any particular State or Territory is the prerogative of that State or Territory.

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FOREWORD

The National Occupational Health and Safety Commission is a tripartite body established by the Commonwealth Government to develop, facilitate and implement a unified national approach to occupational health and safety in Australia.

Through its major focus on national occupational health and safety (OHS) standards, the National Commission aims to:

- achieve best practice in OHS regulation through national coordination of development, implementation and evaluation of national OHS standards;
- provide an effective national tripartite forum to address OHS issues of national importance;
- provide the basis for targeting OHS activities by producing statistical reports using existing information systems and identifying and developing additional cost effective data sources;
- achieve OHS research outcomes supporting the development of national standards; and
- contribute to industry performance through independent assessment of industrial, agricultural and veterinary chemicals for their occupational health, public health and environmental effects.

The National Commission comprises representatives of the Commonwealth, State and Territory governments as well as the peak employee and employer bodies - the Australian Council of Trade Unions and the Australian Chamber of Commerce and Industry.

Consistent with the National Commission's philosophy of consultation, tripartite standing committees have been established to deal with issues relating to standards development and research. Expert groups and reference groups may be established to provide advice to the standing committees on those issues with which the National Commission is concerned.

PREFACE

In mid 1991 the National Occupational Health and Safety Commission endorsed the development of a *National Standard for the Control of Major Hazard Facilities.* The term *major hazard facility,* as used in this national standard, is intended to cover all aspects of a facility, including those operations which may be spread over a number of different sites and are under the management of the same Operator.

The development of this national standard drew upon current international and national initiatives on the control of major hazard facilities, ensuring consistency with those existing initiatives. In particular, the national standard has been drafted to ensure consistency with the following international approaches:

- The International Labour Organisation's *Convention for the Prevention of Major Industrial Accidents* (International Labour Conference, 80th Session, Geneva, 2 June 1993). The Commonwealth Government intends to seek agreement from the States and Territories to the ratification of this international convention.
- The Council of the European Communities' *Draft Council Directive on the Control of Major Accident Hazards Involving Dangerous Substances.* This document supersedes the original Council Directive (82/501/EEC) on *Major Accident Hazards of Certain Industrial Activities,* which was commonly known as the *EC Seveso Directive.*

The need for a national standard on the control of major hazard facilities in Australia is underscored by major accidents, such as the Seven Hills chemical plant fire in Sydney in December 1989, the large LP gas fire at St Peters in Sydney in April 1990 and the Coode Island fire in Victoria in August 1991 and more recently the Longford Gas Plant in 1998.

Current legislation relating to the control of major hazard facilities is designed to protect employees, the community and the environment from the hazards associated with normal industrial operations. The operation of a major hazard facility, however, can create hazards of a scale and type which are not necessarily covered by this existing legislation. Consequently, there is a need for controls designed to eliminate the underlying and immediate causes of major accidents and limit their consequences.

A number of different public authorities, such as those responsible for planning, environmental protection, local government, dangerous goods, hazardous substances, occupational health and safety, public health and emergency services, administer various legislation relating to major hazard facilities. The importance of a consistent national standard is highlighted by this administrative complexity.

This national standard is designed to be implemented by a single public authority with administrative responsibility for major hazard facilities. The standard is intended to enable one safety report to be produced to fulfil the requirements of any public authority involved. To ensure the effective implementation and administration of this national standard, it is expected that appropriate consultation will occur between the various public authorities within each State, Territory and the Commonwealth. While a number of public authorities will be involved, there should be only one single lead authority responsible for the coordination and administration of the standard.

In relation to planning and land use, this national standard acknowledges that planning authorities have a responsibility:

- to provide controls to ensure adequate separation on a long term basis between major hazard facilities and surrounding land uses;
- to consult with relevant community groups; and

- for planning of new major hazard facilities, new developments around existing establishments and modifications to existing major hazard facilities.

In addition, planning authorities have a key role in the management of off-site risk from major hazard facilities.

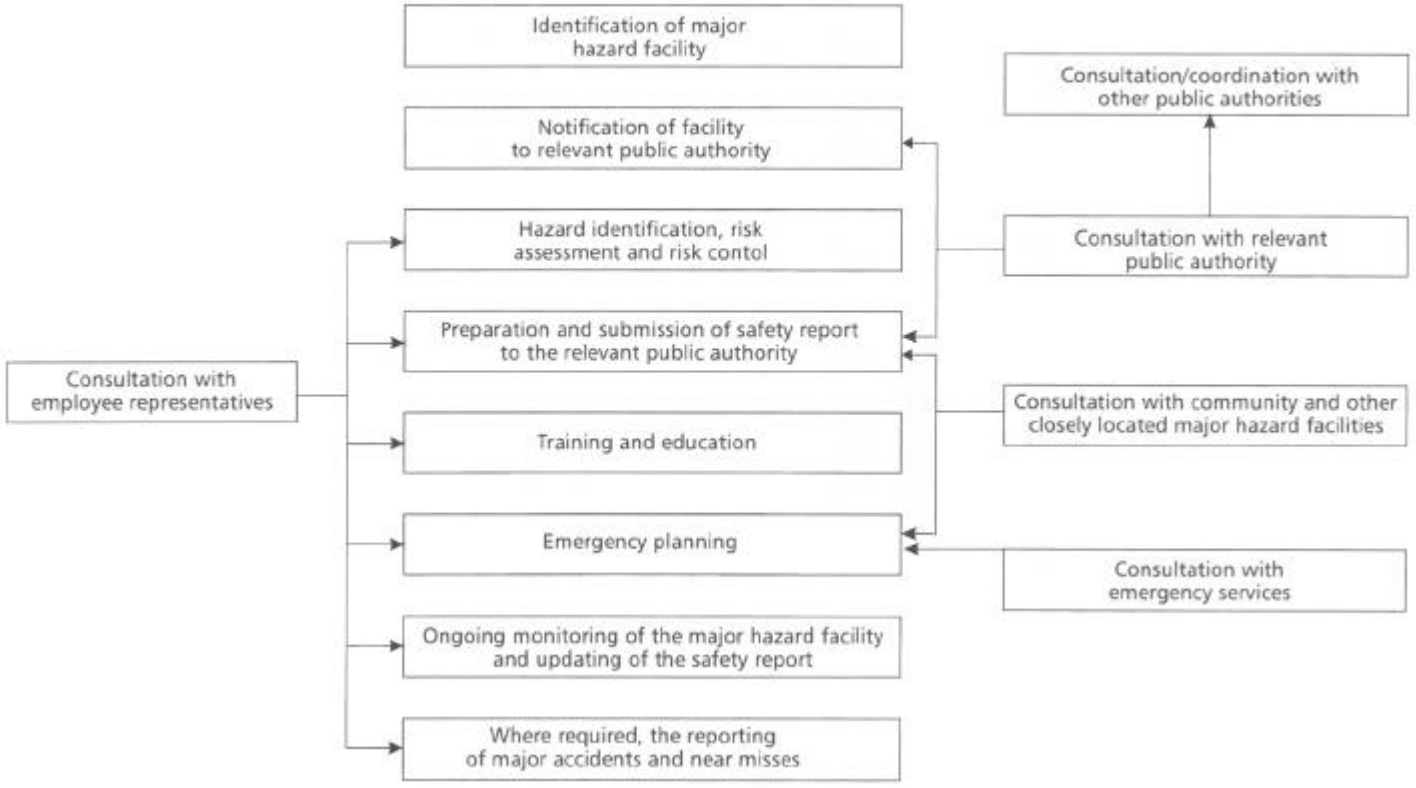
Ongoing consultation is required throughout the life of a major hazard facility to ensure that on-site and off-site safety is managed jointly with other relevant authorities. The siting of major hazard facilities is not covered in this national standard, and other specific approvals may be required.

Throughout the administration of this national standard, regular consultation and dialogue between the Operator, the administering public authority and other interested parties, including employees and employee representatives, is expected. This will assist in ensuring that the objectives of the national standard are met, especially with regard to the submission of an adequate safety report. The implementation and administration of this national standard has been illustrated in Figure 1, provided at the end of this preface. To facilitate the implementation of this national standard, a supporting code of practice for the national standard has been developed by the National Occupational Health and Safety Commission.

Compliance with this national standard does not exempt the Operator of a major hazard facility from other legislative requirements relating to the safety of a major hazard facility or its surroundings.

Figure 1

IMPLEMENTATION AND ADMINISTRATION OF THE NATIONAL STANDARD FOR THE CONTROL OF MAJOR HAZARD FACILITIES



NOTES ON FIGURE 1

1. The safety report submitted to the relevant public authority shall:

(a) identify the nature and scale of the use of any materials listed in Schedule 1: *The Identification of a Major Hazard Facility;*

(b) identify the type, relative likelihood and consequences of major accidents that might occur;

(c) give details of the safety management system for the major hazard facility, including the arrangements:

(i) for the safe operation of the major hazard facility, including the control of serious deviations that could lead to a major accident and emergency procedures at the site,

(ii) made to ensure that the means for the safe operation of the major hazard facility are properly designed, constructed, tested, operated, inspected and maintained, and

(iii) for providing assurance, in accordance with sub-section 7.10 of the national standard; and

(d) provide justification as to the adequacy of the measures taken to ensure the safety of the facility.

2. Consultation with employees and employee representatives occurs at the following stages:

(a) hazard identification, risk assessment and risk control, including the updating of risk assessments and risk controls;

(b) the establishment, implementation and maintenance of the safety management system;

(c) preparation and updating of safety reports and emergency plans;

(d) preparation of reports on major accidents and near misses; and

(e) induction, and the provision and updating of training and education.

NATIONAL STANDARD FOR THE CONTROL OF MAJOR HAZARD FACILITIES [NOHSC:1014(2002)]

1. TITLE (CITATION)

1.1 This national standard may be cited as the *National Standard for the Control of Major Hazard Facilities* [NOHSC:1014(2002)].

2. OBJECTIVE

2.1 The objective of this national standard is to prevent major accidents and near misses, and to minimise the effects of any major accidents and near misses by requiring Operators to:

(a) identify and assess all hazards and implement control measures to reduce the likelihood and effects of a major accident;

(b) provide information to the relevant public authority, and the community, including other closely located facilities, regarding the nature of hazards at a major hazard facility and emergency procedures in the event of a major accident;

(c) report and investigate major accidents and near misses, and take appropriate corrective action; and

(d) record and discuss the lessons learnt and the analysis of major accidents and near misses with employees and employee representatives.

3. SCOPE AND APPLICATION

3.1 This standard applies to any facility which is classifiable as a major hazard facility in accordance with Chapter 5 of this national standard.

4. INTERPRETATION (DEFINITIONS)

4.1 In this national standard:

'Emergency services' shall be as defined by each State, Territory or Commonwealth jurisdiction, with the intention of including all organisations with functional jurisdiction over emergency response.

'Employee representative' includes an employee member of a health and safety committee where established in the workplace, or person elected to represent a group of employees on health and safety matters.

'Hazard' means a situation or an intrinsic property with the potential to cause harm to people, property or the built or natural environment.

'Major accident' means a sudden occurrence (including in particular a major emission, loss of containment, fire, explosion or release of energy) leading to serious danger or harm to people, property or the built or natural environment, whether immediate or delayed.

'Major hazard facility' means the whole area under the control of an Operator:

(a) upon or within which an activity takes place involving or likely to involve the processing, production, disposal, handling, use or storage, either temporarily or permanently, of a quantity of materials which exceeds the threshold or aggregate quantity, as determined in accordance with Schedule 1: *The Identification of a Major Hazard Facility*; or

(b) that the relevant public authority classifies, in accordance with section 5.6 of this national standard, to be a major hazard facility;

and also includes all areas, such as associated production equipment, permanent or in-transit storage, ancillary equipment or processes, marshalling yards, docks, piers, jetties, depots, pipelines or similar structures whether floating or not.

'Modification' to a major hazard facility includes any:

(a) change to plant, processes or quantities of materials listed in Schedule 1;

(b) introduction of new plant, processes, materials or operating procedures; or

(c) change to the safety management system, in particular organisational change;

which significantly alters the risk associated with the major hazard facility.

'Near miss' means any sudden event which, but for mitigation effects, actions or systems, could have escalated to a major accident.

'Operator' means an employer, occupier or person who has overall management or control of a major hazard facility.

Note. some States or Territories may need to use the term 'Occupier' instead of Operator.

'Practicable' means 'practicable' in Victoria, Queensland, Western Australia and the Northern Territory, 'reasonably practicable' in New South Wales, South Australia, the Australian Capital Territory and Commonwealth jurisdiction and 'a reasonable precaution' in Tasmania, as may be contained in relevant occupational health and safety statutes.

'Relevant public authority' shall be defined by each State, Territory or Commonwealth jurisdiction, with the intention that this be a single public authority with the administrative responsibility for the control of major hazard facilities.

'Risk' means the likelihood of harm occurring from a hazard.

'Safety management system' means the comprehensive integrated system for managing safety at a major hazard facility and which sets out:

(a) the safety objectives;

(b) the systems and procedures by which these are to be achieved;

(c) the performance standards which are to be met; and

(d) the means by which adherence to these standards is to be maintained.

'Safety report' means a written presentation of the technical, management and operational information covering the hazards and risks of a major hazard facility and their control, and which provides justification for the measures taken to ensure the safe operation of the facility.

'Threshold quantity' means that quantity, prescribed in Schedule 1 to this national standard, of a material which, if exceeded, identifies a major hazard facility.

5. IDENTIFICATION AND CLASSIFICATION OF A MAJOR HAZARD FACILITY

5.1 A person, including an employer or Occupier, who operates or intends to operate a facility shall notify the relevant public authority if any material(s) listed in Schedule 1: *The Identification of a Major Hazard Facility* is present, or will be present at the facility in a quantity greater than 10% of the corresponding threshold or aggregate quantity.

5.2 The Person shall notify the relevant public authority of the following information about the facility:

(a) the name or trade name and the address or location of the facility;

(b) the address or location of the registered place of the business;

(c) the name of the director or person in charge of the facility;

(d) the reason for the notification, that is:

(i) a new facility,

(ii) an existing facility, or

(iii) a change to an existing facility casues it to become a major hazard facility;

(e) for each material which is listed in Schedule 1, and which is likely to be present at the facility in a quantity greater than 2% of the corresponding threshold quantity, the name of the material and sufficient information to clearly identify it, including, as appropriate, the chemical name, UN number, Chemical Abstract Service (CAS) number, other names and the molecular formula;

(f) the maximum quantity of each material, referred to in clause 5.2(e) above, which is present or likely to be present at the facility;

(g) information on the aggregate quantity of materials, according to the calculation of the aggregation rule, as provided at sub-section S1.1(b) in Schedule 1; and

(h) a brief description of the nature of the facility, including general site activities and maximum production rate of materials listed in Schedule 1.

5.3 The person shall supply, subsequent to notification of the major hazard facility and at the request of the relevant public authority, any additional relevant information.

5.4 The person shall notify the relevant public authority in accordance with the following provisions:

(a) for a proposed new facility, as soon as possible and at least six months before construction commences;

(b) for an existing facility, including a facility under construction at the implementation of this national standard, as soon as possible and within three months of the implementation of this national standard by the relevant public authority; and

(c) for a change to an existing facility, as soon as possible and before implementing the modification.

5.5 The facility shall be classified as a major hazard facility where any material(s) listed in Schedule 1 is present, or will be present, at a facility in a quantity greater than the corresponding threshold or aggregate quantity.

5.6 A facility may be classified as a major hazard facility where:

(a) any material(s) listed in Schedule 1 is present between 10% and 100% of the corresponding threshold or aggregate quantity and, after consultation with the Operator, the relevant public authority can classify the facility as a major hazard facility on the basis of a review of the following features of the facility:

(i) properties of materials at the facility, including extreme toxicity or environmental hazard, toxic combustion products, toxic hydrolysis products, toxic volatile materials, synergistic effects,

(ii) process and storage conditions, including pressure above atmospheric pressure, temperature above ambient temperature, variety of dangerous goods, container size, level of technology,

(iii) organisational issues, including adequacy of existing hazard controls, organisational quality, major accident and near miss preparedness, and

(iv) off-site issues, including surrounding land use, pipelines, environmental sensitivity, potential for external threat; or

(b) in the opinion of the relevant public authority, an activity within a facility has the potential to cause a major accident. The relevant public authority can classify the facility as a major hazard facility, provided that, in the view of the relevant public authority, the potential arises from:

(i) radioactive and/or biological material(s) not referred to in Schedule 1 of this national standard, or

(ii) any other material(s) not listed in Schedule 1 of this national standard.

