

GUIDELINES FOR MAJOR HAZARD FACILITIES



E – EDUCATION & TRAINING

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Table of Contents

(i) Sections of Act Relevant to Guideline.....	1
(ii) Sections of Regulation Relevant to Guideline	3
1 Introduction	5
2 Key Legislative Issues	6
2.1 Safety Obligations	6
2.2 Timeframe	6
2.3 Review	7
3 General Requirements	8
3.1 Standards of Competency	8
3.2 Education and Training Plans	11
3.3 Education and Training Audience	12
3.4 Education and Training Requirements	13
3.5 Presentation of Education and Training Programs	16
3.6 Evaluation of Competency	16
3.7 Maintaining Competency	16
4 Requirements of the DGSM Act	18
4.1 Links from the Systematic Risk Assessment.....	18
4.2 Education and Training Provision	19
4.3 Establishment and Maintenance of Standards of Competency	19
4.4 Effectiveness of Education and Training.....	20
4.5 Records	20
5 Summary of Occupier’s Requirements	21
6 Further Reading.....	22

(i) Sections of Act Relevant to Guideline

Dangerous Goods Safety Management Act 2001

PART 2—SAFETY OBLIGATIONS

Division 2—Obligations of occupiers and others

23 Obligations of occupiers

- (1) The occupier of a major hazard facility or dangerous goods location has the following obligations—
- (a) as far as practicable, to minimise the risk associated with the major hazard facility or dangerous goods location by—
 - (i) eliminating or minimising hazards at the facility or location; and
 - (ii) implementing measures to minimise the likelihood of a major accident at the facility or location; and
 - (iii) implementing measures to limit the consequences if a major accident happens at the facility or location;
 - (b) and (c) not directly relevant*
 - (d) in consultation with the employees at the facility or location, to provide appropriate induction, information, supervision, education and training to all persons at the facility or location so that the persons may carry out their roles and duties safely;
 - (e) not directly relevant*

PART 4—MAJOR HAZARD FACILITIES

Division 3—Other obligations of occupiers of major hazard facilities

44 Occupier must provide education and training

- (1) For section 23(1)(d), for a major hazard facility, education and training must—
- (a) establish and maintain the standards of competency of persons at the major hazard facility; and
 - (b) be reviewed and updated so that standards of competency are maintained; and

E – Education and Training

- (c) be conducted as often as is necessary to maintain the standards of competency; and
 - (d) be conducted before any modification of the major hazard facility that significantly alters the risk associated with the facility is carried out.
- (2) The occupier must keep a written record of the matters mentioned in subsection (1).

(ii) Sections of Regulation Relevant to Guideline

Dangerous Goods Safety Management Regulation 2001

PART 3—SAFETY OBLIGATIONS FOR OCCUPIERS

Subdivision 5—Risk minimisation for workers and visitors

29 Induction, information, supervision, education and training

- (1) For section 23(1)(d)⁴ of the Act, for a person involved with the storage or handling of stated dangerous goods or combustible liquids at the occupier's facility or location, the occupier must ensure that the person is provided with induction, information, supervision, education and training—
- (a) in a language or manner appropriate to the person; and
 - (b) relevant to the roles and duties undertaken by the person and the risks associated with the roles and duties.

4 Section 23 (Obligations of occupiers) of the Act

Maximum penalty—

- (a) for a major hazard facility—100 penalty units;
 - (b) for a dangerous goods location—30 penalty units.
- (2) The occupier must ensure that the induction, information, education and training provided to the person includes instruction in—
- (a) the nature of the hazards and properties of the stated dangerous goods or combustible liquids; and
 - (b) the processes used to identify, assess and control the risks associated with the person's roles and duties; and
 - (c) the use and maintenance of the processes to control the risks; and
 - (d) the appropriate use and fitting of personal protective equipment.

Maximum penalty—

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

E – Education and Training

- (3) A dated written record of induction, information, education or training carried out under this section must be made and kept for at least 5 years.

Maximum penalty—

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

1 Introduction

The purpose of the Dangerous Goods Safety Management (DGSM) Act 2001 is to protect people, property and the environment from harm from hazardous materials. The DGSM Act imposes certain safety obligations on occupiers of Major Hazard Facilities (MHFs).

These obligations include conducting and documenting a Systematic Risk Assessment (SRA) of the operations, the implementation of appropriate risk control measures, consultation with the community and the submission of a safety report.

