

# GUIDELINES FOR MAJOR HAZARD FACILITIES



## I - ACCIDENTS AND NEAR MISSES

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## (i) Sections of the Act Relevant to Guideline

### Dangerous Goods Safety Management Act 2001

#### PART 1—PRELIMINARY

##### *Division 4—Interpretation*

### 13 Meaning of “major accident”

“**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 serious harm to persons, property or the environment, whether immediate or delayed.

#### PART 8—INVESTIGATIONS AND INQUIRIES INTO MAJOR ACCIDENTS

##### *Division 1—Requirement about major accidents and near misses*

### 126 Notice of major accident

- (1) If a major accident happens at a major hazard facility, the occupier of the facility must—
- (a) as soon as practicable, notify the chief executive about the major accident and of any serious harm or material harm caused in the accident to a person, property or the environment; and
  - (b) if notification to the chief executive is given orally, confirm the oral notification by notice within 7 days; and
  - (c) investigate the major accident; and
  - (d) give a written report on the investigation to the chief executive within 1 month of the accident or, if the chief executive considers this is not practicable, the longer time allowed by the chief executive; and
  - (e) consult with the employees at the facility about avoiding major accidents in the future.

Maximum penalty—200 penalty units.

- (2) However, the occupier does not have to comply with subsection (1) if the major accident is notified under any of the following Acts—

- (a) Explosives Act 1999;
- (b) Gas Act 1965;
- (c) Petroleum Act 1923;
- (d) Radiation Safety Act 1999.

**127 Recording of near misses**

- (1)** If a near miss happens at a major hazard facility, the occupier of the facility must as soon as practicable—
- (a) record the near miss; and
  - (b) investigate the near miss and record the results of the investigation; and
  - (c) consult with the employees at the facility on ways of avoiding near misses in the future.

Maximum penalty—80 penalty units.

- (2)** The occupier must keep a record created under subsection (1) while the major hazard facility continues to operate.

Maximum penalty—80 penalty units.

**Schedule 2  
Dictionary**

**“material harm”** is harm that—

- (a) causes or has the potential to cause harm to a person that requires or may require treatment by a doctor; or
- (b) results in costs of more than \$1 000 being incurred to prevent, minimise or repair harm to property or the environment.

**“near miss”** means any sudden event that, apart from mitigating effects, actions or systems, could have escalated to a major accident.

**“serious danger”** is danger that has the potential to cause serious harm.

**“serious harm”** is harm that—

- (a) causes the death of a person; or

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- (b) impairs a person to such an extent that because of the harm the person becomes an overnight or longer stay patient in a hospital; or
- (c) results in costs of more than \$50 000 being incurred to prevent, minimise or repair harm to property or the environment.

## **(ii) Sections of Regulation Relevant to Guideline**

### **Dangerous Goods Safety Management Regulation 2001**

#### **PART 3—SAFETY OBLIGATIONS FOR OCCUPIERS**

##### *Division 1—Obligations applying to occupiers of major hazard facilities and dangerous goods locations*

##### *Subdivision 1—Hazard identification and risk assessment*

#### **19 Review of risk assessment**

- (1) The occupier must review a risk assessment and keep a dated written record of the review—
- (a) if there is a significant change to a process, system or procedure in relation to the storage or handling of dangerous goods or combustible liquids at the occupier's facility or location; or
  - (b) if there is evidence to indicate that the risk assessment no longer adequately assesses the risk associated with a hazard.<sup>3</sup>

Maximum penalty—

- (a) for a major hazard facility—100 penalty units;
- (b) for a dangerous goods location—30 penalty units.

- (2) A risk assessment must be reviewed at least once every 5 years.

Maximum penalty—

- (a) for a major hazard facility—100 penalty units;
- (b) for a dangerous goods location—30 penalty units.

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<sup>3</sup> Section 47 requires the review of the risk assessment under this section after an accident involving stated dangerous goods or combustible liquids causing material harm.

