
D Major hazard facilities

Major hazard facilities (MHFs) are workplaces that store, handle or process large quantities of hazardous material. Although MHF regulatory reform, of itself, does not fall within the scope of this study, it is relevant because MHFs include chemical manufacturing and storage facilities. Incidents at such facilities have the potential to cause serious damage to employees, people in surrounding areas and the environment. They can be broadly described as ‘low probability–high cost’ (NOHSC 2002b, p. 2). Controls that are stricter than those generally found in standard occupational health and safety (OHS) legislation are often used by governments to regulate these facilities.

D.1 Background

Major hazard facilities typically include chemical manufacturing sites, oil refineries, gas processing plants, liquid petroleum gas facilities, and other manufacturing and transport depots. Around 200 workplaces in Australia are considered to be MHFs (ASCC 2004b).

There have been several major incidents at facilities in Australia. Some recent examples include:

- The explosion at the Longford gas plant in 1998, which resulted in the loss of two lives and eight serious injuries, a fire that lasted for two days, and the gas supply to south-eastern Australia being cut off for almost three weeks. The cost to the Victorian economy was estimated to be more than \$1 billion (NOHSC 2002b). The Longford Royal Commission (1999) found that Esso was in breach of s. 21 of the *Occupational Health and Safety Act 1985* (Vic), and in addition observed that:

The failure to conduct a HAZOP study or to carry out any other adequate procedures for the identification of hazards in [gas plant 1] contributed to the occurrence of the explosion and fire. (p. 235)

- Three incidents at the Moomba gas plant between 2001 and 2004, which resulted in the loss of one life and denied gas supply to heavy industrial users.

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- Fires at Seven Hills in 1989, St Peters in 1990, Coode Island in 1991 (NOHSC 2002a), and at the Binary Industries factory in Queensland in 2005.¹

Australian governments, through the National Occupational Health and Safety Commission (NOHSC), completed the drafting of a national standard and code of practice for the control of MHFs in 1996.

D.2 The regulatory framework

Standard setting

The policy framework for managing MHFs in Australia is similar to the framework adopted for other areas of OHS controls. The *Control of Major Hazard Facilities — National Standard* and *National Code of Practice* were developed by NOHSC — a tripartite body established by the Australian Government to facilitate a national approach to OHS policy — taking into account existing domestic initiatives and international approaches.²

The National Standard and Code of Practice are maintained by the Australian Safety and Compensation Council (ASCC), which succeeded NOHSC in 2005. Implementation and enforcement is the responsibility of each jurisdiction. As the ASCC is not a statutory body, it has no power to administer legislation, nor to enforce the codes it oversees.

The objective of the Standard ‘is to prevent major accidents and near misses, and to minimise the effects of any major accidents and near misses’ resulting from the operation of a MHF (NOHSC 2002a, p. 6). It sets out the process for administering MHFs at a high level. For example, it provides definitions of key terms and explains the responsibilities of the various stakeholders — facility operators, employees and public authorities. The Code of Practice provides guidance on how to meet the requirements of the Standard. The criteria for classifying a MHF and obligations of the operators are summarised in box D.1.

¹ The Binary Industries factory was subject to provisions under the *Dangerous Goods Safety Management Act 2001* (Qld) relating to MHFs and Large Dangerous Goods Locations. A subsequent inspection program was undertaken at the Narangba Industrial Estate (Queensland 2007).

² In particular, the International Labour Organisation’s Convention for the Prevention of Major Industrial Accidents and the European Community’s Draft Council Directive on the Control of Major Accident Hazards Involving Dangerous Substances were drawn upon (NOHSC 2002a).

Box D.1 **Overview of the National Standard for the Control of Major Hazard Facilities**

In accordance with the National Standard for the Control of Major Hazard Facilities, a facility would be classified as a major hazard facility (MHF) if one of the following applies:

- a scheduled substance (as listed in Schedule 1 of the Standard) is, or may be present, at the facility in a quantity in excess of the relevant threshold quantity
- multiple scheduled substances are present, if for all chemicals present, the sum of the quantity stored divided by its threshold quantity exceeds one.

In these instances, the facility would automatically be classified as a MHF.