Included in the risk control measures are specific requirements for the development, implementation and maintenance of a Safety Management System (SMS), the establishment of emergency plans and procedures and the provision of education and training for employees.

This guideline provides information on the education and training of employees at a MHF. This information is provided for guidance only on the general requirements of the DGSM Act and Regulation with respect to employee education and training. This document is not a substitute for detailed advice on the specific education and training needs for a particular facility.

2 Key Legislative Issues

2.1 Safety Obligations

The DGSM Act requires an occupier to provide appropriate induction, information, supervision, education and training to all people at the facility so that they may carry out their roles and duties safely.

The appropriateness of the education and training must be such that the competency of people at the MHF is maintained at an established standard. Key to the education and training obligations under the DGSM Act is the establishment of standards of competency expected for all people at the facility and the provision of appropriate education and training programs to attain and maintain those standards of competency.

Specifically, education and training provided must include the hazards and risks associated with roles and duties of the person, and include instruction in:

- the nature of the hazards and properties of hazardous materials;
- the processes used in hazard identification, assessment of risk and risk control associated with the person's roles and duties; and
- the proper use and maintenance of risk reduction measures, including proper use and fitting of Personal Protective Equipment (PPE).

A dated, written record of education and training provided must be retained for at least 5 years.

2.2 Timeframe

Education and training of people at the facility should be undertaken prior to their exposure to potential hazards so that they can carry out their roles and duties safely.

The timing of training and education for people at the facility is a critical element in ensuring that risk at the facility is maintained at a level as low as reasonably practicable.

2.3 Review

The training and education programs should be reviewed as often as necessary to ensure standards of competency are maintained.

The facility's education and training programs should be reviewed and updated if a modification occurs at the facility that significantly alters the risk associated with the facility. Appropriate education and training related to such modifications and the control of the associated risks must be conducted prior to the implementation of the modification.

3 General Requirements

3.1 Standards of Competency

Standards of competency need to be established for people at a facility that outline the outcomes that should be achieved by people performing particular roles and duties. These standards should describe what is expected of people in a role and are what those people should be able to demonstrate. (see Guide Note 1)

Guide Note 1 – Standards of Competency

Every role at the facility should have standards of competency established for it. Each competency standard should describe activities the person performing duties of that role will be able to do.

For example, an employee responsible for the unloading of bulk hazardous materials from road tankers and the transfer to bulk storage tanks may have standards of competency which include the following:

- Operate tanker unloading systems safely in accordance with documented work procedures; and
- Initiate safe shut down and isolation of tanker unloading systems in the event of an emergency, in accordance with documented work procedures.

As well as these specific standards of competency for the role, there should also be more generalised standards of competency that are applicable to all employees at the facility. These may include areas such as emergency plans and procedures, permit to work systems, incident reporting, hazard identification etc.

In establishing these competency standards the occupier of the facility should:

- focus on what is expected of people at the facility; and
- include the ability to apply skills and knowledge and to exercise judgement in new or emergency situations.

A variety of factors should be considered when determining standards of competency for specific roles at the facility, including:

- the risks associated with the tasks and activities being undertaken, e.g. identified in the SRA;
- the roles and responsibilities of people, including requirements to perform specific roles safely, e.g. specific procedures to be followed;
- the level of supervision of the employees or contractors while performing required tasks or activities (refer Guide Note 2); and
- site specific issues, including basic requirements for all people working on the site.

The standards of competency required for roles and duties may be determined by conducting an analysis of the specific activities undertaken by people performing these roles. This task/occupational analysis should be targeted at determining competencies required for defined positions and the training curriculum required to achieve and maintain these competencies. In breaking down roles into tasks or steps, critical safety knowledge and skills can be identified as desired competencies so that instructional education and training material addresses these important safety issues.

The result of the analysis is a description of the position that includes the competencies, accountabilities and responsibilities including the skills and critical attributes that are required and associated with the role.

The task analysis should utilise employees experienced in the position being analysed as these employees can describe the duties of the position with greater precision than anyone else.

Guide Note 2 - Generic Competencies

In developing standards of competency required for persons performing specific roles and duties, the occupier of a MHF may refer to the National Occupational Health and Safety Commission's National Guidelines for Integrating Occupational Health and Safety Competencies into National Industry Competency Standards [NOHSC:7025(1994)]. This standard provides guidance on the process to identify the competencies required to implement effective OHS management into a workplace, and describes three different units of competence relevant for different levels of responsibility. Elements of competency and performance criteria are described in detail in the standard, specific to the following generic competencies.