##### *Subdivision 9—Accidents*

#### **45 Response to hazardous materials emergencies**

- (1) This section applies if a hazardous materials emergency happens at an occupier's facility or location.

- (2) The occupier must respond to the emergency by ensuring that—
- (a) immediate action is taken to assess and control any risk associated with the emergency, including by making safe, so far as is practicable, the area, and plant and equipment, affected by the emergency; and
  - (b) only persons essential to carry out the action mentioned in paragraph (a) remain in the vicinity of the emergency; and
  - (c) the risk to persons carrying out the action mentioned in paragraph (a) is minimised as far as reasonably practicable.

Maximum penalty—

- (a) for a major hazard facility—100 penalty units;
  - (b) for a dangerous goods location—30 penalty units.
- (3) The duties of the occupier under subsection (2)(b) and (c) do not apply to emergency services.

#### **46 Investigation of accident**

If an accident at an occupier’s facility or location involves stated dangerous goods or combustible liquids and causes material harm, the occupier must ensure that—

- (a) the accident is investigated; and
- (b) the investigation, as far as practicable, determines the cause or likely cause of the accident; and
- (c) a dated written record of the investigation is—
  - (i) made; and
  - (ii) kept for the life of the facility or location; and
  - (iii) if requested, readily available to the chief executive.

Maximum penalty—

- (a) for a major hazard facility—100 penalty units;
- (b) for a dangerous goods location—30 penalty units.

#### **47 Risk assessment and control after accidents**

The occupier of a facility or location where an accident mentioned in section 46 has happened must as soon as reasonably practicable—

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- (a) review the risk assessment under section 19, taking into account the results of the investigation into the accident; and
- (b) if the review identifies that risk is not at an acceptable level, take the action necessary to achieve an acceptable level of risk.

Maximum penalty—

- (a) for a major hazard facility—100 penalty units;
- (b) for a dangerous goods location—30 penalty units.

### **48 Particulars about accident may be requested by chief executive**

The occupier of the facility or location where an accident mentioned in section 46 has happened must, if requested by the chief executive, give to the chief executive, as soon as reasonably practicable, details of—

- (a) the cause and effect of the accident; and
- (b) any action taken or proposed to be taken by the occupier under sections 46 and 47.

Maximum penalty—

- (a) for a major hazard facility—100 penalty units;
- (b) for a dangerous goods location—30 penalty units.

# 1 Introduction

The occurrence of an incident, i.e. an accident, major accident or near miss, may be evidence that a Major Hazard Facility (MHF) is not operating at an acceptable level of risk. Seldom do incidents arise from a single cause. They most often occur due to a combination of procedural, technical and human breakdowns at various levels. A comprehensive Systematic Risk Assessment (SRA) clearly linked to the Safety Management System (SMS) should reduce the likelihood of such incidents. Consequently an incident will be an indication of deficiencies in the SRA or, where the hazards have been identified, deficiencies in the SMS.

The Dangerous Goods Safety Management Act 2001 (DGSM Act) obligates the occupier to operate the MHF at an acceptable level of risk. To achieve this the occupier must make good the deficiencies in the SRA and/or the SMS which gave rise to the incident. Following an incident the occupier should:

- investigate the incident to establish the cause(s) as soon as practicable;
- establish risk reduction measures which ideally eliminate the possibility of a re-occurrence or as a minimum reduce the risk of a re-occurrence;
- review and update the SRA to incorporate appropriate new or improved risk reduction measures to achieve an acceptable level of risk;
- ensure that the risk reduction measures remain in force while the facility continues to operate. This is achieved through changes to the SMS;
- review the risk reduction measures at an appropriate interval to ensure that they continue to be appropriate, effective and remain in force;
- involve employees at the facility in the investigation and consult and inform them about resultant changes in the SRA and SMS;
- record and retain the incident investigation;
- where required by legislation notify the regulatory authority of the incident as soon as practicable; and
- where required by legislation supply a report about the incident to the regulatory authority.