5.7 Where the Operator of a major hazard facility intends to permanently close a major hazard facility, or alter a major hazard facility so that it will no longer be a major hazard facility, the Operator shall notify the relevant public authority prior to the closure or alteration.

6. HAZARD IDENTIFICATION, ASSESSMENT AND CONTROL OF RISKS

6.1 Where a facility has been classified as a major hazard facility, the Operator of a major hazard facility shall carry out and document a systematic risk assessment which so far as practicable:

(a) identifies all hazards and all events which may lead to a major accident;

(b) identifies the type, likelihood and consequences of major accidents that may occur; and

(c) assesses the risks posed by those hazards and events.

6.2 The Operator of a major hazard facility shall, so far as practicable, minimise the risk associated with the major hazard facility by:

(a) eliminating or minimising hazards at the major hazard facility;

(b) implementing technical measures to minimise the likelihood of a major accident;

(c) implementing measures to limit the consequences of a major accident; and

(d) protecting people, property, and the built and natural environment from the effects of a major accident by establishing emergency plans and procedures.

6.3 The Operator of a major hazard facility shall establish, implement and maintain a documented safety management system for the major hazard facility.

6.4 The Operator shall review and update, where necessary, the risk assessment and risk controls for the major hazard facility, as required in sections 6.1 and 6.2. These reviews and updates shall be carried out at appropriate intervals not exceeding five years, and prior to any:

(a) change to plant, processes, operating procedures or quantity of materials listed in Schedule 1;

(b) introduction of new plant, processes or operating procedures; or

(c) change to the safety management system;

which significantly alters the risk associated with the major hazard facility.

6.5 The Operator of a major hazard facility, in carrying out duties under sections 6.1- 6.4 shall consult with employees and employee representatives through cooperative mechanisms.

7. SAFETY REPORTS

7.1 An Operator of a major hazard facility shall provide the relevant public authority with a safety report.

7.2 The safety report shall be provided:

(a) for a proposed new major hazard facility, as soon as possible and prior to commencement of operations; and

(b) for an existing major hazard facility, including those facilities under construction at the commencement of this national standard, as soon as possible and within eighteen months of the implementation of this national standard by the relevant public authority;

although the relevant public authority may vary the time within which a safety report is required.

7.3 If the relevant public authority varies the time for completion of the safety report, the Operator shall provide a timetable for the completion of the safety report.

7.4 The safety report shall:

(a) identify the nature and scale of the use of any materials listed in Schedule 1;

(b) identify the type, relative likelihood and consequences of major accidents that might occur;

(c) give details of the safety management system for the major hazard facility, including the arrangements:

(i) for ensuring the safe operation of the major hazard facility, including the control of serious deviations that could lead to a major accident and emergency procedures at the site,

(ii) for ensuring that the means for the safe operation of the major hazard facility are properly designed, constructed, tested, operated, inspected and maintained, and

(iii) for providing assurance, in accordance with section 7.10 of this national standard; and

(d) provide justifications as to the adequacy of the measures taken to ensure the safe operation of the facility.

7.5 At the request of the relevant public authority, Operators of major hazard facilities which are located close together shall prepare coordinated safety reports. The Operators shall exchange such information as is necessary to take account of a major accident hazard in their accident prevention policies, safety management systems and safety reports.

7.6 The safety report shall be prepared and updated in consultation with employees and employee representatives at the major hazard facility, through cooperative mechanisms.

7.7 In the preparation of the safety report, the Operator shall consult, where appropriate, with the community surrounding the major hazard facility, including other closely located facilities, about the issues associated with public and environmental health and safety.

7.8 The safety report shall be revised, updated, amended and provided to the relevant public authority:

(a) prior to a modification which significantly alters the risk associated with the major hazard facility;

(b) when developments in technical knowledge or in the assessment of hazards and risks make this appropriate;

(c) at least every five years; or

(d) at the specific request of the relevant public authority.

7.9 The review of the safety report shall take into account changes to:

(a) the hazards and risks;

(b) the safety management system;

(c) technology;

(d) training programs;

(e) work procedures; and

(f) adjacent land use.

7.10 The Operator shall include a system of assurance in the safety report to verify the adequacy of the safety management system, its implementation and continued compliance. This system of assurance shall be designed in consultation with the relevant public authority.

8. INDUCTION, TRAINING AND EDUCATION

8.1 The Operator of a major hazard facility shall, consistent with National Training Board guidelines, and appropriate to the hazards and risks at the facility, develop enterprise level occupational health and safety competency standards. These competency standards shall include:

(a) the practices and control procedures for major accident prevention;

(b) emergency procedures to be followed in the event of a major accident; and

(c) responsibilities related to the safety management system at the major hazard facility.

8.2 The Operator shall provide all persons at the major hazard facility (including employees, contractors and visitors) with induction, education and continuing training, appropriate to the role and responsibilities of the person, to ensure that the competency standards are met.

8.3 The Operator shall provide education and training at appropriate intervals and, in any case, before:

(a) the implementation of any modification to plant, processes, operating procedures or quantity of materials listed in Schedule 1;

(b) the introduction of new plant, wherever possible, processes, materials or operating procedures; or

(c) any change to the safety management system;

which significantly alters the risk associated with the major hazard facility.

8.4 The Operator shall ensure that induction, training and education is:

(a) monitored, reviewed, updated and recorded when appropriate; and

(b) carried out in consultation with employees and employee representatives, through cooperative mechanisms.

9. EMERGENCY PLANNING

9.1 An Operator of a major hazard facility shall:

(a) ensure that all persons on-site have appropriate training in the implementation of the emergency plans;

(b) in consultation with emergency services, formulate and agree to an off-site emergency plan for action outside the facility;

(c) ensure that an on-site emergency plan for action inside the facility is established and maintained in conjunction with emergency services; and

(d) consult with the community, including other closely located facilities, during the preparation of off-site emergency plans, where appropriate.

9.2 The on-site and off-site emergency plans shall be complementary and shall be aimed at:

(a) containing and controlling a major accident, so as to minimise the effects on people, property and the built and natural environment; and

(b) implementing measures to protect people, property and the built and natural environment in the event of a major accident.

9.3 The Operator of a major hazard facility shall prepare both the on-site and off-site emergency plans:

(a) for new major hazard facilities, at least three months before the commencement of operations; and

(b) for existing major hazard facilities, within three months of the date of implementation of this national standard by the relevant public authority.

9.4 On-site and off-site emergency plans shall contain at least the information in Schedule 2.

9.5 The Operator shall update the on-site and off-site emergency plans and the information provided to emergency services:

(a) in conjunction with the updating of the safety report;

(b) when a major accident, near miss or an effectiveness test indicates the need to do so; or

(c) at the specific request of the relevant public authority.

9.6 The Operator shall ensure that updating of the on-site and off-site emergency plans take into account all relevant alterations to the major hazard facility. Updating of the off-site emergency plan shall also take changes to surrounding land use into account.

9.7 The Operator shall ensure that the on-site and off-site emergency plans are tested, evaluated and updated at intervals necessary to ensure the effectiveness of the plans.

9.8 The Operator shall ensure that the on-site and off-site emergency plans are prepared and updated in consultation with employees and employee representatives, through cooperative mechanisms, and with emergency services.

9.9 The Operator shall ensure that the on-site and off-site emergency plans are readily accessible to employees and employee representatives.

10. REPORTING OF MAJOR ACCIDENTS AND NEAR MISSES

10.1 The Operator shall provide written notification to the relevant public authority of any major accident at the major hazard facility. This notification shall be provided within 24 hours of the major accident.

10.2 The Operator shall, within a period of time specified by the relevant public authority, thoroughly investigate any major accident at the major hazard facility, and provide a written report to the relevant public authority.

10.3 The written report shall include at least the following information about the major accident:

(a) the nature and timing of the events that occurred;

(b) the materials involved, and the amounts of each;

(c) the cause of the major accident;

(d) the effects of the major accident on people, property and the built and natural environment;

(e) what clean-up methods were used;

(f) the effectiveness of emergency plans and procedures; and

(g) actions which will be taken to prevent similar occurrences.

10.4 The Operator shall report to the relevant public authority, in accordance with the procedure for major accidents, any near miss which meets or exceeds defined criteria agreed to with the relevant public authority.

10.5 The Operator shall record and discuss the lessons learnt and the analyses of major accidents and near misses with employees and employee representatives.

10.6 The Operator shall consult with employees and employee representatives at a major hazard facility in the preparation of reports on major accidents and near misses, through cooperative mechanisms.

10.7 The Operator shall ensure employees and employee representatives have access to reports on major accidents and near misses.

10.8 The Operator of a major hazard facility shall keep a copy of every major accident report for the lifetime of the facility.

11. RESPONSIBILITIES OF EMPLOYEES AND EMPLOYEE REPRESENTATIVES

11.1 Employees and employee representatives at a major hazard facility, including contractors and their employees, shall, to the extent to which they are capable, that is, within their competency and skills:

(a) comply with all procedures and practices relating to the prevention and control of major accidents within the major hazard facility;

(b) comply with all emergency procedures should a major accident or a near miss occur;

(c) report promptly to the Operator any matters of which they are aware that may affect the Operator's compliance with the provisions of this national standard;

(d) within the scope of their job, and without being placed at any disadvantage, take corrective action and if necessary interrupt the operation of a major hazard facility where, on the basis of their training and experience, they have reasonable justification to believe that there is an imminent danger of a major accident, and notify their supervisor or raise the alarm, as appropriate, before or as soon as possible after taking such action; and

(e) discuss with the operator any potential hazards they consider capable of generating a major accident and have the right to notify the relevant public authority of those hazards.

12. COMMUNITY INFORMATION

12.1 The Operator, in consultation with the relevant public authority and the community, including other closely located facilities, shall ensure that:

(a) information on safety measures and the appropriate response in the case of a major accident is provided to the community, including other closely located facilities, without their having to request it;

(b) updated information is provided at appropriate intervals; and

(c) warning is given as early as possible in the case of a major accident.

12.2 The Operator shall provide the community, including other closely located facilities, with relevant information on significant site changes to a major hazard facility, including amendments to emergency response plans and safety measures, before those changes are made.

12.3 The information provided to the community, including other closely located facilities, shall contain at least the following information:

(a) name and location of the major hazard facility;

(b) the name, title and telephone number of the contact person from whom further information can be obtained;

(c) an explanation, in plain English, of the activities undertaken at the major hazard facility, including the hazardous materials used or produced there;

(d) general information about the nature of the hazards related to the facility, including their potential effects on people, property and the built and natural environment;

(e) means by which people likely to be affected by a major accident will be warned and kept informed in the event of a major accident;

(f) the actions people should take in the event of a major accident; and

(g) relevant information about the off-site emergency plans.

13. SECURITY

13.1 The Operator of a major hazard facility shall, as appropriate to the risk, take all practicable precautions to protect the major hazard facility from action by an unauthorised person.

13.2 Security at the major hazard facility shall be applied to all elements which affect the safe operation of the facility, including document, computer hardware and software and boundary security.

13.3 The Operator shall provide a system to control access of all persons to the major hazard facility at all times.

14. CONFIDENTIALITY OF INFORMATION

14.1 The relevant public authority shall protect confidential information provided by the Operator of a major hazard facility, so long as this does not compromise the safety of people, property or the built or natural environment.

14.2 Confidential information determined by the relevant public authority to be related to national security shall be exempt from disclosure.

15. ROLE OF THE RELEVANT PUBLIC AUTHORITY

15.1 The role of the relevant public authority is to administer the *National Standard for the Control of Major Hazard Facilities* [NOHSC:1014(2002)]. This includes:

(a) receiving notification from Operators;

(b) classifying a major hazard facility in accordance with this national standard;

(c) receiving safety reports and giving assurances to government that an appropriate level of safety applies, so long as the provisions are properly implemented;

(d) consulting and coordinating with other relevant public agencies and consulting with Operators and, where appropriate, employees and employee representatives;

(e) receiving and reviewing reports of major accidents and near misses;

(f) receiving assurances, as referred to in section 7.10; and

(g) ensuring an appeal mechanism is provided for Operators, employees and employee representatives aggrieved by a decision of the relevant public authority in relation to the provisions of this national standard.

15.2 The relevant public authority may give direction to the Operator of a major hazard facility, for the purpose of ensuring the safety of people, property, the built or natural environment, and any occupants in or on the facility.

15.3 Where a major hazard facility meets existing legislative requirements which match or exceed the requirements of this national standard, the relevant public authority should accept compliance with those existing requirements as meeting the requirements of this national standard.

SCHEDULE 1: IDENTIFICATION OF A MAJOR HAZARD FACILITY

S1.1 A major hazard facility is an area where an activity takes place involving any of the materials listed in Table 1 or 2, following, and where the:

(a) amount of any material present or likely to be present exceeds the corresponding threshold quantity; or

(b) following aggregation rule exceeds 1:

$$\frac{qx}{Qx} + \frac{qy}{Qy} + ... + \frac{qn}{Qn}$$

Where:

q_x, q_y ..... q_n is the total amount of each material present or likely to be present in an isolated amount greater than 2% of the corresponding threshold quantity;

Q_x, Q_y ..... Q_n is the threshold quantity specified in Table 1 or 2 for the particular material.

S1.2 For the purposes of section S1.1, above, the maximum quantity present or likely to be present at the facility must include the:

(a) maximum amount of the material normally present in process vessels and interconnecting piping systems;

(b) maximum capacity of storage tanks and vessels;

(c) maximum quantity of the material that is likely to be present in package storage areas; and

(d) maximum quantity of materials contained in pipelines outside process areas or the maximum quantity of material that could escape from a pipeline in the event of its catastrophic failure.

Isolated quantities of materials which do not exceed 2% of the corresponding threshold quantity need not be included in the estimation of the maximum quantity of a material.

S1.3 The following rules apply to the determination of threshold quantities from Table 1 and Table 2.

(a) If the material is specifically listed in Table 1, the threshold quantity shall be determined from Table 1;

(b) If a material is not specifically listed in Table 1, the appropriate threshold quantity shall be determined from Table 2 for the description which best applies to the material; and

(c) If more than one of the descriptions in Table 2 applies to a material, the description with the lowest threshold quantity shall be used.

The thresholds used in this schedule are based on the criteria set by the United Nations for the classification of dangerous goods. It is acknowledged that this method has some limitations. However, since this system is used nationally and internationally in dangerous goods classification it is regarded as the most appropriate.

The National Occupational Health and Safety Commission will undertake regular reviews of Tables 1 and 2 and will consider alternative approaches, taking into account changes to the United Nations dangerous goods classification system, changes to the European Commission's Council Directive on the Control of Major Accident Hazards Involving Dangerous Substances, and Australian experience in the application of Schedule 1.

TABLE 1

MATERIAL	UN Nos included under name	Threshold Quantity (tonnes)
ACETONE CYANOHYDRIN	1541	20
ACETYLENE	1001	50
ACROLEIN	1092	200
ACRYLONITRILE	1093	200
ALLYL ALCOHOL	1098	20
ALLYLAMINE	2334	200
AMMONIA, ANHYDROUS, LIQUEFIED or AMMONIA SOLUTIONS, relative density less than 0.880 at 15°C in water, with more than 50% ammonia	1005	200
AMMONIUM NITRATE FERTILIZERS	2067 2068 2069 2070	5000
AMMONIUM NITRATE, with not more than 0.2% combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance	1942	2500
ARSENIC PENTOXIDE, Arsenic (V) Acid and other salts	1559	10
ARSENIC TRIOXIDE, Arsenious (III) Acid and other salts	1561	0.10
ARSINE	2188	0.01
BROMINE or BROMINE SOLUTIONS	1744	100

MATERIAL	UN Nos included under name	Threshold Quantity (tonnes)
CARBON DISULFIDE	1131	200
CHLORINE	1017	25
DIOXINS		0.10
ETHYL NITRATE	---	50
ETHYLENE DIBROMIDE	1605	50
ETHYLENE OXIDE	1040	50
ETHYLENEIMINE	1185	50
FLUORINE	1045	25
FORMALDEHYDE	1198 2209	50
HYDROFLUORIC ACID SOLUTION (greater than 50%)	1790	50
HYDROGEN	1049	50
HYDROGEN CHLORIDE		
- Anhydrous	1050	250
- Refrigerated liquid	2186	250
HYDROGEN CYANIDE	1051 1614	20
HYDROGEN FLUORIDE	1052	50
HYDROGEN SULFIDE	1053	50
LP GASES		
	1011 1012 1075 1978 1077	200
METHYL BROMIDE	1062	200
METHANE, or NATURAL GAS	1971 1972	200

MATERIAL	UN Nos included under name	Threshold Quantity (tonnes)
METHYL ISOCYANATE	2480	0.15
OXIDES OF NITROGEN, including nitrous oxide, nitrogen dioxide and nitrogen trioxide	1067 1070 1660 1975 2201 2421	50
OXYGEN	1072 1073	2000
PHOSGENE	1076	0.75
PROPYLENEIMINE	1921	200
PROPYLENE OXIDE	1280	50
SODIUM CHLORATE, solid	1495	200
SULFURIC ANHYDRIDE (Alt: SULFUR TRIOXIDE)	1829	75
SULFUR DICHLORIDE	1828	1
SULFUR DIOXIDE, LIQUEFIED	1079	200
TITANIUM TETRACHLORIDE	1838	500
TOLUENE DIISOCYANATE	2078	200

Notes to Table 1

(a) The UN number listed against the named material is given for information only. It does not restrict the meaning of the name, which also applies to material which fall outside the UN number, for example, because they are too dangerous to transport or are part of mixtures covered by another UN number. However, any material which is covered by the listed UN numbers must be included in the quantity of the material named.