- **Generic Competency A**

(relevant for employees without managerial or supervisory responsibilities)

Follow defined occupational health and safety policies and procedures related to the work being undertaken in order to ensure own safety and that of others in the workplace.

- **Generic Competency B**

(relevant for employees with supervisory responsibilities)

Implement and monitor the organisation's occupational health and safety policies, procedures and programs in the relevant work area to achieve and maintain occupational health and safety standards.

- **Generic Competency C**

(relevant to employees with managerial responsibilities)

Establish, maintain and evaluate the organisation's occupational health and safety system in order to ensure that the workplace is, so far as is practicable, safe and without risks to the health of employees.

3.2 Education and Training Plans

The safe functioning of a facility is dependant upon having 3 key elements in place:

- the right plant (equipment & facilities);
- the right procedures (instructions and practices); and
- the right people (skills, culture and behaviours).

The purpose of education and training is to ensure that the people at the facility are equipped with the skills and knowledge to perform their roles and duties effectively, i.e. are able to demonstrate the standards of competency defined for their role.

Without appropriately skilled and trained people operating the facility, the *right* plant and procedures alone will not produce the desired safety, production and financial outcomes for the operation of the business.

From a major hazards safety perspective, the objective of education and training is to ensure that the roles and duties of people at the facility are performed safely to ensure risks to people, property and the environment from the facility's operation are maintained at an acceptable level. While each and every employee is responsible for their own safety, they have to be equipped with appropriate skills and knowledge to perform their duties safely. Management at the facility is accountable for ensuring personnel in all areas of their responsibility are appropriately trained.

Effective education and training is vital in managing safety at a facility through maintaining established standards of competency, and forms a key component within the facility's SMS. The development and implementation of education and training plans, procedures and practices should be documented within the SMS.

For education and training plans and procedures to be effective, they need to be developed in a structured, systematic manner targeted at achieving the desired outcome. This approach should address the following:

- the education and training audience – the people to be provided with education and training;
- education and training requirements – the content of education and training programs;
- the presentation of education and training programs – the method of providing education and training;
- the evaluation of competency – the assessment and verification of competency; and
- maintaining competency – keeping competency up to date.

3.3 Education and Training Audience

Every person at the facility, to varying degrees, is potentially exposed to risks that can either have a direct impact on themselves, their work colleagues, other people, or property and the environment. Therefore all people - employees, contractors and visitors – require some form of education and training to ensure their roles and duties are performed safely.

Particular emphasis should be placed on areas that have been identified as significant contributors to risk at the facility, established through completion of the SRA. The skills, knowledge and abilities of people working in these areas, and hence the actions taken by them, are critical in managing risk to an acceptable level.

Safety education and training for personnel at a facility should be an integral part of operating safely, and should be considered a normal component of all operational or vocational skills training.

People new to a facility, or employees commencing new tasks at the facility should be provided with appropriate induction training.

3.4 Education and Training Requirements

The determination of training requirements should be based on the established standards of competency for people at the facility. The duration, frequency and complexity of the education and training provided should be such that desired standards of competency are achieved and are maintained.

The types of education and training required should include the following:

- induction training for new starters – employees and contractors;
- general training covering broad topics applicable across the facility;
- specific training addressing particular tasks, duties or roles; and
- information and instructions for visitors to the facility.

Induction training programs should provide the initial training for employees and contractors prior to the commencement of roles and duties at the facility. This training may be broad in nature to cover people new to the facility (see Guide Note 3) or more specific for employees commencing at a different area or in a new role at the facility.

Guide Note 3 - Typical Induction Training Requirements

Induction training programs for new employees to the facility may include:

- general site rules and general SMS outline;
- minimum PPE standards in particular work areas;
- hazard identification, hazard awareness and risk controls for specific areas;
- facility tour, access to site, first aid provisions and workplace amenities;
- procedures to follow in the event of an emergency;
- incident reporting procedures;
- restricted areas of the facility; and
- organisational structure, administration and HR issues.

E – Education and Training

The induction training should ensure that people attain the minimum standard of competency required for work at the facility.