## 2 Key Legislative Issues

The legislation defines three types of incidents:

- accident – causes material harm;
- major accident – causes serious danger or serious harm; and
- near miss – mitigating effects, actions or systems prevent the incident escalating to a major accident.

The extent of an occupier's response, required by the legislation following an incident, reflects the consequences or potential consequences of the incident. The more serious are the consequences the more extensive and detailed is the required response.

### 2.1 Accident

The Dangerous Goods Safety Management Regulation requires that any accident at a facility involving dangerous goods or combustible liquids which results in material harm must be investigated. The investigation should:

- determine the cause of the accident;
- be recorded;
- kept for at least 5 years; and
- on request, be made available to the regulatory authority.

As a consequence of the accident the risk assessment should be reviewed. Should the review show that risk is not at an acceptable level then action should be taken to achieve an acceptable level of risk.

## **2.2 Near Miss**

The DGSM Act defines a near miss. Where a near miss occurs the occupier must, as soon as practicable:

- record the near miss;
- investigate the near miss and record the results of the investigation;
- consult with the employees at the facility on ways of avoiding near misses in the future; and
- keep a record of the near miss and investigation while the facility continues to operate.

## **2.3 Major Accident**

The DGSM Act defines a major accident. Where a major accident occurs the occupier must:

- as soon as practicable, notify the chief executive about the major accident and of any resulting serious harm or material harm affecting people, property or the environment;
- investigate the major accident;
- provide the chief executive with a written report on the investigation of the accident within 1 month of the occurrence of the accident; and
- consult with the employees at the facility about avoiding major accidents in the future.

## **3 Processes**

### **3.1 Definition of Incidents**

In the context of the DGSM Act and Regulation an incident (accident, major accident or near miss) will involve, in some way, hazardous materials.

#### **Accident**

An accident in the context of this legislation is one which involves dangerous goods or combustible liquids and causes material harm.

For people, material harm is defined as harm which causes or has the potential to cause harm to a person that requires or may require treatment by a doctor.

For property and the environment, harm occurs when the cost incurred in preventing, minimising or repairing damage exceeds \$1 000.

#### **Major Accident**

The Act defines a major accident as a sudden occurrence, leading to serious danger or serious harm to persons, property or the environment, whether immediate or delayed. The sudden occurrence includes a major emission, loss of containment, fire, explosion or release of energy.

For people, serious harm is defined as:

- the death of a person; or
- injury to a person causing that person to remain in hospital as a patient overnight or longer.

For property and environment, serious harm occurs when the cost of preventing, minimising or repairing damage exceeds \$50 000.

Serious danger is danger that has the potential to cause serious harm.

### **Near Miss**

The Act defines a near miss as any sudden event that, apart from mitigating effects, actions or systems, could have escalated to a major accident.

### **3.2 Incident Management System**

The occupier should have a system in place at the facility which:

- captures details of incidents;
- identifies incidents which are accidents, major accidents and near misses;
- contains a procedure for major accident notification;
- contains a procedure for incident investigation;
- allocates responsibilities for incident investigations to appropriately qualified people;
- allocates responsibility for implementation of remedial actions and reviews arising from incident investigations;
- ensures that actions arising from investigations are tracked through to completion;
- ensures that reports of investigations are retained for periods stated in the legislation (as a minimum);
- ensures that reports of major accidents are supplied to the regulatory authority in the required time period;
- adequately addresses all the obligations which the legislation places on an occupier in respect of incidents; and
- involves and informs employees in and about the investigation.

The system should form part of the facility's SMS.

### **3.3 Notification of Major Accident**

The occupier must notify the regulatory authority that a major accident has occurred at a MHF as soon as practicable after the event. Initial notification can be oral in which case written notification of the major accident must be provided to the regulatory authority within 7 days of the occurrence.