(b) If a scheduled material is part of a mixture, the equivalent quantity should be calculated as shown in Example 2 in Chapter 16 of the *National Code of Practice for the Control of Major Hazard Facilities* [NOHSC:2016(1996)][1].

(c) Where a substance is listed in Table 1, the corresponding threshold is used to determine the classification of a MHF. Where the substance is not listed, the appropriate dangerous goods class threshold in Table 2 is to be used in any determination.

TABLE 2

MATERIAL	DESCRIPTION	THRESHOLD QUANTITY (tonnes)
Explosive Materials	• Explosive of Class 1.1A	10
	• All other Explosives of Class 1.1	50
	• Explosives of Class 1.2	200
	• Explosives of Class 1.3	200
Compressed and Liquefied Gases	• Compressed or liquefied gases of Class 2.1 or Subsidiary Risk 2.1	200
	• Liquefied Gases of Subsidiary Risk 5	200
	• Compressed or liquefied gases which meet the criteria for Very Toxic in Table 3 of Schedule 1	20
	• Compressed or liquefied gases which meet the criteria for Toxic in Table 3 of Schedule 1	200

MATERIAL	DESCRIPTION	THRESHOLD QUANTITY (tonnes)

Flammable Materials	• Liquids which meet the criteria for Class 3 Packaging Group I (Except for crude oil in remote locations)	200
	• Crude oil in remote locations which meet the criteria for Class 3 Packaging Group I	2000
	• Liquids which meet the criteria for Class 3 Packaging Group II or III	50 000
	• Liquids with flashpoints < 61°C kept above their boiling points at ambient conditions	200
	• Combustible solids which meet the criteria for Class 4.1 Packaging Group I	200
	• Spontaneously combustible materials which meet the criteria for Class 4.2 Packaging Group I or II	200
	• Materials which liberate flammable gases or react violently on contact with water which meet the criteria for Class 4.3 Packaging Group I or II	200
	• Materials which belong to Classes 3 or 8 Packaging Group I or II which have Hazchem codes of 4WE (materials which react violently with water)	500

MATERIAL	DESCRIPTION	THRESHOLD QUANTITY (tonnes)
Oxidising Materials	• Oxidising material listed in Table 9.6 of the ADG Code	50
	• Oxidising materials that meet the criteria for Class 5.1 Packaging Group I or II	200
Peroxides	• Peroxides which are listed in Section 9.6 of the ADG Code	50
	• Organic Peroxides which meet the criteria for Class 5.2	200
Toxic Solids and liquids	• Materials which meet the criteria for Very Toxic in Table 3 of Schedule 1	20
	• Materials which meet the criteria for Toxic in Table 3 of Schedule 1	200

Notes to Table 2

(a) **Class** means the Class of dangerous goods referred to in the *Australian Dangerous Goods Code for the Transport of Dangerous Goods by Road and Rail*[2].

(b) **Packaging Group** means the particular Packaging Group determined from the *Australian Code for the Transport of Dangerous Goods by Road and Rail*[2].

(c) The quantities specified for explosives relate to the weight of explosive exclusive of packaging, casings and non-explosive components.

(d) If explosives of different Hazard Divisions are present in the same area or storage, all of the explosives shall be classified in accordance with the following Table:

Explosives – Overall Classification of Different Hazard Divisions Stored Together

HAZARD DIVISION	1.1	1.2	1.3	1.4	1.5	1.6
1.1	1.1	1.1	1.1	1.1	1.1	1.1
1.2	1.1	1.2	1.1	1.2	1.1	1.2
1.3	1.1	1.1	1.3	1.3	1.1	1.3
1.4	1.1	1.2	1.3	1.4	1.5	1.6
1.5	1.1	1.1	1.1	1.5	1.5	1.5
1.6	1.1	1.2	1.3	1.6	1.5	1.6

(e) ADG denotes *Australian Dangerous Goods Code for the Transport of Dangerous Goods* by Road and Rail[2].

TABLE 3: CRITERIA FOR TOXICITY

Description	Oral Toxicity[1] LD_{50} (mg/kg)	Dermal Toxicity[2] LD_{50} (mg/kg)	Inhalation Toxicity[3] LC_{50}(mg/L)
Very Toxic	$LD_{50} \leq 5$	$LD_{50} \leq 40$	$LC_{50} \leq 0.5$
Toxic	$5 < LD_{50} \leq 50$	$40 < LD_{50} \leq 200$	$0.5 < LC_{50} \leq 2$

1. In rats

2. In rats or rabbits

3. 4 hours in rats

SCHEDULE 2: INFORMATION TO BE INCLUDED IN ON-SITE AND OFF-SITE EMERGENCY PLANS

S2.1 The on-site emergency plan shall contain at least the following information:

(a) For conditions or events which could bring about a major accident, a description of the measures taken and to be taken to control or limit the consequences, including a description of the resources available;

(b) Arrangements for providing early warning of a major accident to emergency services, the type of information to be initially provided, and arrangements for providing more detailed information as it becomes available;

(c) Responsibilities employees will be expected to perform, coordinating this with off-site emergency services, and other closely located major hazard facilities which may require mutual aid in the event of a major accident;

(d) Arrangements for providing assistance to emergency services, and other closely located major hazard facilities which may require mutual aid in the event of a major accident; and

(e) Procedures for the safe evacuation of, and accounting for all people on site.

S2.2 The off-site emergency plan shall contain at least the following information:

(a) The name, location, postal address and nature of the operations of the major hazard facility.

(b) The name, title and telephone number of the contact person with whom details of the information can be clarified.

(c) A map of the site and surrounding area, showing details of residents, the built and natural environment, closely located major hazard facilities and all other neighbours likely to be affected by a major accident. The map should also identify all potentially hazardous inventories in the area.

(d) The position, location and means of contacting the person(s) at the facility who are responsible for liaison with emergency services in the event of an emergency, or who have relevant expertise and skills in the event of a major accident. In case the nominated person(s) are not on-site, the contact details for the deputy shall be supplied. For an unstaffed facility, a list of 24 hour emergency contact names and telephone numbers shall be supplied.

(e) Minimum and maximum number of employees expected to be on-site at any one time.

(f) Emergency resources on-site, for example, personnel, emergency equipment, gas detectors, wind velocity detectors.

(g) On-site and off-site warning systems.

(h) Communication systems on-site.

(i) Arrangements for providing early warning of a major accident to emergency services, the type of information to be initially provided, and arrangements for providing more detailed information as it becomes available.

(j) Arrangements for providing assistance with off-site mitigatory action.

(k) Inventory of hazardous materials on site, whether stored or produced.

(l) Transport facilities likely to be affected by a major accident, for example road, rail, airport or shipping.

(m) Emergency planning assumptions, for example, emergency measures planned for identified major accidents, area likely to be affected, timescale of events, protection of the community, including other closely located facilities, and the built and natural environment.

(n) Control points and procedures for utilities, for example, gas, water and electricity.

(o) Containment procedures for spillage of hazardous materials, especially where pollutants are stored.

(p) Decontamination procedures necessary following a major accident.

REFERENCED DOCUMENTS

1. National Occupational Health and Safety Commission, *National Code of Practice for the Control of Major Hazard Facilities* [NOHSC:2016(1996)], Australian Government Publishing Service, Canberra, 1996.

2. Federal Office of Road Safety, *Australian Code for the Transport of Dangerous Goods by Road and Rail*, 5th Edition, Australian Government Publishing Service, Canberra, September 1992.

NATIONAL CODE OF PRACTICE FOR THE CONTROL OF MAJOR HAZARD FACILITIES [NOHSC:2016(1996)]

1. TITLE (CITATION)

1.1 This national code of practice may be cited as the *National Code of Practice for the Control of Major Hazard Facilities* [NOHSC:2016(1996)]

2. PURPOSE

Extract from the National Standard

2.1 The objective of this national standard is to prevent major accidents and near misses, and to minimise the effects of any major accidents and near misses by requiring Operators to:

(a) identify and assess all hazards and implement control measures to reduce the likelihood and effects of a major accident;

(b) provide information to the relevant public authority and the community, including other closely located facilities, regarding the nature of hazards at a major hazard facility and emergency procedures in the event of a major accident;

(c) report and investigate major accidents and near misses, and take appropriate corrective action; and

(d) record and discuss the lessons learnt and the analysis of major accidents and near misses with employees and employee representatives.

2.1 This *National Code of Practice for the Control of Major Hazard Facilities* [NOHSC:2016(1996)] provides a practical guide on how to meet the requirements of the *National Standard for the Control of Major Hazard Facilities* [NOHSC:1014(1996)].

3. SCOPE AND APPLICATION

Extract from the National Standard

3.1 This national standard applies to any facility which is classifiable as a major hazard facility in accordance with Chapter 5 of this national standard.

3.1 This section of the national standard is self-explanatory.

4. INTERPRETATION (DEFINITIONS)

4.1 Chapter 4 of the *National Standard for the Control of Major Hazard Facilities* [NOHSC:1014(1996)] should be referred to for the definitions of the terms used in this national code of practice.

5. IDENTIFICATION AND CLASSIFICATION OF A MAJOR HAZARD FACILITY

INTRODUCTION

5.1 A facility is classifiable as a major hazard facility where:

(a) a quantity of scheduled material present, or which will be present, exceeds the corresponding threshold quantity listed in Schedule 1 of the national standard;

(b) the calculation of the aggregation rule listed in Schedule 1 of the national standard yields a number greater than one;

(c) the relevant public authority considers that certain aspects of a notifiable facility may cause a major accident; or

(d) the relevant public authority considers that the use of biological, radioactive or other unscheduled materials has the potential to cause a major accident.

5.2 The person who is responsible for planning or operating a facility, or who intends to operate a facility, has the primary responsibility for notifying the relevant public authority of the quantity of materials which provides the basis for determining whether or not the national standard applies to that facility. The relevant public authority then has the responsibility for classifying the facility as a major hazard facility.

THE REQUIREMENT TO NOTIFY

Extract from the National Standard

5.1 A person, including an employer or occupier, who operates or intends to operate a facility shall notify the relevant public authority if any material(s) listed in Schedule 1: *The Identification of a Major Hazard Facility* is present, or will be present, at the facility in a quantity greater than 10 per cent of the corresponding threshold or aggregate quantity.

5.3 The minimum requirement of the national standard is for the notification of the facility. Notification is also required when there are certain changes to the facility, such as an increase in the inventory or aggregate quantity of scheduled material(s) present.

5.4 Schedule 1 of the national standard and the calculation and application of the aggregation rule are explained in Chapter 16 of this national code of practice.

5.5 The relevant public authority should be consulted about the notification requirements for a facility since a single notification may be sufficient to cover major hazard facility and dangerous goods notification requirements.

INFORMATION REQUIRED AT NOTIFICATION

Extract from the National Standard

5.2 The person shall notify the relevant public authority of the following information about the facility:

(a) the name or trade name and the address or location of the facility;

(b) the address or location of the registered place of the business;

(c) the name of the director or person in charge of the facility;

(d) the reason for the notification, that is:

(i) a new facility,

(ii) an existing facility, or

(iii) a change to an existing facility which causes it to become a major hazard facility;

(e) for each material which is listed in Schedule 1, and which is likely to be present at the facility in a quantity greater than two per cent of the corresponding threshold quantity, the name of the material and sufficient information to clearly identify it, including, as appropriate, the chemical name, UN number, Chemical Abstract Service (CAS) number, other names and the molecular formula;

(f) the maximum quantity of each material, referred to in sub-section 5.2(e) above, which is present, or likely to be present, at the facility;

(g) information on the aggregate quantity of materials, according to the calculation of the aggregation rule, as provided at sub-section S1.1(b) in Schedule 1; and

(h) a brief description of the nature of the facility, including general site activities and production and auxiliary processes which involve materials listed in Schedule 1.

5.6 Change as referred to in sub-section 5.2 (d) (iii) and 5.4 (c) of the national standard refers to any change at an existing facility which:

(a) makes it newly notifiable under sub-section 5.1 of the national standard; or

(b) makes it newly classifiable as a major hazard facility under sub-section 5.5 of the national standard; or

(c) significantly increases the percentage of the threshold or aggregate quantity of scheduled material(s) at the facility.

5.7 The maximum quantity of each scheduled material present or likely to be present includes raw materials, products, intermediates, by-products or residues from operations at the facility. If a scheduled material is part of a mixture, the equivalent quantity should be calculated as shown in Example 2 in Chapter 16 of this national code of practice.

5.8 A brief description of the nature of the facility should contain sufficient information about the materials on-site, and the layout and location of the site for the relevant public authority to be able to qualitatively assess the nature and impact of the site. It may contain the following information:

(a) physical characteristics of the facility, for example, a basic site plan which indicates:

(i) the approximate area the facility is located on,

(ii) distances of storage and processing facilities from the boundary,

(iii) surrounding land use, including information on distances to residential areas, commercial areas, other industries and environmentally sensitive areas, and

(iv) concentrations of people on-site, such as in offices and workshops;

(b) a description of the activities carried out at the facility, including:

(i) bulk storage and container storage,

(ii) loading and unloading of road, rail or ship transport,

(iii) a general description of production and auxiliary processes which involve scheduled materials on the site, and

(iv) pipelines carrying scheduled materials which have connections with off-site facilities.

Extract from the National Standard

5.3 The person shall supply, subsequent to notification of the major hazard facility and at the request of the relevant public authority, any additional relevant information.

5.9 This may include, for example, any other regulatory controls relating to those chemicals on-site, such as other licences or requirements in relation to fire protection, local government, environment, water, waste, etc.

TIMING FOR NOTIFICATION

Extract from the National Standard

5.4 The person shall notify the relevant public authority in accordance with the following provisions:

(a) for a proposed new facility, as soon as possible and at least six months before construction commences;

(b) for an existing facility, including a facility under construction at the implementation of this national standard, as soon as possible and within three months of the implementation of this national standard by the relevant public authority; and

(c) for a change to an existing facility, as soon as possible and before implementing the change.

5.10 Appendix 4 provides information about the timing for this and other requirements of the national standard.

CLASSIFICATION OF A MAJOR HAZARD FACILITY

Extract from the National Standard

5.5 The facility shall be classified as a major hazard facility where any material(s) listed in Schedule 1 is present, or will be present, in a quantity greater than the corresponding threshold or aggregate quantity.

5.6 A facility may be classified as a major hazard facility where:

(a) any material(s) listed in Schedule 1 is present between 10 per cent and 100 per cent of the corresponding threshold or aggregate quantity and, after consultation with the Operator, the relevant public authority can classify the facility as a major hazard facility on the basis of a review of the following features of the facility;

(i) properties of materials at the facility, including extreme toxicity or environmental hazard, toxic combustion products, toxic hydrolysis products, toxic volatile materials and synergistic effects,

(ii) process and storage conditions, including pressure above atmospheric pressure, temperature above ambient temperature, variety of dangerous goods, container size and level of technology,

(iii) organisational issues, including adequacy of existing hazard controls, organisational quality, major accident and near miss preparedness, and

(iv) off-site issues, including surrounding land use, pipelines, environmental sensitivity and potential for external threat;

OR

(b) in the opinion of the relevant public authority, an activity within a facility has the potential to cause a major accident. The relevant public authority can classify the facility as a major hazard facility provided that, in the view of the relevant public authority, the potential arises from:

(i) radioactive and/or biological material(s) not referred to in Schedule 1, or

(ii) any other material(s) not listed in Schedule 1.