Induction training in safety critical areas should be delivered immediately a new starter commences. The induction to other less critical areas may be staged gradually over a period of time. However, the decision on delivery timing should be such that the person's safety and that of others at the facility is not compromised.

It may be useful to outline education and training needs for the competencies required for roles or workgroups at the facility using a training matrix (see Guide Note 4).

Guide Note 4 - Training Matrix

Outline of competency training required for workgroups/roles using a matrix:

COMPETENCY	WORK GROUP / ROLES				
	Administration	Production	Maintenance	Warehouse
SMS - General	✓	✓	✓	✓	
Permits to Work		✓	✓	✓	
Isolations		✓	✓		
Emergency Plans	✓	✓	✓	✓	
Incident Reporting	✓	✓	✓	✓	
.....					

Education and training programs should be developed to achieve established standards of competency for all people at the facility. This includes information and instruction on general areas of competency for all facility employees as well as addressing specific competencies for particular roles and duties (see Guide Note 5).

The Act requires a number of key areas of employee involvement, such as the SRA and emergency plans and procedures. Employees should be trained in preparation for their specific involvement as required.

Education and training provisions should also ensure that specific legislative requirements for particular roles are also being addressed, e.g. appropriate forklift truck training and licensing as required under the Workplace Health and Safety Act 1995.

Guide Note 5 - Training and Education Addressing General Standards of Competency

To address general standards of competency, education and training may include the provision of information and instruction to enable people to participate in the following to a level appropriate to their role and responsibility at the facility:

- Hazard awareness, including:
 - the nature of the hazards and properties of hazardous materials;
 - dangerous goods incompatibilities; and
 - understanding dangerous goods labeling and Material Safety Data Sheets (MSDS) etc.
- Hazard identification, risk assessment and risk control processes associated with the person's roles and duties, e.g. the SRA process.
- Details of risk reduction measures in place, their use and maintenance, including:
 - the proper use and fitting of personal protective equipment;
 - general procedures for safe handling of materials;
 - spill and leak containment and clean up;
 - use of fire fighting equipment; and
 - housekeeping arrangements.
- Details of the safety management system in place at the facility, including:
 - permit to work system arrangements;
 - management of change and modification procedures;
 - emergency preparedness and response - actions to be taken in an emergency;
 - incident reporting and investigation processes; and
 - communication and consultation arrangements.

Appropriate information and instruction should be provided to visitors to the facility to ensure that their personal safety and that of the facility is not compromised.

3.5 Presentation of Education and Training Programs

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

To attain the desired standards of competency, the delivery method should be appropriate to the audience and the subject matter, and be best suited to achieve the desired outcome.

3.6 Evaluation of Competency

Following all induction, education and training there should be an evaluation of its effectiveness. This evaluation should be outcome based – has the person achieved the desired standard of competency? This evaluation may be based on the following:

- test of acquired knowledge – written, oral or practical demonstration; or
- an observation of behaviours and actions in the workplace.

Provision should also be made for the verification of skills and qualifications of contractors engaged to do work at the facility.

3.7 Maintaining Competency

The occupier should ensure that all education and training at the facility is followed up and refresher and supplementary training is provided at appropriate intervals. This refresher training is required to ensure competency standards are maintained.

E – Education and Training

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

- the frequency at which skills or knowledge are applied;
- the turn-over of employees;
- the size and rate of change of the facility; and
- other indicators such as frequency of accidents and near misses etc.

Competencies for all employees should be reviewed periodically to ensure that they cover the range of normal and emergency duties expected to be undertaken.

4 Requirements of the DGSM Act

4.1 Links from the Systematic Risk Assessment

The DGSM Act 2001 requires all MHFs to conduct a comprehensive SRA. The SRA provides the opportunity to identify those roles and duties, which if not performed competently have the potential to adversely affect the facility's risk. As well as identifying these critical roles and duties, it should be apparent from the SRA what general, or minimum competencies are applicable for all people at the facility, e.g. awareness of procedures to be followed in the event of an emergency at the facility.

Of particular emphasis should be the required competencies for people to effectively perform activities associated with critical risk reduction measures. A risk reduction measure, which if removed would result in a significant increase in the risk of a major accident, could be considered to be a *critical* risk reduction measure.

In relation to managing the identified risk, the activities performed may be:

- **preventative** – e.g. connection of earthing straps prior to the transfer of flammable liquids; or
- **controlling/mitigating** – e.g. actions to be taken in emergency situations such as closure of fire doors etc.