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

- the name and location of the major hazard facility where the major accident occurred;
- the contact person and phone number at the major hazard facility from whom ongoing information about the accident can be obtained;
- the nature of the events that occurred, for example, explosion, fire or release of toxic materials;
- time and date of the accident and subsequent consequences;
- the materials involved and their approximate quantity;
- an indication of the possible acute effects on people and the environment;
- property damage outside the MHF; and
- the initial measures taken to minimise the consequences, including the emergency measures taken on-site or off-site.

A major accident could be subject to media interest. The regulatory authority should be advised of all information provided to the media prior to its release.

### **3.4 Incident Investigation**

The level and nature of an investigation should be based on considerations of an incident's potential consequences rather than its actual consequences. This is particularly important for an investigation of a near miss where there is no essential difference between it and a major accident.

The investigation should determine immediate causes and the underlying causes of an incident and in particular management related causes and human factor causes.

The investigation should extend to identifying those sections of the SRA, specific risk reduction measures and elements of the SMS which failed thereby allowing the incident to occur.

### **3.5 Major Accident Report**

The written report to the regulatory authority shall include at least the following information about the major accident:

- the nature; date; and time of the major accident;
- the hazardous materials involved, and the amounts of each;
- the immediate consequences of the major accident on people, property and the environment and the likely longer term consequences ;
- the steps taken to mitigate the effects;
- an analysis of the causes of and contributing factors to the major accident;
- the action already taken and the planned future actions to prevent similar occurrences;
- the extent of involvement of emergency services in the major accident;
- a critique of the implementation and content of the emergency plans and procedures and, where applicable, a copy of the revised plans and procedures;
- changes which have been made to the SRA;
- changes which have been made to the SMS and the safety report, where appropriate;
- the extent and nature of employee consultation;
- the extent and nature of consultation with the community; and
- other matters relevant to the major accident or measures put in place to prevent a similar accident.

### **3.6 Accident and Near Miss Reports**

The written report of an accident or near miss should cover all the elements listed in Section 3.3 which are relevant to the incident. The occupier, as a minimum, should retain the report for the legislated period. However, it is the expectation of the regulatory authority that all accident and near miss reports will be kept for the life of the facility as they will be of value when reviewing or carrying out new risk assessments.

These reports should always be available to employees at the facility. Copies should be supplied to the regulatory authority on request.

## 4 Summary of Occupier's Requirements

The occupier may use the following as a checklist.

Under the legislation the obligations of an occupier of a MHF are as follows:

- Following an accident which involves dangerous goods or combustible liquids the occupier must: Tick  
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  - investigate the accident to determine the causes;
  - retain the report of the investigation for at least 5 years;
  - review the SRA against the causes of the accident;
  - take action to achieve an acceptable level of risk; and
  - on request, provide a copy of the report and actions taken to the regulatory authority.
  
- Following a major accident the occupier must:
  - as soon as possible notify the regulatory authority about the accident;
  - thoroughly investigate the accident to determine the causes;
  - provide a written report about the accident to the regulatory authority within 1 month;
  - review and update the SRA;
  - review and update the SMS; and
  - consult with employees about avoiding future major accidents.

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- Following a near miss the occupier must:
  - investigate the near miss to determine the causes;
  - record the near miss and retain while the facility continues to operate;
  - review and update the SRA;
  - review and update the SMS; and
  - consult with employees about avoiding future near misses.

## 5 Further Reading

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

ISBN 0-6444-5926-3

Available at:

[www.nohsc.gov.au/OHSInformation/NOHSCPublications/fulltext/toc/01497-01.htm](http://www.nohsc.gov.au/OHSInformation/NOHSCPublications/fulltext/toc/01497-01.htm)

National Occupational Health and Safety Commission

National Standard for the Control of Major Hazard Facilities,

[NOHSC:1014(1996)]

Australian Government Publishing Service, Canberra, 1996

ISBN 0-6444-5926-3

Available at:

[www.nohsc.gov.au/OHSInformation/NOHSCPublications/fulltext/toc/01397-01.htm](http://www.nohsc.gov.au/OHSInformation/NOHSCPublications/fulltext/toc/01397-01.htm)