5.11 In forming an opinion under sub-section 5.6(b) of the national standard that a facility has the potential to cause a major accident, the relevant public authority may consider the features listed in sub-sections 5.6(a)(i)-(iv) of the national standard.

5.12 After classifying a facility under sub-section 5.6(b) of the national standard, the relevant public authority will advise the Operator of the reasons for the decision.

CLOSURE OR ALTERATION OF A MAJOR HAZARD FACILITY

Extract from the National Standard

5.7 Where the Operator of a major hazard facility intends to permanently close a major hazard facility, or alter a major hazard facility so that it will no longer be a major hazard facility, the Operator shall notify the relevant public authority prior to the closure or alteration.

5.13 The notification of the closure or alteration of a major hazard facility so that it will no longer be a major hazard facility should include the following information:

(a) timeframe for the closure or alteration of the major hazard facility;

(b) a brief description of the arrangements for the closure or alteration; and

(c) arrangements for the maintenance or transfer of any required documentation, including the safety report, major accident reports and near miss reports.

6. HAZARD IDENTIFICATION, RISK ASSESSMENT AND RISK CONTROL

IDENTIFICATION AND ASSESSMENT OF HAZARDS AND MAJOR ACCIDENT EVENTS

Extract from the National Standard

6.1 Where a facility has been classified as a major hazard facility, the Operator of a major hazard facility shall carry out and document a systematic risk assessment which so far as practicable:

(a) identifies all hazards and all events which may lead to a major accident;

6.1 A systematic risk assessment involves the identification and evaluation of major accidents that could occur at a major hazard facility, and forms a cornerstone for their prevention and mitigation.

6.2 The depth of analysis required in the systematic risk assessment depends on factors such as:

(a) the nature and scale of the major hazard facility;

(b) the type of operations carried out;

(c) the location of the major hazard facility; and

(d) external influences.

6.3 The approach to risk assessment should recognise the size and complexity of different sites. This approach should consider the following types and combinations of risk assessments:

(a) a broad qualitative hazard analysis, for example, safety and health reviews using checklists;

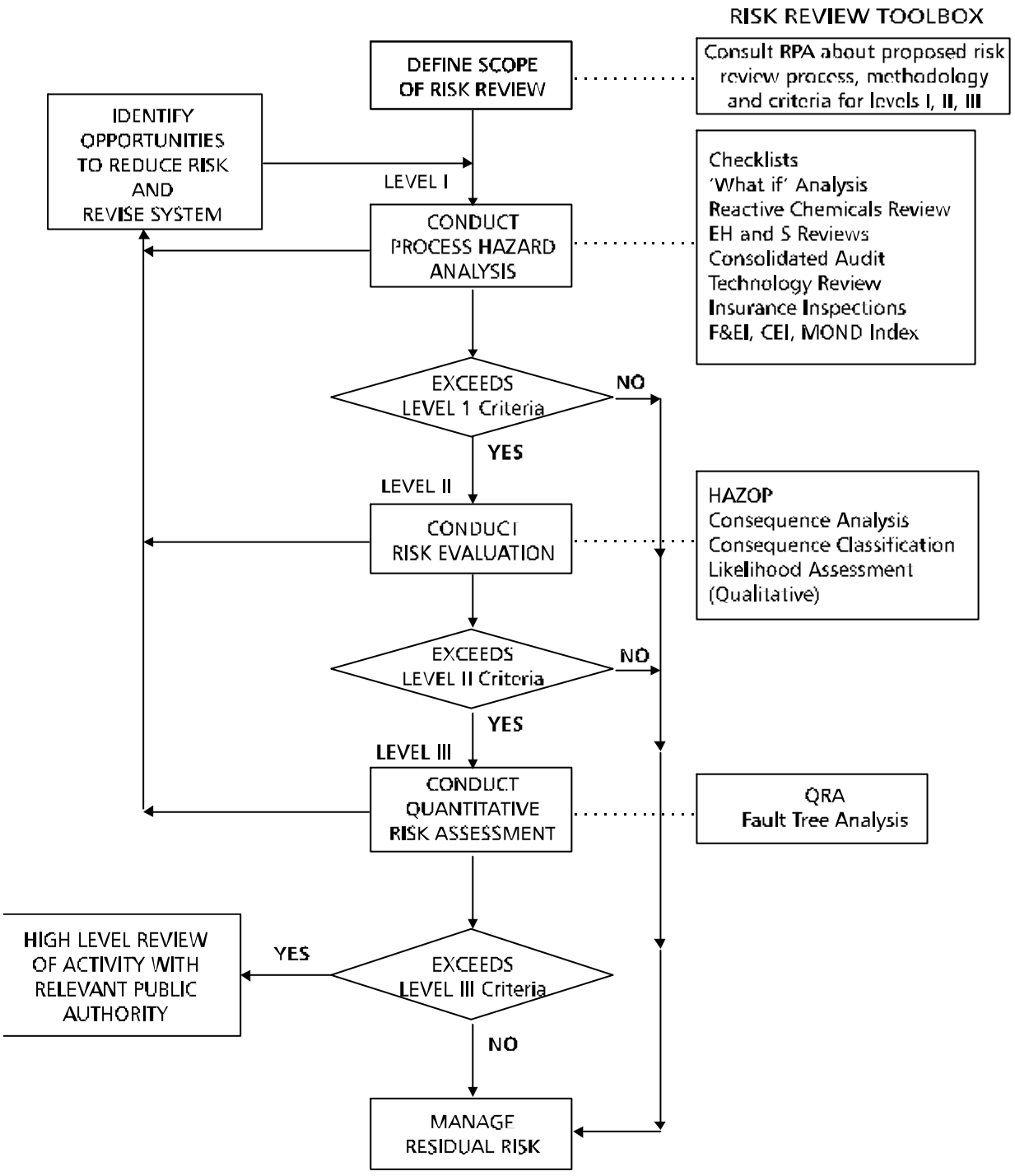
(b) a semi-quantitative hazard consequence evaluation to determine hazard effects, for example, fire consequence analysis; or

(c) a quantitative risk assessment.

6.4 The Operator should evaluate the factors in sub-section 6.2 above and choose an appropriate approach for the hazard and risk assessment. An example of a multilevel risk review process is shown in Figure 1. Additional hazard and risk review tools are listed in the *Further Reading* chapter at the end of this national code of practice.

Figure 1

EXAMPLE OF A MULTI-LEVEL RISK REVIEW PROCESS FLOWCHART



Note: The criteria referred to in this flowchart may be qualitative or quantitative

As adapted from guidelines provided by the courtesy of Dow Chemical Limited[1]

6.5 The first step in the hazard identification process is a process hazard analysis, which identifies potential major accidents at the major hazard facility and possible initiating events. Common methods used include:

(a) analysing process material properties and process conditions;

(b) reviewing organisation and industry experience;

(c) checklists;

(c) what-if analysis;

(d) developing interaction matrixes; and

(e) hazard and operability studies (Hazops).

6.6 Some examples of major accidents are:

(a) a release of toxic material;

(b) a release of flammable material;

(c) fire;

(d) explosion;

(e) major structural failure; and

(f) an incident leading to environmental damage.

6.7 Some examples of initiating events for major accidents are:

(a) failure of equipment or systems of work;

(b) failure of management systems;

(c) human errors;

(d) external events;

(e) chemical reactions; and

(f) natural events, such as earthquakes, fires or floods.

6.8 The Operator should include at least the following information in the process hazard analysis:

(a) notification requirements in accordance with sub-section 5.2 of the national standard;

(b) a plot plan of the site showing location and quantities of materials listed in Schedule 1 and other materials present which could contribute to the risk of fire, explosion or dispersion of hazardous materials, such as combustible materials or untreated liquid wastes; and

(c) an area plan of surrounding land use showing neighbouring land uses and significant features, such as residential areas, schools, hospitals, transport corridors, other industrial facilities, topographical features and environmentally sensitive areas.

6.9 The results of the process hazard analysis may be conveniently presented in tabular form, as shown in the *Sample Hazard Identification Word Diagram* provided at Appendix 1 of this national code of practice.

Extract from the National Standard

6.1 Where a facility has been classified as a major hazard facility, the Operator of a major hazard facility shall carry out and document a systematic risk assessment which so far as practicable:

(b) identifies the type, likelihood and consequences of major accidents that may occur; and

6.10 Potential major accidents identified in the process hazard analysis should be evaluated according to hazard source, likelihood and consequence. For each, describe the following:

(a) the major accident;

(b) the estimated quantity of material(s) released;

(c) the estimated dispersion of material(s);

(d) an assessment of the likely harmful effects to people and the environment, for example, heat radiation, blast wave, toxic effects or environmental damage; and

(e) the likelihood of the major accident occurring.

6.11 The likelihood of each accident occurring should be assessed at least in broad qualitative terms, with regard to the protective measures (both hardware and organisational) which exist or are proposed at the major hazard facility. If warranted, quantitative methods may be applied to the analysis. If quantitative methods are used, the methodology and source of failure rate data should be given.

6.12 It may be appropriate to classify each accident according to the severity of the consequences. For example, the effects of toxic releases may be classified into odour/irritation effects, irreversible effects and life threatening effects.

6.13 Relative ranking techniques may be used to compare potential accidents and to establish priorities for prevention and control measures. Some appropriate ranking techniques are:

(a) *Dow's Fire and Explosion Index* (FEI)[2];

(b) *Dow's Chemical Exposure Index* (CEI)[3];

(c) *Mond Index*[4]; and

(d) *Manual for Classification and Prioritisation of Risk from Major Accidents in Process and Related Industries*[5].

6.14 The Operator should document the methodology and assumptions used in the analysis of each major accident. Recognised models for gas dispersion, explosion over pressure, fire radiation and toxic exposure may be used. Some typical examples are contained in the *Referenced Documents* chapter, references 6 and 7.

Extract from the National Standard

6.1 Where a facility has been classified as a major hazard facility, the Operator of a major hazard facility shall carry out and document a systematic risk assessment which so far as practicable:

(c) assesses the risks posed by those hazards and events.

6.15 The Operator may document the risks determined by the risk assessment in a summary using qualitative indicators only, where appropriate. These indicators should be agreed with the relevant public authority.

6.16 Operators may use in-house resources, independent consultants or a combination of both to conduct quantitative risk assessment studies. Risk may be represented as indexes, risk contour plots or similar. Where quantitative risk assessment studies are carried out, they should be documented in accordance with recognised guidelines. A typical example is contained in the *Referenced Documents* chapter, reference 7. Quantitative risk assessment studies may also be used as tools in land use planning studies for major hazard facilities.

CONTROL OF RISK

Extract from the National Standard

6.2 The Operator of a major hazard facility shall, so far as practicable, minimise the risk associated with the major hazard facility by:

(a) eliminating or minimising hazards at the major hazard facility;

6.17 The opportunities for major improvements in safety are greatest during the design of a major hazard facility. During the design of a new major hazard facility or a modification to an existing major hazard facility, the Operator should consider the best ways to eliminate or minimise hazards to improve the inherent safety of the major hazard facility. Approaches which may be used include:

(a) elimination, that is, removal of the hazard;

(b) substitution, that is, use of a less hazardous material;

(c) intensification, that is, use of smaller inventories of hazardous materials in process and storage;

(d) attenuation, that is, use of less hazardous process conditions, lower temperatures or pressures or a less hazardous form of the material;

(e) limitation, that is, design of facilities that limit the impact of a release with secondary containment systems, siting and layout; and

(f) simplification, that is, design of facilities that make operating errors less likely or serious.

6.18 A number of techniques, such as hazard analysis (Hazan) and hazard and operability studies (Hazops), may be used to identify technical or operational methods to reduce hazards.

Extract from the National Standard

6.2 The Operator of a major hazard facility shall, so far as practicable, minimise the risk associated with the major hazard facility by:

(b) implementing technical measures to minimise the likelihood of a major accident;

6.19 Technical measures to minimise the likelihood of a major accident include both preventive measures and control measures designed to check or forestall any sequence of events which could foreseeably result in a major accident. Nontechnical measures to minimise the likelihood of a major accident, including organisational and system measures such as procedures and training, should be included in the safety management system.

6.20 Technical measures to reduce the likelihood of a major accident may include:

(a) maintenance and inspection procedures;

(b) duplication of critical instrumentation and control systems;

(c) protection from external sources of ignition or collision;

(d) use of inert atmospheres to avoid flammable mixtures; and

(e) avoidance of inherently fragile equipment in hazardous service, for example, glass devices and flexible connections.

6.21 Technical control measures used to minimise the likelihood of a major accident, in the event that preventive measures fail, may include:

(a) alarms, interlocks and safety shut-down systems to prevent potentially hazardous deviations from normal operating conditions progressing to a major accident;

(b) safety relief valves and emergency blow-down valves vented to containment devices, scrubbers or flare stacks; and

(c) control of ignition sources.

Extract from the National Standard

6.2 The Operator of a major hazard facility shall, so far as practicable, minimise the risk associated with the major hazard facility by:

(c) implementing measures to limit the consequences of a major accident; and

6.22 The Operator should evaluate and implement appropriate measures to limit the consequences of a major accident. Such measures should take into account the likely warning periods that will be available on-site and off-site. Measures may include:

(a) early detection and alarm systems;

(b) communication systems;

(c) fire protection systems;

(d) containment for spills and fire-water run-off;

(e) personal protective equipment;

(f) safety refuges for site personnel;

(g) first aid equipment and trained personnel;

(h) clean-up procedures; and

(i) water curtains.

Extract from the National Standard

6.2 The Operator of a major hazard facility shall, so far as practicable, minimise the risk associated with the major hazard facility by:

(d) protecting people, property and the built and natural environment from the effects of a major accident by establishing emergency plans and procedures.

6.23 In establishing emergency plans and procedures, the Operator should take into consideration the following chapters of the national standard and this national code of practice:

(a) Chapter 9: *Emergency Planning*; and

(b) Chapter 12: *Community Information*.

SAFETY MANAGEMENT SYSTEM

Extract from the National Standard

6.3 The Operator of a major hazard facility shall establish, implement and maintain a documented safety management system for the major hazard facility.

6.24 Chapter 4, *Interpretation (Definitions)*, of the national standard defines a safety management system as follows:

'"Safety management system" means the comprehensive integrated system for managing safety at a major hazard facility and which sets out:

(a) *the safety objectives;*

(b) *the systems and procedures by which these are to be achieved;*

(c) *the performance standards which are to be met; and*

(d) *the means by which adherence to these standards is to be maintained.'*

6.25 The safety management system should be sufficiently comprehensive to cover the full range of activities which could have a significant safety impact at the major hazard facility, with particular emphasis on those activities that the systematic risk assessment has identified as having the potential to lead to a major accident. The safety management system should form an integral part of the overall management system for the major hazard facility, and should cover all stages from design through construction, commissioning, operation, modifications and permanent closure of the major hazard facility.

6.26 In accordance with sub-section 7.10 of the national standard, there is a requirement for a system of assurance for verifying the adequacy of the safety management system, its implementation and continued compliance. Such a system should be designed in consultation with the relevant public authority.

6.27 A number of safety management system models are available. The Operator may use an existing model for guidance in structuring and defining the core objectives, as appropriate to the major hazard facility. Appendix 2 provides examples of the core elements in several different safety management systems models. Alternatively, the Operator may use a safety management system developed in-house.

6.28 The safety management system should be framed in specific, rather than general, terms to facilitate the auditing of the system.

6.29 Implementation of a new safety management system should be an integrated activity, with appropriate links between the various safety management system components, rather than a series of discrete activities.

6.30 The Operator may implement a safety management system in stages.

6.31 The Operator should establish appropriate procedures for periodic monitoring, regular auditing and review of the safety management system and its operation to ensure that it continues to function effectively, and to identify possible changes for improved performance.

6.32 Regular monitoring activities for the safety management system may include:

(a) obtaining information on relevant aspects of safety performance to check that objectives and performance criteria are being met;

(b) monitoring the use of procedures, and checking of safety systems and equipment;

(c) identifying noncompliance with the requirements of the safety management system, investigating them and taking appropriate corrective actions; and

(d) maintaining a system of records that demonstrate compliance with the safety management system.

6.33 Periodic auditing of the safety management system may include:

(a) preparation of an audit plan that defines specific activities and areas to be audited, frequency of audits and responsibilities for conducting them;

(b) establishment of audit protocols and procedures that cover allocation of resources and personnel requirements for auditing, methodologies, reporting procedures and follow up of audit recommendations;

(c) assessment of the strengths and weaknesses of the safety management system;

(d) verification that the safety management system is functioning effectively; and

(e) identification of areas for improvement.

6.34 The Operator should document the safety management system in a way that is easily understood by employees, employee representatives and relevant third parties.