The established standards of competency related to these critical activities will need to be discussed in the occupier's submitted Safety Report. Included in this discussion should be the links to relevant hazards identified in the SRA, and the processes in place to continually maintain these standards of competency.

4.2 Education and Training Provision

The occupier should establish appropriate education and training programs that ensure people at the facility are competent to perform their roles and duties safely. These education and training programs should be based on bridging the gap between the current or existing competencies of people at the facility and the expected standards of competency, as well as reinforcing skills and knowledge to maintain established standards of competency.

The occupier should be able to demonstrate that appropriate education and training programs have been established that are commensurate with the level of risk associated with the facility.

4.3 Establishment and Maintenance of Standards of Competency

The DGSM Act requires that occupiers of MHFs should establish standards of competency for all people at the facility. The occupier should be able to demonstrate that appropriate standards of competency have been established, clearly communicated and appropriately documented. People performing particular roles and duties at the facility must be aware of what is expected of them, i.e. they need to be aware of the standards of competency established for the roles and duties they are performing.

The documentation of standards of competency should be such that they are readily accessible and clearly defined. The method of documentation should be appropriate to the particular MHF's established systems and should be clearly linked to the position descriptions for the roles and duties performed at the facility.

The standards of competency should extend to all people at the facility, which includes contractors and visitors, i.e. the minimum requirements of non-facility employees, while at the facility, should also be defined.

4.4 Effectiveness of Education and Training

As part of the education and training processes established at the MHF, the occupier should establish appropriate methods of verifying that people at the facility have achieved the desired standard of competency at the completion of allocated training.

The method of assessing competency should be defined within the education and training material. This assessment method should be appropriate in establishing that competency has been achieved. A record of participant's successful completion (or otherwise) of training should be retained.

As with all components of the SMS, the overall effectiveness of the education and training plans and systems in place needs to be evaluated, reviewed and improved where appropriate. Processes should be established to measure the performance of the education and training systems relative to established performance criteria. This comparison provides the basis for performance evaluation of the education and training system and identifies areas where improvement is required.

4.5 Records

Records should be kept of all education and training undertaken to achieve relevant competency standards and be readily accessible to employees and other interested parties as appropriate.

The DGSM Regulation requires that a dated, written record of induction, information, education and training carried out must be made, and be retained for at least 5 years.

5 Summary of Occupier's Requirements

The occupier may use the following as a checklist.

The occupier should be able to demonstrate the following:

- | | Tick
box |
|---|--------------------------|
| • Standards of competency have been established for all roles at the facility, based on an analysis of the duties performed. | <input type="checkbox"/> |
| • Standards of competency have their basis in minimising risks, with appropriate links to the findings of the SRA. | <input type="checkbox"/> |
| • Appropriate education and training programs are in place to ensure established standards of competency are achieved and maintained. | <input type="checkbox"/> |
| • Evaluation processes are in place to validate the competency of people following all education and training. | <input type="checkbox"/> |
| • Processes are established to monitor and review the effectiveness of the education and training programs. | <input type="checkbox"/> |
| • All records associated with education and training are retained. | <input type="checkbox"/> |

6 Further Reading

Department of Employment, Training and Industrial Relations
Division of Workplace Health and Safety
Workplace Health and Safety Risk Management Advisory Standard 2000
Supplement No. 2 – Training

Available at:

www.whs.qld.gov.au/advisory/risksupp02v1.pdf

National Occupational Health and Safety Commission
National Standard for the Control of Major Hazard Facilities [NOHSC:1014(1996)]
Australian Government Publishing Service Canberra
ISBN 0 644 45926 3

Available at:

www.nohsc.gov.au/OHSInformation/NOHSCPublications/fulltext/toc/01397-01.htm

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
ISBN 0 644 45926 3

Available at:

www.nohsc.gov.au/OHSInformation/NOHSCPublications/fulltext/toc/01497-01.htm

National Occupational Health and Safety Commission
National Guidelines for Integrating Occupational Health and Safety Competencies
into National Industry Competency Standards [NOHSC:7025(1994)]
Australian Government Publishing Service Canberra
ISBN 0 642 37324 8

Available at:

www.nohsc.gov.au/OHSInformation/NOHSCPublications/fulltext/toc/compet98_toc.htm