6.35 The procedures and responsibilities for ensuring that the documented safety management system remains complete and up to date should be clearly defined and documented.

REVIEW AND UPDATE OF RISK ASSESSMENTS

Extract from the National Standard

6.4 The Operator shall review and update, where necessary, the risk assessment and risk controls for the major hazard facility, as required in sub-sections 6.1 and 6.2 of this national standard. These reviews and updates shall be carried out at appropriate intervals not exceeding five years, and prior to any modification, such as:

(a) change to plant, processes, operating procedures or quantity of materials listed in Schedule 1;

(b) introduction of new plant, processes or operating procedures; or

(c) change to the safety management system,

which significantly alters the risk associated with the major hazard facility.

6.36 The term 'modification' includes any change at the facility which significantly alters the risk associated with the facility. A definition of the term 'modification' is provided in Chapter 4 of the national standard.

6.37 The Operator of a major hazard facility should, as appropriate to the features of the facility and the surrounding land uses, identify what constitutes a significant alteration to the risk associated with the facility. This assessment should then be documented and provided to the relevant public authority.

6.38 While what constitutes a significant alteration may vary from site to site, consistent principles should be followed in assessing the significance of all alterations. These include:

(a) Where there are agreed numeric risk criteria, the risk would not be considered to have significantly altered if the risks before and after the change were both substantially lower than the relevant criteria (substantially lower could be considered to be one order of magnitude).

(b) The assessment of significance should take into account the nature of the surrounding land use and its sensitivity. A change in risk which may not be considered significant in an area of predominantly industrial use may be significant in proximity to residential land use or where there is a sensitive biophysical environment.

(c) The assessment of significance should take account of the magnitude of the background risk. A change would not usually be regarded as significant if the risk does not change appreciably in relation to the background risk.

(d) Greater weight should be given to changes which increase the risk than to those which will result in a risk reduction.

6.39 The person who operates a notifiable facility should also monitor the cumulative impact of minor changes on safety.

CONSULTATION WITH EMPLOYEES AND EMPLOYEE REPRESENTATIVES

Extract from the National Standard

6.5 The Operator of a major hazard facility, in carrying out duties under sub-sections 6.1-6.4 above shall consult with employees and employee representatives through cooperative mechanisms.

6.40 Guidance on consultation with employees and employee representatives is provided in Chapter 11 of this national code of practice.

7. SAFETY REPORTS

INTRODUCTION

Extract from the National Standard

7.1 An Operator of a major hazard facility shall provide the relevant public authority with a safety report.

7.1 The safety report is intended to inform the relevant public authority about the hazards and risks associated with the major hazard facility and the risk management measures in place.

7.2 The safety report need not contain detailed procedures, calculations, drawings or plans, but should contain sufficient information to demonstrate to the relevant public authority that the systems and conclusions in the safety report are reasonable. General documentary evidence that supports the conclusions in the safety report should be referenced. The Operator should provide access to the relevant documentation to the relevant public authority.

7.3 The Operator should take responsibility for preparing the safety report, and be involved in all aspects of its preparation. Independent consultants may be used to provide specialist advice in areas outside the Operator's expertise.

7.4 To avoid unnecessary duplication of information and work, the Operator may submit a single safety report to cover a number of similar sites, provided that the sites are under the same overall management, similar activities are carried out at each site and the surrounding land uses are similar.

PROVISION OF A SAFETY REPORT

Extract from the National Standard

7.2 The safety report shall be provided:

(a) for a proposed new major hazard facility, as soon as possible and prior to commencement of operations; and

(b) for an existing major hazard facility, including those facilities under construction at the commencement of this national standard, as soon as possible and within eighteen months of the implementation of this national standard by the relevant public authority,

although the relevant public authority may vary the time within which a safety report is required.

7.3 If the relevant public authority varies the time for completion of the safety report, the Operator must provide a timetable for the completion of the safety report.

7.5 For the purposes of sub-section 7.2 of the national standard, an existing facility which becomes a major hazard facility after implementation of the national standard should be considered to be a new major hazard facility.

7.6 The Operator should consult with the relevant public authority, as soon as practicable, and agree on:

(a) the presentation, format and detail required in the safety report; and

(b) the milestones at which the Operator will communicate with the relevant public authority when preparing the safety report and implementing the national standard.

7.7 The relevant public authority may agree to the submission of the safety report in stages. Appendix 4 provides information about the timing for this and other requirements of the national standard.

CONTENT OF THE SAFETY REPORT

Extract from the National Standard

7.4 The safety report shall:

(a) identify the nature and scale of the use of any materials listed in Schedule 1;

(b) identify the type, relative likelihood and consequences of major accidents that might occur;

(c) give details of the safety management system for the major hazard facility, including the arrangements:

(i) for ensuring the safe operation of the major hazard facility, including the control of serious deviations that could lead to a major accident and emergency procedures at the site,

(ii) for ensuring that the means for the safe operation of the major hazard facility are properly designed, constructed, tested, operated, inspected and maintained, and

(iii) for providing assurance, in accordance with sub-section 7.10 of this national standard; and

(d) provide justifications as to the adequacy of the measures taken to ensure the safe operation of the major hazard facility.

7.8 The Operator should demonstrate in the safety report that the requirements of the following chapters of the national standard have been met:

(a) the identification of materials listed in Schedule 1 of the national standard (sub-sections 5.2(e)-(g) of the national standard);

(b) the identification of hazards and the assessment of risks associated with the major hazard facility (sub-section 6.1 of the national standard);

(c) the implementation of risk control measures (sub-section 6.2 of the national standard);

(d) the establishment, implementation and maintenance of a safety management system (sub-section 6.3 of the national standard);

(e) training and education (Chapter 8 of the national standard);

(f) emergency planning (Chapter 9 of the national standard); and

(g) community and employee consultation (Chapters 11 and 12 of the national standard).

7.9 The Operator should include in the safety report sufficient description of the safety management system to demonstrate its fitness for purpose to all parties. Appendix 2 provides five examples of safety management system core elements.

7.10 The Operator may demonstrate the adequacy of the risk assessment and the risk control measures at the major hazard facility by providing comparison in the safety report with:

(a) recognised industry codes and standards;

(b) industry benchmarks; or

(c) risk criteria which are acceptable to the relevant public authority.

COORDINATED SAFETY REPORTS

Extract from the National Standard

7.5 At the request of the relevant public authority, Operators of major hazard facilities which are located close together shall prepare coordinated safety reports. The Operators shall exchange such information as is necessary to take account of a major accident hazard in their accident prevention policies, safety management systems and safety reports.

7.11 In determining the need for coordinated safety reports, the relevant public authority may consider the information previously provided by Operators in accordance with the national standard. In particular, the relevant public authority may consider:

(a) the location, proximity and total quantities of scheduled materials present at each closely located major hazard facility; and

(b) the potential off-site impact of a major accident.

7.12 The relevant public authority should consult with the Operators prior to determining the need for coordinated safety reports, and in determining the content and structure of the coordinated safety reports if such reports are required.

7.13 On-going consultation should take place between Operators who have prepared coordinated safety reports to communicate and allow for any changes in each individual Operator's safety report.

7.14 Where two or more Operators identify the need, they may cooperate to prepare coordinated safety reports.

CONSULTATION WITH EMPLOYEES AND EMPLOYEE REPRESENTATIVES

Extract from the National Standard

7.6 The safety report shall be prepared and updated in consultation with employees and employee representatives at the major hazard facility through cooperative mechanisms.

7.15 Guidance on consultation with employees and employee representatives is provided in Chapter 11 of this national code of practice.

CONSULTATION WITH THE COMMUNITY

Extract from the National Standard

7.7 In the preparation of the safety report, the Operator shall consult with the community surrounding the major hazard facility, including other closely located facilities, about the issues associated with public and environmental health and safety.

7.16 The Operator should consult with the surrounding community:

(a) to determine community concerns about the major hazard facility—these concerns should be addressed in the safety report; and

(b) about revisions, updates or amendments made to the safety report which reflect changes to risks or the method of managing them—administrative changes need not be communicated.

7.17 Consultation with the community should be consistent with the provisions of Chapter 12 of the national standard.

REVISION, UPDATING AND AMENDMENT OF THE SAFETY REPORT

Extract from the National Standard

7.8 The safety report shall be revised, updated, amended and provided to the relevant public authority:

(a) prior to a modification which significantly alters the risk associated with the major hazard facility;

(b) when developments in technical knowledge or in the assessment of hazards and risks make this appropriate;

(c) at least every five years; or

(d) at the specific request of the relevant public authority.

7.18 This section of the national standard is self explanatory. Appendix 4 provides information about the timing for this and other requirements of the national standard.

REVIEWING THE SAFETY REPORT TO ACCOUNT FOR CHANGE

Extract from the National Standard

7.9 The review of the safety report shall take into account changes to:

(a) the hazards and risks;

(b) the safety management system;

(c) technology;

(d) training programs;

(e) work procedures; and

(f) adjacent land use.

7.19 The Operator should keep:

(a) a record of all changes and documentation supporting the current safety report; and

(b) the previous two versions of the safety report.

PROVIDING A SYSTEM OF ASSURANCE

Extract from the National Standard

7.10 The Operator shall include a system of assurance in the safety report to verify the adequacy of the safety management system, its implementation and continued compliance. This system of assurance shall be designed in consultation with the relevant public authority.

7.20 A system of assurance should include appropriate procedures for regular monitoring, periodic auditing and review of the safety management system. These concepts are more fully explained in sub-sections 6.31-6.33 of this national code of practice.

7.21 Auditing of the safety management system may be carried out internally or externally, and the Operator should consult with the relevant public authority to determine the adequacy of the audit system.

7.22 The safety management system for a major hazard facility should be independently checked against the results of the risk assessment prior to its implementation.

8. TRAINING AND EDUCATION

INTRODUCTION

8.1 This chapter of the national code of practice covers health and safety training within a major hazard facility. Each major hazard facility, however, should have an overall training strategy to cover training programs for all functions and aspects of the major hazard facility. Occupational health and safety training is only one component of this overall training strategy. Training should also include issues of environmental and public safety, as these issues relate to meeting the objective of the national standard (***see*** Chapter 2 of the national standard).

OCCUPATIONAL HEALTH AND SAFETY COMPETENCY STANDARDS

Extract from the National Standard

8.1 The Operator of a major hazard facility shall, consistent with Standards and Curriculum Council guidelines and appropriate to the hazards and risks at the facility, develop enterprise level occupational health and safety competency standards. These competency standards shall include:

(a) the practices and control procedures for major accident prevention;

(b) emergency procedures to be followed in the event of a major accident; and

(c) responsibilities related to the safety management system at the major hazard facility.

8.2 The Standards and Curriculum Council is a national tripartite organisation established by the Commonwealth, State and Territory governments and peak employer and employee bodies to ratify competency standards for occupations, industries and enterprises on a national basis. Standards and Curriculum Council guidelines provide assistance on the role, development, endorsement, maintenance and review of national competencies.

8.3 In developing occupational health and safety competency standards, the Operator may use the National Commission's *National Guidelines for Integrating Occupational Health and Safety Competencies into National Industry Competency Standards* [NOHSC:7025(1994)][13]. These guidelines are consistent with Standards and Curriculum Council guidelines.

8.4 Each competency standard developed in the context of the national standard should:

(a) focus on what is expected of employees at the major hazard facility, including supervisors and managers, rather than on the learning process; and

(b) include the ability to apply skills and knowledge and to exercise judgement in new situations, for example, during emergencies and for changes to the safety management system.

8.5 Where the Operator has existing occupational health and safety competency standards, they should be adapted to the specific requirements of the major hazard facility and appropriate to the national standard and national code of practice.

8.6 All occupational health and safety competency standards should be:

(a) expressed as outcomes;

(b) readily understood by trainers, employees, employee representatives, supervisors, managers and Operators; and

(c) relevant to the operation and organisational culture of the major hazard facility.

8.7 Competency standards should include the knowledge and skills required to enable employees, including supervisors and managers, to participate, as appropriate to their roles and responsibilities, in:

(a) hazard identification, risk assessment and risk control at the major hazard facility, including the updating of risk assessments and risk controls;

(b) the establishment, implementation and maintenance of the safety management system;

(c) the preparation and updating of the safety report and emergency plans;

(d) the investigation of, and preparation of reports on, major accidents and near misses;

(e) the provision of induction, education and training; and

(f) the implementation of emergency plans.

INDUCTION, EDUCATION AND CONTINUING TRAINING

Extract from the National Standard

8.2 The Operator shall provide all persons at the major hazard facility (including employees, contractors and visitors) with induction, education and continuing training appropriate to the role and responsibilities of the person to ensure that the competency standards are met.

8.8 The scope and depth of training will vary depending on the role and responsibilities of each of the people involved at the major hazard facility.

8.9 Temporary and short term employees, like other employees, require a level of knowledge and skill commensurate with the work required.

8.10 In addition to the job-specific training required for the operation of the major hazard facility, induction training should be provided to all new employees, including supervisors and managers, to:

(a) encourage new employees to be safety conscious and committed to the safety requirements at the major hazard facility; and

(b) communicate the specific hazards and safety measures of the major hazard facility.

8.11 The Operator of a major hazard facility should ensure that visitors are clearly informed about:

(a) the hazards to which they may be exposed while at the major hazard facility;

(b) the appropriate safety measures to be applied during their time at the major hazard facility; and

(c) what actions they should take should any emergency plan be activated while they are on-site.

8.12 The Operator should ensure that all education and training is provided in a manner that is easily understood. This may require the provision of information and training material in appropriate languages.

TIMING OF EDUCATION AND TRAINING

Extract from the National Standard

8.3 The Operator shall provide education and training at appropriate intervals and, in any case, before:

(a) the implementation of any modification to plant, processes, operating procedures or quantity of materials listed in Schedule 1;

(b) the introduction of new plant, wherever possible, processes, materials or operating procedures; or

(c) any change to the safety management system,

which significantly alters the risk associated with the major hazard facility.

8.13 The Operator should ensure that all training within the major hazard facility is followed up, and refresher and supplementary training is provided at appropriate intervals. Appendix 4 provides information about the timing for this and other requirements of the national standard.

8.14 Where there have been no changes in the operation of the major hazard facility, refresher training may be necessary to ensure that key occupational health and safety aspects are addressed and competency standards met.

MONITORING, RECORDING AND CONSULTATION

Extract from the National Standard

8.4 The Operator shall ensure that training and education are:

(a) monitored, reviewed, updated and recorded when appropriate; and

(b) carried out in consultation with employees and employee representatives through cooperative mechanisms.

8.15 Competencies for all employees should be reviewed periodically to ensure that they cover the range of normal and emergency duties expected to be undertaken. In particular, training should be reviewed and updated, as necessary, following:

(a) the review of the risk assessment and risk controls made in accordance with sub-section 6.4 of the national standard; and

(b) the review, update and amendment of the safety report made in accordance with sub-sections 7.8 and 7.9 of the national standard.

8.16 In determining the frequency of training and education, the Operator should consider:

(a) the frequency at which the skills or knowledge are applied;

(b) the turnover of employees; and

(c) the size and rate of change at the major hazard facility.

8.17 Records should be kept of all safety-related induction, education and training undertaken to achieve relevant competency standards, and be readily accessible to employees.

8.18 Guidance on consultation with employees and employee representatives is provided in Chapter 11 of this national code of practice.

9. EMERGENCY PLANNING

INTRODUCTION

9.1 The purpose of on-site and off-site emergency plans is to minimise the effects of any major accident or near miss that occurs. Emergency plans should coordinate the alarm, notification, response, management and rehabilitation requirements in the event of a major accident at a major hazard facility.

9.2 When preparing emergency plans, liaison and coordination with emergency services should be consistent with existing legislation for State Emergency Disaster Plans.

9.3 All employees at a major hazard facility should be trained in the relevant provisions of emergency plans.

FORMULATION OF EMERGENCY PLANS

Extract from the National Standard

9.1 An Operator of a major hazard facility shall:

(a) ensure that all persons on-site have appropriate training in the implementation of the emergency plans;

(b) in consultation with emergency services, formulate and agree to an off-site emergency plan for action outside the facility;

(c) ensure that an on-site emergency plan for action inside the facility is established and maintained in conjunction with emergency services; and

(d) consult with the community, including other closely located facilities, during the preparation of off-site emergency plans, where appropriate.

9.4 Visitors to a major hazard facility should be provided with relevant information concerning the action that they should take in the event of an emergency.

9.5 Operators of closely located major hazard facilities should prepare coordinated off-site emergency plans which:

(a) involve emergency services in the event of a major accident;

(b) identify mutual aid support sources; and

(c) have a clear chain of command and use of resources established between the major hazard facilities and emergency services.

THE AIM OF EMERGENCY PLANS

Extract from the National Standard

9.2 The on-site and off-site emergency plans shall be complementary and shall be aimed at:

(a) containing and controlling a major accident so as to minimise the effects on people, property and the built and natural environment; and

(b) implementing measures to protect people, property and the built and natural environment in the event of a major accident.

9.6 Emergency plans should be capable of dealing with the worst-case credible scenario, however, detailed planning should concentrate on the more likely events. Emergency plans should also be sufficiently flexible to ensure that an emergency response can be varied according to the severity and type of the major accident.

9.7 The on-site and off-site emergency plans should be consistent and integrated to ensure effective coordination and clearly designated responsibility for various emergency response functions.

TIMING FOR THE PREPARATION OF EMERGENCY PLANS

Extract from the National Standard

9.3 The on-site and off-site emergency plans shall be prepared:

(a) for new major hazard facilities, at least three months before the commencement of operations; and

(b) for existing major hazard facilities, within three months of the date of implementation of this national standard by the relevant public authority.

9.8 Initial on-site and off-site emergency plans should be prepared within three months, and should be updated in the light of the results of the various safety studies. Appendix 4 provides information about the timing for this and other requirements of the national standard.

9.9 For the purposes of sub-section 9.3 of the national standard, an existing facility which becomes a major hazard facility after the date of implementation of the national standard should be considered to be a new major hazard facility.

CONTENTS OF EMERGENCY PLANS

Extract from the National Standard

9.4 On-site and off-site emergency plans shall contain at least the information in Schedule 2.

SCHEDULE 2: INFORMATION TO BE INCLUDED IN ON-SITE AND OFF-SITE EMERGENCY PLANS

S2.1 The on-site emergency plan shall contain at least the following information:

(a) For conditions or events which could bring about a major accident, a description of the measures taken and to be taken to control or limit the consequences, including a description of the resources available.

(b) Arrangements for providing early warning of a major accident to emergency services, the type of information to be initially provided, and arrangements for providing more detailed information as it becomes available.

(c) Responsibilities employees will be expected to perform, coordinating this with off-site emergency services and other closely located major hazard facilities which may require mutual aid in the event of a major accident.

(d) Arrangements for providing assistance to emergency services and other closely located major hazard facilities which may require mutual aid in the event of a major accident.

(e) Procedures for the safe evacuation of, and accounting for, all people on site.

S2.2	The off-site emergency plan shall contain at least the following information:
(a)	The name, location, postal address and nature of the operations of the major hazard facility.
(b)	The name, title and telephone number of the contact person with whom details of the information can be clarified.
(c)	A map of the site and surrounding area showing details of residents, the built and natural environment, closely located major hazard facilities and all other neighbours likely to be affected by a major accident. The map should also identify all potentially hazardous inventories in the area.
(d)	The position, location and means of contacting the person(s) at the facility who are responsible for liaison with emergency services in the event of an emergency, or who have relevant expertise and skills in the event of a major accident. In case the nominated person(s) are not on-site, the contact details for the deputy shall be supplied. For an unstaffed facility, a list of 24 hour emergency contact names and telephone numbers shall be supplied.
(e)	Minimum and maximum number of employees expected to be on site at any one time.
(f)	Emergency resources on site, for example, personnel, emergency equipment, gas detectors and wind velocity detectors.
(g)	On-site and off-site warning systems.
(h)	Communication systems on-site.
(i)	Arrangements for providing early warning of a major accident to emergency services, the type of information to be initially provided, and arrangements for providing more detailed information as it becomes available.
(j)	Arrangements for providing assistance with off-site mitigatory action.
(k)	Inventory of hazardous materials on-site, whether stored or produced.
(l)	Transport facilities likely to be affected by a major accident, for example, road, rail, airport or shipping.
(m)	Emergency planning assumptions, for example, emergency measures planned for identified major accidents, area likely to be affected, timescale of events, protection of the community, including other closely located facilities, and the built and natural environment.
(n)	Control points and procedures for utilities, for example, gas, water and electricity.
(o)	Containment procedures for spillage of hazardous materials, especially where pollutants are stored.
(p)	Decontamination procedures necessary following a major accident.

9.10 An on-site emergency plan should also contain:

(a) a scale plan of the major hazard facility; and

(b) a list of all scheduled materials or other hazardous materials present, including:

(i) the quantities involved,

(ii) their location in relation to the surrounding site area, and

(iii) concentrations of people on site, such as in offices and workshops.

9.11 Both off-site and on-site emergency plans should also include the following:

(a) arrangements for notifying the relevant public authority in the event of a major accident;

(b) site security in the event of a major accident;

(c) personal protection of emergency response teams;

(d) provision of information to the community in the event of an emergency, consistent with Chapter 12 of the national standard;

(e) application of the plans to natural disasters; and

(f) off-site sources of assistance, such as sources of mutual aid.

UPDATING EMERGENCY PLANS

Extract from the National Standard

9.5 The Operator shall update the on-site and off-site emergency plans and the information provided to emergency services:

(a) in conjunction with the updating of the safety report;

(b) when a major accident, near miss or an effectiveness test indicates the need to do so; or

(c) at the specific request of the relevant public authority.

9.12 Effectiveness tests may include table-top exercises, actual emergency response to simulated major accidents and other exercises.

Extract from the National Standard

9.6 The Operator shall ensure that updating of the on-site and off-site emergency plans takes into account all relevant alterations to the major hazard facility. Updating of the off-site emergency plan shall also take changes to surrounding land use into account.

9.13 Emergency plans are to be reassessed and updated as necessary. Reassessment and update would be necessary, in particular, following:

(a) the review and update of the risk assessment and risk controls at the major hazard facility made in accordance with sub-section 6.4 of the national standard;

(b) the review, update and amendment of the safety report made in accordance with sub-sections 7.8 and 7.9 of the national standard; and

(c) changes in relevant details such as contact numbers and resources.

TESTING EMERGENCY PLANS

Extract from the National Standard

9.7 The Operator shall ensure that the on-site and off-site emergency plans are tested, evaluated and updated at intervals necessary to ensure the effectiveness of the plans.

9.14 Emergency plans should be tested when first devised, and afterwards at suitable intervals.

9.15 Simulated emergencies and other exercises should systematically attempt to involve all people likely to be involved in a major accident. These exercises should include practical drills.

CONSULTATION

Extract from the National Standard

9.8 The Operator shall ensure that the on-site and off-site emergency plans are prepared and updated in consultation with employees and employee representatives through cooperative mechanisms and with emergency services.

9.9 The Operator shall ensure that the on-site and off-site emergency plans are readily accessible to employees and employee representatives.

9.16 Guidance on consultation with employees and employee representatives is provided in Chapter 11 of this national code of practice.

10. REPORTING OF MAJOR ACCIDENTS AND NEAR MISSES

INTRODUCTION

10.1 The investigation and reporting of major accidents and near misses is intended to identify the causes of the event and prevent similar or more serious occurrences in the future.

10.2 The investigation of major accidents should identify the underlying causes that may have led to the accident. These may include unsafe practices, inadequate equipment and procedures or external events.

10.3 The term 'near miss' recognises that major accidents may be prevented by investigating and acting on those situations that could have led to a major accident if it were not for mitigating circumstances.

10.4 Near misses should be treated as learning experiences to prevent a recurrence.

NOTIFICATION OF A MAJOR ACCIDENT

Extract from the National Standard

10.1 The Operator shall provide written notification to the relevant public authority of any major accident at the major hazard facility. This notification shall be provided within 24 hours of the major accident.

10.5 Chapter 4 of the national standard defines a major accident as:

'... a sudden occurrence (including, in particular, a major emission, loss of containment, fire, explosion or release of energy) leading to serious danger or harm to people, property or the built or natural environment, whether immediate or delayed.'

10.6 The Operator shall provide notification of any major accident to the relevant public authority. The initial notification should be conveyed by telephone or facsimile. If conveyed by telephone, the notification should be subsequently confirmed, in writing or by facsimile, within 24 hours. Appendix 4 provides information about the timing for this and other requirements of the national standard.

10.7 The notification should include available information necessary for an initial evaluation of the major accident, such as:

(a) the name or trade name and the address or location of the major hazard facility where the major accident occurred;

(b) the contact person and phone number at the major hazard facility;

(c) the nature of the events that occurred, for example, explosion, fire or release of toxic materials;

(d) time and date of the events;

(e) the materials involved and their approximate quantity, if known;

(f) an indication of the possible acute effects on people and the natural environment; and

(g) the initial measures taken to minimise the consequences, including the emergency measures taken on-site or off-site.

INVESTIGATION AND REPORTING OF MAJOR ACCIDENTS

Extract from the National Standard

10.2 The Operator shall, within a period of time specified by the relevant public authority, thoroughly investigate any major accident at the major hazard facility, and provide a written report to the relevant public authority**.**

10.8 The Operator is responsible for ensuring the prompt investigation and thorough analysis of all major accidents. The Operator must cooperate with any statutory investigation into a major accident undertaken by the relevant public authority.

10.9 The time allowed to complete the investigation and submit the written major accident report should be agreed between the Operator and the relevant public authority. While the time required will depend on the complexity of the major accident, every effort should be made to complete all investigations within six months.

10.10 The investigation into the major accident should, as far as practicable, establish all the causes that contributed to the major accident.

CONTENT OF THE MAJOR ACCIDENT REPORT

Extract from the National Standard

10.3 The written report shall include at least the following information about the major accident:

(a) the nature and timing of the events that occurred;

(b) the materials involved, and the amounts of each;

(c) the cause of the major accident;

(d) the effects of the major accident on people, property and the built and natural environment;

(e) what clean-up methods were used;

(f) the effectiveness of emergency plans and procedures; and

(g) actions which will be taken to prevent similar occurrences.

10.11 The following information is a useful amplification of the requirements of the national standard. When reporting a major accident, the Operator should provide:

(a) a summary of the injuries and an assessment of the potential effects of any exposures on people and the natural environment;

(b) an analysis of the causes and contributing factors of the major accident;

(c) the steps taken to mitigate the effects, acute as well as long term;

(d) the action already taken to prevent similar occurrences;

(e) lessons learnt for the safety of the major hazard facility;

(f) problems which occurred during the response to the accident; and

(g) subsequent changes made to the safety management system and the safety report, where appropriate.

10.12 In considering the actions to be taken to prevent similar occurrences, the Operator should consider other likely circumstances that could impact on possible future events. For example, the severity and chain of events leading to a major accident could have been otherwise influenced by different circumstances, such as:

(a) weather conditions;

(b) the time of occurrence; or

(c) quantities of scheduled materials or other materials present.

REPORTING NEAR MISSES

Extract from the National Standard

10.4 The Operator shall report to the relevant public authority, in accordance with the procedure for major accidents, any near miss which meets or exceeds defined criteria agreed to with the relevant public authority.

10.13 In Chapter 4 of the national standard, a 'near miss' is defined as:

'... any sudden event which, but for mitigation effects, actions or systems, could have escalated to a major accident'.

10.14 The investigation of near misses should be an integral part of the safety management system for the major hazard facility. Near misses which meet or exceed the criteria agreed between the Operator and the relevant public authority must be reported. Suggested criteria are provided at Appendix 3.

10.15 The investigation of a near miss should aim to prevent major accidents and the occurrence of similar events in the future by:

(a) identifying all the immediate and underlying causes;

(b) formulating corrective action plans (short term and long term) to deal with the causes;

(c) where possible, assigning individual responsibility and reasonable time limits to complete the corrective action plans; and

(d) monitoring the completion of the corrective action plans.

DISCUSSION AND CONSULTATION WITH EMPLOYEES AND EMPLOYEE REPRESENTATIVES

Extract from the National Standard

10.5 The Operator shall record and discuss the lessons learnt and the analyses of major accidents and near misses with employees and employee representatives.

10.6 The Operator shall consult with employees and employee representatives at a major hazard facility in the preparation of reports on major accidents and near misses through cooperative mechanisms.

10.16 Discussions with employees and employee representatives provide the Operator with the opportunity to consult with employees and employee representatives in the preparation of major accident or near miss reports.

10.17 The Operator should encourage employees and employee representatives to review major accidents and near misses after they have been analysed and the learning points determined and reported. These discussions may take place at workplace health and safety meetings or any other appropriate forums. Employees may also be informed through the use of bulletin boards and staff newsletters. Safety bulletins may also be useful. These should clearly and concisely describe what happened, the causes and the corrective action which will be taken and the timetable for the completion of this corrective action.

10.18 Guidance on consultation with employees and employee representatives is provided in Chapter 11 of this national code of practice.

ACCESS TO, AND RETENTION OF, REPORTS

Extract from the National Standard

10.7 The Operator shall ensure that employees and employee representatives have access to reports on major accidents and near misses.

10.8 The Operator of a major hazard facility shall keep a copy of every major accident report for the lifetime of the facility.

10.19 Reports on major accidents and near misses should be kept on-site in a safe and secure place, and a copy held in a place readily accessible to employees and employee representatives.

10.20 Reports on major accidents and near misses should be kept for the following purposes:

(a) as a permanent record of the circumstances of the major accident;

(b) to enable future evaluation of the emergency measures taken and their effectiveness; and

(c) to enable future evaluation of the possible long term effects of the major accident on people and the natural environment.

10.21 The Operator may use a computer database to store the key elements of major accidents or near misses, to highlight particular trends and manage possible future events of a similar nature at the major hazard facility.

11. RESPONSIBILITIES OF EMPLOYEES AND EMPLOYEE REPRESENTATIVES

INTRODUCTION

11.1 The national standard refers, in different chapters, to a number of issues associated with employees and employee representatives. For ease of reference, these issues, such as the provision for consultation, are covered in this chapter.

Extract from the National Standard

11.1 Employees and employee representatives at a major hazard facility, including contractors and their employees, shall, to the extent to which they are capable, that is, within their competency and skills:

(a) comply with all procedures and practices relating to the prevention and control of major accidents within the major hazard facility;

(b) comply with all emergency procedures should a major accident or a near miss occur;

(c) report promptly to the Operator any matters of which they are aware that may affect the Operator's compliance with the provisions of this national standard;

(d) within the scope of their job, and without being placed at any disadvantage, take corrective action and, if necessary, interrupt the operation of a major hazard facility where, on the basis of their training and experience, they have reasonable justification to believe that there is an imminent danger of a major accident, and notify their supervisor or raise the alarm, as appropriate, before, or as soon as possible after, taking such action; and

(e) discuss with the Operator any potential hazards that they consider are capable of generating a major accident, and they also have the right to notify the relevant public authority of those hazards.

ACCESS TO INFORMATION

11.2 Employees and employee representatives at a major hazard facility should:

(a) be adequately informed by the Operator of the hazards and risk associated with the major hazard facility, and their possible consequences, with the information provided including:

(i) the chemical names, the hazardous properties and a Material Safety Data Sheet for each of the scheduled materials present,

(ii) the safety precautions to be taken at the major hazard facility,

(iii) the details of the on-site and off-site emergency plans in case of a major accident or near miss, and

(iv) the details of their duties in the event of an emergency;

(b) have access to the following documents:

(i) the documented safety management system,

(ii) the safety report,

(iii) emergency plans and procedures, and

(iv) reports on major accidents and near misses;

(c) be informed of any recommendations or directions made by the relevant public authority to ensure the safe operation of the major hazard facility; and

(d) have the opportunity to participate in discussions about the lessons learnt and the analysis of major accidents and near misses.

CONSULTATION

11.3 Employees and employee representatives at a major hazard facility should be consulted through appropriate consultative mechanisms in order to promote the safe operation of the major hazard facility. In particular, employees and employee representatives should be consulted about:

(a) hazard identification, risk assessment and risk control at the major hazard facility, including the updating of the risk assessment and risk controls in accordance with sub-sections 6.1 and 6.2 of the national standard;

(b) the establishment, implementation and maintenance of the safety management system in accordance with sub-section 6.3 of the national standard;

(c) the preparation and updating of the safety report and emergency plans in accordance with sub-sections 7.6 and 9.8 of the national standard;

(d) the preparation of reports on major accidents and near misses in accordance with sub-section 10.6 of the national standard; and

(e) the development, monitoring, review, updating and recording of induction, education and training in accordance with sub-section 8.4 of the national standard.

11.4 Cooperative mechanisms for consultation should:

(a) be agreed between the Operator, the employees and employee representatives;

(b) be relevant to the particular major hazard facility; and

(c) enable adequate representation of employees and employee representatives.

11.5 Cooperative mechanisms for consultation may include:

(a) the occupational health and safety committee;

(b) regular group safety meetings;

(c) tool box meetings;

(d) discussions during regular safety inspections or 'walk through' surveys;

(e) informal discussions; and

(f) other forums, as relevant.

12. COMMUNITY INFORMATION

INTRODUCTION

12.1 The Operator should provide information to the community, including nearby facilities, to:

(a) inform the community about the measures taken to prevent major accidents and mitigate the consequences of a major accident;

(b) enable the community to respond appropriately in the event of a major accident;

(c) enable the community to consult with the Operator about the issues associated with public and environmental health and safety (***see*** sub-section 7.7 of the national standard); and

(d) enable the community to consult with the Operator during the preparation of off-site emergency plans (***see*** sub-section 9.1(d) of the national standard).

PROVISION OF COMMUNITY INFORMATION

Extract from the National Standard

12.1 The Operator, in consultation with the relevant public authority and the community, including other closely located facilities, shall ensure that:

(a) information on safety measures and the appropriate response in the case of a major accident is provided to the community, including other closely located facilities, without their having to request it;

12.2 The term 'community' principally includes those people having a direct interest in the major hazard facility, such as other nearby facilities or industries and neighbouring residents.

12.3 The Operator, in consultation with the relevant public authority and, where appropriate, representatives of the community, should determine the limits of the 'community information area' based on the area in which people may be affected by a major accident. The Operator may use the results of risk assessment studies of the major hazard facility as a guide to determining the community information area.

12.4 The Operator shall provide information to people within the community information area without their having to request it. Appendix 4 provides information about the timing for this and other requirements of the national standard.

12.5 The Operator should provide access to information about the major hazard facility to members of the community outside the community information area, such as residents along transport corridors, if requested. The Operator may provide this information directly. Information may also be provided to public facilities, such as libraries or civic centres.

12.6 The Operator should establish mechanisms to facilitate consultation with the community concerning the type of information the community would like to receive about the major hazard facility and the information which may be made available.

12.7 The Operator should ensure that information provided to the community is presented in a clear, efficient and user-friendly way.

12.8 The information provided should:

(a) use straightforward terms;

(b) avoid complicated technical expressions, as far as practical;

(c) explain technical terms and acronyms where their use is considered necessary;

(d) be readily understood by a lay person; and

(e) be in relevant languages.

12.9 The Operator may use a number of different methods to disseminate information to the community, including:

(a) community consultation/liaison panels;

(b) site visits;

(c) community newsletters;

(d) letter box drops;

(e) advertisements or articles in local newspapers; and

(f) provision of information in public facilities, such as libraries or civic centres.

12.10 The Operator should consider the most effective ways to provide information to the community, taking into account the different target groups that are present, such as schools, hospitals and homes for the aged.

Extract from the National Standard

12.1 The Operator, in consultation with the relevant public authority and the community, including other closely located facilities, shall ensure that:

(b) updated information is provided at appropriate intervals; and

12.11 The Operator should consider providing updated information:

(a) whenever the safety report is revised, updated and amended (***see*** sub-section 7.8 of the national standard);

(b) prior to any significant changes to the major hazard facility, including amendments to emergency response plans and safety measures (***see*** sub-section 12.2 of the national standard);

(c) at the specific request of the relevant public authority;

(d) following changes in the adjacent land use or population around the major hazard facility; and

(e) at other appropriate time intervals if no recent updates have been made.

12.12 Following a major accident, the Operator should review the community information and, where necessary, provide revised information to the community.

Extract from the National Standard

12.1 The Operator, in consultation with the relevant public authority and the community, including other closely located facilities, shall ensure that:

(c) warning is given as early as possible in the case of a major accident.

12.13 Warning provided to the community in the case of a major accident should be consistent with the off-site emergency plans.

PRIOR NOTIFICATION OF SIGNIFICANT SITE CHANGES

Extract from the National Standard

12.2 The Operator shall provide the community, including other closely located facilities, with relevant information on significant site changes to a major hazard facility, including amendments to emergency plans and safety measures, before those changes are made.

12.14 In providing the community with information about significant site changes, the Operator should:

(a) include an explanation of the proposed variations to the activities undertaken at the major hazard facility and the nature of any related hazards; and

(b) ensure that the information provided on changes to off-site emergency plans is coordinated and consistent with the off-site emergency plans required in Schedule 2 of the national standard.

CONTENT OF INFORMATION PROVIDED TO THE COMMUNITY

Extract from the National Standard

12.3 The information provided to the community, including other closely located facilities, shall contain at least the following information:

(a) the name and location of the major hazard facility;

(b) the name, title and telephone number of the contact person from whom further information can be obtained;

(c) an explanation, in plain English, of the activities undertaken at the major hazard facility, including the hazardous materials used or produced there;

12.15 The Operator should provide information, as appropriate, on:

(a) principal processes and products;

(b) inputs, outputs and storage of scheduled materials;

(c) transportation to and from the major hazard facility; and

(d) waste treatment and disposal.

Extract from the National Standard

12.3 The information provided to the community, including other closely located facilities, shall contain at least the following information:

(d) general information about the nature of the hazards related to the major hazard facility, including their potential effects on people, property and the built and natural environment;

12.16 The Operator should provide, as appropriate, to the major hazard facility:

(a) the names of the scheduled materials present at the major hazard facility;

(b) the nature of hazards capable of causing serious danger or harm off-site to people, property and the built and natural environment;

(c) arrangements made to control the hazards and the likelihood of a major accident; and

(d) details of where further explanatory information may be obtained.

Extract from the National Standard

12.3 The information provided to the community, including other closely located facilities, shall contain at least the following information:

(e) the means by which people likely to be affected by a major accident will be warned and kept informed in the event of a major accident;

12.17 The Operator should provide, as appropriate to the major hazard facility, and consistent with the off-site emergency plans, information on:

(a) off-site warning systems;

(b) arrangements for the testing of warning systems;

(c) how to recognise the early signs of a major accident in case a timely warning is not given;

(d) use of radios, television or designated emergency telephones; and

(e) a 24 hour emergency contact telephone number.

12.18 The information provided should cater for:

(a) The special needs and requirements of certain groups within the community, such as schools, hospitals and homes for the aged. For example, the provision of information on preplanned emergency procedures may be useful for these groups.

(b) Effective communication to children and non-English speaking people.

12.19 Durable cards giving illustrated and summarised safety instructions may be used to reinforce the essential information about the means of warning and safety actions that should be taken.

Extract from the National Standard

12.3 The information provided to the community, including other closely located facilities, shall contain at least the following information:

(f) the actions people should take in the event of a major accident; and

12.20 The Operator should provide specific and practical information about the appropriate behaviour and safety measures that should be taken in the event of a major accident. This information should include, as appropriate:

(a) the use of a place of shelter to increase protection;

(b) steps to reduce exposure to toxic materials;

(c) first aid and remedial treatment;

(d) sources of further information, for example, radio and television;

(e) advice on telephone use in the event that lines need to be kept free for emergency use; and

(f) the need to follow advice given by emergency services.

Extract from the National Standard

12.3 The information provided to the community, including other closely located facilities, shall contain at least the following information:

(g) relevant information about the off-site emergency plans.

12.21 The Operator should provide, as appropriate to the major hazard facility, a description of the off-site emergency plans.

12.22 The Operator should consult with the community, where appropriate, during any testing or updating of the off-site emergency plans.

13. SECURITY

INTRODUCTION

13.1 The Operator is responsible for ensuring the security of, and controlling access to, the major hazard facility.

PROTECTION FROM UNAUTHORISED PERSONS

Extract from the National Standard

13.1 The Operator of a major hazard facility shall, as appropriate to the risk, take all practicable precautions to protect the major hazard facility from action by an unauthorised person.

13.2 Security at the major hazard facility shall be applied to all elements which affect the safe operation of the facility, including document, computer hardware and software and boundary security.

13.2 In developing suitable security systems and procedures for a major hazard facility, the Operator should consider the following factors:

(a) the nature and size of the potential hazard;

(b) the location of the major hazard facility, including the nature of the surrounding community and environment;

(c) the likelihood of mischief or sabotage;

(d) the integrity and reliability of security system hardware and design;

(e) the security and back-up of documentation;

(f) the back-up support for security systems and personnel;

(g) computer security, for example, access and changes to hardware and software; and

(h) whether parts of the major hazard facility need higher levels of security.

CONTROLLING ACCESS

Extract from the National Standard

13.3 The Operator shall provide a system to control access of all persons to the major hazard facility at all times.

13.3 A system to control the access of all persons to the major hazard facility should include:

(a) the means to identify the extent of access for each person;

(b) the means to account for all persons on-site at any given time, for example, by the use of a logbook; and

(c) security measures for visitors.

14. CONFIDENTIALITY OF INFORMATION

INTRODUCTION

14.1 Confidential information provided by the Operator to the relevant public authority is already protected by relevant legislation. However, Freedom of Information legislation may require the relevant public authority to release information which is not exempt from release under Freedom of Information legislation. Freedom of Information legislation may also provide for appeal by the Operator against the release of information.

PROTECTION OF INFORMATION

Extract from the National Standard

14.1 The relevant public authority shall protect confidential information provided by the Operator of a major hazard facility, so long as this does not compromise the safety of people, property or the built or natural environment.

14.2 Confidential information determined by the relevant public authority to be related to national security shall be exempt from disclosure.

14.2 The relevant public authority would be expected to:

(a) consult with the Operator and seek the Operator's consent before releasing any information requested by a third party; and

(b) inform the Operator of Freedom of Information legislative requirements to release information provided by the Operator, and the Operator's appeal rights in relation to these requirements.

14.3 The Operator may assist the relevant public authority by indicating what information is not confidential and may be provided to a third party on request.

14.4 The relevant public authority should discuss with the Operator how it determines what information is related to national security.

15. ROLE OF THE RELEVANT PUBLIC AUTHORITY

INTRODUCTION

15.1 The safety of a major hazard facility is primarily the responsibility of the Operator of the major hazard facility. The relevant public authority, however, is responsible for administering the national standard. To administer the national standard, the relevant public authority, in consultation with the relevant parties, should establish procedures to communicate with Operators of major hazard facilities and persons in charge of facilities required to provide notification of the facility in accordance with Chapter 5 of the national standard.

15.2 In accordance with sub-section 14.1 of the national standard, the relevant public authority shall protect confidential information supplied by the Operator, so long as the safety of people, property and the built and natural environment is not compromised.

ADMINISTRATION OF THE NATIONAL STANDARD

Extract from the National Standard

15.1 The role of the relevant public authority is to administer the *National Standard for the Control of Major Hazard Facilities* [NOHSC:1014(1996)]. This includes:

(a) receiving notification from Operators;

(b) classifying a major hazard facility in accordance with this national standard;

(c) receiving safety reports and giving assurances to government that an appropriate level of safety applies, so long as the provisions are properly implemented;

(d) consulting and coordinating with other relevant public agencies, consulting with Operators and, where appropriate, employees and employee representatives;

(e) receiving and reviewing reports of major accidents and near misses;

(f) receiving assurances, as referred to in sub-section 7.10 of this national standard; and

(g) ensuring an appeal mechanism is provided for Operators, employees and employee representatives aggrieved by a decision of the relevant public authority in relation to the provisions of this national standard.

15.3 The relevant public authority has a responsibility to lead and coordinate the implementation of systems for the administration of the national standard. In particular, the relevant public authority should monitor the following:

(a) that the Operator has made arrangements for off-site preparedness in the event of a major accident, that is:

(i) the Operator has established and updated emergency plans in accordance with Chapter 9 of the national standard, and

(ii) the Operator has disseminated information to the community in accordance with Chapter 12 of the national standard;

(b) the coordination of, or participation in, land use planning for the siting of major hazard facilities;

(c) that the Operator has established a system of assurance for the safety management system in accordance with sub-section 7.10 of the national standard (this may involve site inspections and reviewing the assessment of the safety management system); and

(d) the review of major accident and near miss reports and the distribution of learning points to interested parties.

GIVING DIRECTION TO ENSURE SAFETY

Extract from the National Standard

15.2 The relevant public authority may give direction to the Operator of a major hazard facility for the purpose of ensuring the safety of people, property, the built or natural environment and any occupants in or on the facility.

15.4 Giving direction is a standard regulatory function of the relevant public authority. The purpose of giving direction is to ensure the safe operation of a major hazard facility, especially where an Operator has not met the requirements of the national standard.

15.5 In giving direction to an Operator, the relevant public authority should advise the Operator in writing of the reasons for the direction.

ACCEPTING COMPLIANCE WITH EQUIVALENT LEGISLATION

Extract from the National Standard

15.3 Where a major hazard facility meets existing legislative requirements which match or exceed the requirements of this national standard, the relevant public authority should accept compliance with those existing requirements as meeting the requirements of this national standard.

15.6 The relevant public authority should accept an Operator's compliance with existing legislation which matches or exceeds the requirements of the national standard. The aim of this section of the national standard is to avoid duplication of effort by Operators in meeting regulatory requirements and in operating safely.

15.7 The application of this provision is at the discretion of the relevant public authority. In some cases, compliance with other legislation may be accepted by the relevant public authority as meeting only certain requirements of the national standard.

15.8 When the relevant public authority accepts that a major hazard facility complies with existing legislation which matches or exceeds the requirements of the national standard, in part or in full, the relevant public authority should advise the Operator of the reasons for this acceptance in writing.

15.9 Legislation which covers the following activities, for example, could be considered by the relevant public authority as matching or exceeding certain provisions of the national standard:

(a) off-shore oil and gas facilities;

(b) control of radioactive materials;

(c) sources of ionising radiation;

(d) underground and above ground mining; and

(e) transport of scheduled materials in pipelines beyond the boundary of the major hazard facility.

16. APPLICATION OF SCHEDULE 1 OF THE NATIONAL STANDARD: THE IDENTIFICATION OF A MAJOR HAZARD FACILITY

INTRODUCTION

16.1 This chapter explains how to use Schedule 1 of the national standard to determine whether a facility is required to notify in accordance with sub-section 5.1 of the national standard or whether a facility is classified as a major hazard facility.

16.2 In particular, this chapter explains how to calculate the quantities of scheduled materials present, how to select the appropriate threshold quantity from Table 1 or Table 2 in Schedule 1, and how to calculate the aggregation rule.

APPLICATION OF SCHEDULE 1 OF THE NATIONAL STANDARD

Extract from the National Standard

S1.1 A major hazard facility is an area where an activity takes place involving any of the materials listed in Table 1 or 2 following, and where the:

(a) amount of any material present, or likely to be present, exceeds the corresponding threshold quantity; or

(b) the following aggregation rule exceeds 1:

$$\frac{q_x}{Q_x} + \frac{q_y}{Q_y} + \ldots + \frac{q_n}{Q_n}$$

Where:

q_x, q_y ..... q_n *is the total amount of each material present or likely to be present in an isolated amount greater than two per cent of the corresponding threshold quantity;*

Q_x, Q_y ..... Q_n *is the threshold quantity specified in Table 1 or 2 for the particular material.*

S1.2 For the purposes of sub-section S1.1 above, the amount of any material present, or likely to be present, at the facility must include the:

(a) maximum amount of the material normally present in process vessels and interconnecting piping systems;

(b) maximum capacity of storage tanks and vessels;

(c) maximum quantity of the material that is likely to be present in package storage areas; and

(d) the maximum quantity of the material contained in pipelines outside process areas or the maximum quantity of the material that could escape from a pipeline in the event of its catastrophic failure.

Isolated quantities of materials which do not exceed two per cent of the corresponding threshold quantity need not be included in the estimation of the maximum quantity of a material.

S1.3	The following rules apply to the determination of threshold quantities from Tables 1 and 2.
(a)	If the material is specifically listed in Table 1, the threshold quantity shall be determined from Table 1.
(b)	If a material is not specifically listed in Table 1, the appropriate threshold quantity shall be determined from Table 2 for the description which best applies to the material.
(c)	If more than one of the descriptions in Table 2 applies to a material, the description with the lowest threshold quantity shall be used.

16.3 The quantity of each scheduled material present, or likely to be present, should include all quantities at the facility, including materials in storage, process, pipelines and internal site transport, and in port facilities.

16.4 These quantities must be the maximum present, or likely to be present, at the facility, taking into account possible daily, seasonal or other variations.

16.5 For scheduled materials stored in tanks or other storage vessels, the quantity to be used is the capacity of the tank or vessel. For package stores, the quantity is the maximum likely to be present at any time. For process vessels, the quantity is the maximum quantity normally present in the process vessels and connecting piping. For pipelines, the quantity is the maximum quantity contained in pipelines outside process areas, or the most that could escape in a catastrophic failure of a pipeline. Example 1 shows how to calculate the maximum quantity of a scheduled material present, for example, LP gas, in pipelines and bulk storage.

16.6 If a scheduled material is likely to be produced under abnormal conditions at the facility, the likely quantities that would be produced should also be included.

16.7 If a scheduled material is present in an isolated quantity, and the quantity does not exceed two per cent of the corresponding threshold quantity, then this quantity is not required to be included in the calculations.

16.8 An isolated quantity of a scheduled material is an amount which is itself incapable of causing or initiating a major accident at the facility.

16.9 If a scheduled material is part of a mixture, the quantity in the calculation of scheduled materials present should be determined according to Example 2.

EXAMPLE 1: CALCULATING THE MAXIMUM QUANTITY OF SCHEDULED MATERIALS PRESENT, FOR EXAMPLE, LP GAS, IN PIPELINES AND BULK STORAGE

In this example, LP gas is used at the facility to provide process heating and is present in bulk storage and pipelines to process heating units. The total quantity of LP gas is calculated as follows:

Quantity of LP Gas Present in Process

LP gas is present in six pipeline systems each containing 0.15 tonnes. Therefore, the total quantity present in the pipelines is 6 x 0.15 tonnes = 0.9 tonnes.

Quantity of LP Gas Present in Storage

Bulk storage consists of four tanks with a total maximum capacity of 204 tonnes.

Total Quantity of LP Gas Present

The total quantity of LP gas present is 0.9 + 204 tonnes = 204.9 tonnes.

Conclusion

The threshold quantity for LP gas in Table 1 of Schedule 1 of the national standard is 200 tonnes. Because the total quantity of LP gas present exceeds the threshold quantity, the facility is classified as a major hazard facility.

EXAMPLE 2: CALCULATING THE TOTAL QUANTITY OF SCHEDULED MATERIALS PRESENT IN MIXTURE(S) OF MATERIALS

In this example, formaldehyde is the only scheduled material present at the facility and is kept in process vessels, bulk storage and drums at a range of different concentrations. The total quantity of 100 per cent formaldehyde present is calculated as follows:

Quantity of 100 per cent Formaldehyde Present in Process

Formaldehyde is present in process at 9.5 tonnes of 10 per cent w/w solution of formaldehyde in water, plus 0.5 tonnes of 10 per cent w/w solution of formaldehyde in pipelines.

The total quantity of 10 per cent w/w solution of formaldehyde present in process is 9.5 + 0.5 tonnes = 10 tonnes. Therefore, the total quantity of 100 per cent formaldehyde present is 0.1 x 10 tonnes = 1 tonne.

Quantity of 100 per cent Formaldehyde Quantity Present in Storage

Bulk storage contains 20 tonnes of 12 per cent w/w solution of formaldehyde in water. Therefore, the total quantity of 100 per cent formaldehyde present in bulk storage is 0.12 x 20 tonnes or 2.4 tonnes.

Drums in storage contain five tonnes of 12 per cent w/w solution of formaldehyde in water. Therefore, the total quantity of 100 per cent formaldehyde present in stored drums is 0.12 x 5 tonnes = 0.6 tonne.

Total Quantity of 100 per cent Formaldehyde Present at the Facility

The total quantity of 100 per cent formaldehyde present at the facility is calculated by adding together all the quantities of 100 per cent formaldehyde present in process and in storage, that is:

Total quantity present = 1 + 2.4 + 0.6 tonnes = 4 tonnes.

Conclusion

The threshold quantity for 100 per cent formaldehyde in Table 1 of Schedule 1 of the national standard is 50 tonnes. Because the total quantity present is less than 10 per cent of the threshold quantity, notification in accordance with section 5.1 of the national standard is not required for this facility.

16.10 A simple way to calculate the aggregation rule is given in Examples 3, 4 and 5 below.

EXAMPLE 3: CALCULATING THE AGGREGATION RULE—A GENERAL EXAMPLE

In this example, there are 10 tonnes of hydrogen sulphide, 15 tonnes of chlorine and 0.5 tonnes of phosgene present at the facility. In accordance with the aggregation rule, q_X is 10, q_Y is 15 and q_Z is 0.5 (see Column 2 of the table below). The threshold quantities for hydrogen sulfide, chlorine and phosgene in Table 1 of Schedule 1 of the national standard are 50, 25 and 0.75 tonnes, respectively. Therefore, Q_X is 50, Q_Y is 25 and Q_Z is 0.75 (see Column 3 of the table below).

Column 4 of the table is used to calculate the ratio of scheduled materials present to the corresponding threshold quantities of materials listed in Schedule 1. The aggregate quantity of scheduled materials is calculated by adding all the ratios listed in Column 4. Where the aggregate quantity calculated exceeds 1, then the facility is classified as a major hazard facility.

COLUMN 1	**COLUMN 2**	**COLUMN 3**	**COLUMN 4**
SCHEDULED MATERIALS PRESENT	MAXIMUM QUANTITY PRESENT (tonnes) qn	THRESHOLD QUANTITY (tonnes) Qn	RATIO OF THRESHOLD qn/Qn
Hydrogen sulfide	10	50	0.2
Chlorine	15	25	0.6
Phosgene	0.5	0.75	0.67
AGGREGATION SUM			**1.47**

Conclusion

In this case, the aggregation sum is greater than 0.1, so notification in accordance with section 5.1 of the national standard is required for this facility. This facility would also be classified as a major hazard facility because the aggregation sum is greater than 1.

EXAMPLE 4: CALCULATING THE AGGREGATION RULE FOR A PROCESS FACILITY

In this example, a process facility uses 51 per cent w/w ammonia in water to produce a product containing 5.0 per cent w/w ammonia in water blended with other ingredients. The facility also uses LP gas for process heating. The maximum amount normally present in process vessels, bulk storage and packages is used to calculate the aggregation rule.

Quantity of Ammonia Present in Process

20 tonnes of 51 per cent w/w ammonia in water plus 0.4 tonnes of 51 per cent w/w ammonia in solution are contained in pipelines. The total quantity in process of 51 per cent w/w ammonia in water is 20.4 tonnes = 10.4 tonnes equivalent 100 per cent w/w ammonia.

Quantity of Ammonia Present in Storage

Bulk storage contains 24 tonnes of 51 per cent w/w ammonia in water plus 10 tonnes of 100 per cent w/w ammonia in drums. Therefore, the equivalent 100 per cent ammonia is 10 + (0.51 x 24) tonnes = 22.2 tonnes.

Drums in storage contain 20 tonnes of 5.0 per cent w/w ammonia in water.

Packages contain 30 tonnes of 5.0 per cent w/w ammonia in water.

Note: The quantity of 5.0 per cent w/w ammonia in drums and packages is not included in the calculation of the aggregation rule, because the 5.0 per cent w/w ammonia present is below the 50 per cent w/w listed in Table 1 of Schedule 1 of the national standard.

Total Quantity of 100 per cent Ammonia Present

The total quantity of 100 per cent ammonia present at the facility is calculated by adding together all the quantities of 100 per cent ammonia present in process and in storage, that is:

The total quantity of 100 per cent ammonia present = 10.4 + 22.2 tonnes = 32.6 tonnes.

Quantity of LP Gas Present

20 tonnes of LP gas present in bulk storage.

EXAMPLE 4: CALCULATING THE AGGREGATION RULE FOR A PROCESS FACILITY (CONTINUED)

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
SCHEDULED MATERIALS PRESENT	MAXIMUM QUANTITY PRESENT (tonnes) qn	THRESHOLD QUANTITY (tonnes) Qn	RATIO OF THRESHOLD qn/Qn
Ammonia (100 per cent)	32.6	200	0.16
LP gas	20.0	200	0.10
AGGREGATION SUM			**0.26**

Conclusion

In this case, the aggregation sum is greater than 0.1, so notification in accordance with section 5.1 of the national standard is required for this facility.

EXAMPLE 5: CALCULATING THE AGGREGATION RULE FOR A WAREHOUSE FACILITY

A warehouse for goods storage is used in this example.

Inventory

The maximum amount normally present in storage is used to calculate the aggregation rule.

Chlorine:	2,000 kg in cylinders.
Ethylene oxide:	4,000 kg in cylinders.
Flammable liquids (Class 3, Packaging Group III):	500 tonnes in drums not isolated from the warehouse.
LP gas:	40 tonnes in bulk storage not isolated from the warehouse.

COLUMN 1	COLUMN 2	COLUMN 3	COLUMN 4
SCHEDULED MATERIALS PRESENT	MAXIMUM QUANTITY PRESENT (tonnes) qn	THRESHOLD QUANTITY (tonnes) Qn	RATIO OF THRESHOLD qn/Qn
Chlorine	2.00	25	0.08
Ethylene oxide	4.00	50	0.08
Flammable liquids (Class 3, PG III)	500.00	50,000	0.01
LP gas	40	200	0.2
AGGREGATION SUM			**0.37**

Conclusion

In this case, the aggregation sum is greater than 0.1, so notification in accordance with sub-section 5.1 of the national standard is required for this facility.

APPENDIX 1

SAMPLE HAZARD IDENTIFICATION WORD DIAGRAM[6]

FUNCTIONAL / OPERATIONAL AREA	POSSIBLE INITIATING EVENTS	POSSIBLE CONSEQUENCES	PREVENTION / PROTECTION MEASURES
Tanks containing flammable liquids	* Tank roof collapse	* Tank fire or rim fire	* Regular maintenance
			* Foam injection systems
	* Ignition during maintenance	* Possible escalation to other tanks or bund fire	* External water cooling systems
	* Lightning	* Explosion of vapours in tanks	* Flame arresters on vents
	* Ignition by static electricity	* Pollution via firefighting water	* Earthing straps
			* Control of ignition sources
			* Adequate purging prior to maintenance
			* Adequate bunding
Bunds containing flammable liquids tanks	* Leak from tank or pipework	* Pool fire or full bund fire	* Regular inspection and maintenance of tanks and pipeworks
	* Tank overfill	* Possible propagation to other tanks/bunds	* Loss detection systems
		* Ground contamination	* High level alarms/overfill protection
		* Possible evolution of toxic fumes	* Remote isolation systems
		* Watercourse pollution via bund drainage system	* Foam monitors
		* Pollution via firefighting water	* Water cooling of tanks
			* Control of ignition sources
			* Adequate bunding
			* Impermeable bund floor/walls
			* Separator pits

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APPENDIX 2

EXAMPLES OF SAFETY MANAGEMENT SYSTEM CORE ELEMENTS

EXAMPLE ONE[8]	EXAMPLE TWO[9]	EXAMPLE THREE[10]	EXAMPLE FOUR[11]	EXAMPLE FIVE[12]
Accountability: Objectives and Goals Process Knowledge and Documentation Project Reviews and Design Procedures Process Risk Management Management of Change Process and Equipment Integrity Human Factors Training and Performance (includes operating procedures) Investigation of Major Accidents and Near Misses Standards, Codes and Laws Audits and Corrective Action Enhancement of Process Safety Knowledge	Employee Participation Process Safety Information Process Hazard Analysis Operating Procedures Training Contractors Pre startup Safety Reviews Mechanical Integrity Hot Work Permits Management of Change Investigation of Major Accidents and Near Misses Emergency Planning and Response Compliance Audits Trade Secrets	Policy and Objectives Core System Elements, that is: * scope of safety management system * summary of operations, hazards and safety issues * management structure, organisation and human resources * accountabilities and responsibilities * performance standards and guidelines * safety assurance process * training philosophy * SMC documentation integrity * SMC review and improvement * relationship to occupational health and safety and environmental management systems * management of change * list of procedures Procedures, that is: * design and construction * operations and maintenance * human resources * changes, modifications, records * monitoring, reporting, auditing and reviewing * abnormal operations, major accidents and near misses * surrounding community	Leadership and Commitment Policy and Strategic Objectives Organisation, Resources and Documentation Evaluation and Risk Management Planning Implementation and Monitoring Auditing and Reviewing	Manufacturing Management Systems, that is: * management of hazards * setting standards * performance review * communication and consultation * system features Operations Integrity, that is: * design and construction of facilities * operation of facilities Health, Safety and Environment Awareness, that is: * management leadership * employee health and safety * contractor health and safety * environment protection and awareness * community impact * community awareness * emergency response

SUGGESTED CRITERIA FOR REPORTING NEAR MISSES TO THE RELEVANT PUBLIC AUTHORITY

A3.1 Near misses which meet or exceed the criteria agreed between the Operator and the relevant public authority shall be reported to the relevant public authority. A near miss should be regarded by the parties involved as an opportunity to enhance prevention measures at a major hazard facility.

A3.2 The following criteria provide guidance to the relevant public authority and Operators for developing 'agreed criteria' for reporting near misses:

(a) Incidents, such as the malfunctioning of noncritical instruments or equipment, variations in operating conditions within a nominated safe range, spillage or release of nonhazardous materials or failure to meet product specifications would not usually be considered near misses and may be dealt with by the major hazard facility's management system.

(b) Deviations from operating standards beyond a nominated safe range, breakdown or failure of safety-critical equipment or spillage or release of hazardous materials have the potential to lead to a major accident and can be defined as 'near misses'.

(c) The occurrence of substantial deviations from operating standards, together with the following, may be used as criteria for reporting near misses:

(i) were the on-site or off-site emergency plans activated?

(ii) did the leak or spill have the potential to escalate into any of the following:

- fire?
- explosion?
- release of toxic materials?

(iii) did the leak or spill have the potential to result in any of the following effects:

- acute or chronic human health effects?
- serious environmental harm?
- damage to property?

(iv) would the leak or spill affect the quantity or quality of effluent discharged into sewers?

(v) did the leak or spill need to be reported to the State or Territory Environment Protection Authority under a site leak or spill reporting plan?

APPENDIX 4

TIMING FOR REQUIREMENTS OF THE NATIONAL STANDARD

REQUIREMENT	SECTION	WHEN
Notify the relevant public authority (RPA) if more than 10 per cent of the threshold or aggregate quantity of scheduled material(s) will be present	sub-sections 5.2, 5.4	• **Proposed facility:** as soon as possible and six months before construction begins • **Facility existing when standard is implemented:** as soon as possible and within three months of implementation of the standard • **Facility under construction when standard is implemented:** as soon as possible and within three months of implementation of the standard • **Change to an existing facility which causes it to become a major hazard facility:** as soon as possible and before implementing the change
Notify the RPA if the Operator of a major hazard facility intends to permanently close it or change it so that it will no longer be a major hazard facility	sub-section 5.7	Prior to the closure or change
Review and update the risk assessment and risk controls	sub-sections 6.4, 6.5	• at intervals not exceeding five years • prior to any modification as described in sub-section 6.4
Provide a safety report to the RPA	sub-sections 7.1, 7.2, 7.6, 7.7	• **Proposed new facility:** as soon as possible and before beginning operations • **Facility existing when standard is implemented, including a facility under construction when standard is implemented:** as soon as possible and within 18 months of implementation of the standard • **Change to an existing facility which causes it to become a major hazard facility:** as soon as possible and before implementing the change • the RPA may vary the timing

REQUIREMENT	SECTION	WHEN
Revise, update and amend the safety report and provide it to the RPA	sub-sections 7.8, 7.6	• before any modification (as defined in Chapter 4 of the national standard) • if developments in technical knowledge or assessment of hazards and risk make this appropriate • at least every five years • at the specific request of the RPA
Provide education and training	sub-sections 8.2, 8.3	Before changes as described in sub-section 8.3
Prepare emergency plans	sub-section 9.3	• **Proposed new facility:** at least three months before beginning operations • **Facility existing when standard is implemented:** within three months of implementation of the standard • **Change to an existing facility which causes it to become a major hazard facility:** at least three months before implementing the change
Update the emergency plan and provide information to emergency services	sub-sections 9.5, 9.6	• When the safety report is updated • When a major accident, near miss or test of the plan indicates this is needed • at the specific request of the RPA
Test, evaluate and update emergency plans	sub-section 9.7	At intervals necessary to ensure the effectiveness of the plans
Notify the RPA of major accident or near miss which exceeds agreed criteria	sub-sections 10.1, 10.4	Within 24 hours
Investigate major accident and provide written report to RPA	sub-section 10.2	Within the time specified by the RPA
Provide updated information to the community	sub-section 12.1(b)	At appropriate intervals
Give warning in case of a major accident	sub-section 12.1(c)	As soon as possible
Provide the community with information on significant site changes	sub-section 12.2	Before the changes are made

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