In circumstances where the amount of scheduled substances present at the site is between 10 and 100 per cent of the threshold value or aggregate quantity, the regulator has the option to classify the facility based on risk, taking into account a variety of issues including the types of material present, the processes involved at the facility and offsite issues such as surrounding land use. However, its classification is not mandated by the Standard.

Under the Standard, the regulator can classify a facility where radioactive and/or biological material or any other unscheduled material are present at the site.

The Standard obligates operators of MHFs to notify the regulator where the amount of materials present at the site exceeds 10 per cent of the threshold value or aggregate quantity.

Obligations of MHF operators

Once a facility is classified as a MHF, the operator is required to:

- carry out and document a systematic risk assessment identifying hazards and potential events that could lead to a major accident, and the type, likelihood and consequences of potential major accidents
- minimise the risks associated with the facility by eliminating hazards and implementing mitigation measures and procedures at the facility
- establish, implement and maintain a documented safety management system that sets out safety objectives, systems and procedures by which these are to be achieved and performance standards to be met, and the means by which these standards are to be maintained
- prepare a safety report. A safety report is a written presentation of the technical, management and operational information covering the hazards and risks of a MHF, and their control, and which provides justification for the measures taken to ensure the safe operation of the facility.

Source: NOHSC (2002a).

The current review of the Standard and Code is consistent with a COAG agreement (2004b)³ that requires all national standards and codes to be reviewed at least every ten years to ensure their currency.

D.3 Adoption and implementation of the National Standard and Code

Although representatives from the Commonwealth, state and territory governments (as well as employer and employee groups) agree on national standards and codes developed under the NOHSC framework, when and how they are applied is determined by each jurisdiction.⁴

The Commonwealth, Victoria, Queensland, Western Australia, the Northern Territory, and most recently, New South Wales, have introduced MHF regulations. While new regulations took effect in Western Australia on 1 March 2008, the Standard had been applied there via licensing conditions for some time. South Australia and Tasmania (ACT does not have any MHFs) have drafted or are in the process of enacting MHF regulations (table D.1). Facilities in Commonwealth, state and territory coastal waters are regulated under a separate framework by the National Offshore Petroleum Safety Authority.

There are several inconsistencies in the adoption and implementation of the Standard and Code, some of which have implications for the effectiveness and efficiency of the control of MHFs.

³ The review requirement is set out in *Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard Setting Bodies*, endorsed by COAG in April 1995 and most recently amended in June 2004.

⁴ For NOHSC to declare national standards and codes, there had to be unanimous support from the members. Under the ASCC, the decision making rule has been reduced to a two-thirds majority.

Table D.1 Administration and enforcement of MHF regulations^a

| <i>Jurisdiction</i> | <i>Legislation</i> | <i>Lead regulators/agencies</i> | <i>Number of facilities^b</i> |
|---------------------------|---|---|---|
| Commonwealth | <i>Occupational Health and Safety Act 1991</i> Occupational Health and Safety (Safety Standards) Regulations 1994 | Comcare | 40 |
| Australian coastal waters | <i>Petroleum Submerged Lands Act 1967</i> Petroleum Submerged Lands (Management of Safety on Offshore Facilities) Regulations 1996 Equivalent state legislation | National Offshore Petroleum Safety Authority (NOPSA) | 149 ^c |
| New South Wales | <i>Occupational Health and Safety Act 2000</i> Occupational Health and Safety Amendment (Major Hazard Facilities) Regulations 2008 | NSW WorkCover Authority | 32 |
| Victoria | <i>Occupational Health and Safety Act 2004</i> Occupational Health and Safety Regulations 2007 (Part 5.2) | WorkSafe Victoria | 45 |
| Queensland | <i>Dangerous Goods Safety Management Act 2001</i> Dangerous Goods Safety Management Regulations 2001 | Chemical Hazards and Emergency Management Services Unit (Department of Emergency Services) | 32 |
| Western Australia | <i>Dangerous Goods Safety Act 2004</i> Dangerous Goods Safety (Major Hazard Facilities) Regulations 2007 | Resources Safety Petroleum and Major Hazard Facilities Safety Branch (Department of Consumer & Employment Protection) | 26 |
| South Australia | Dangerous Substances and Major Hazard Facilities Bill 2006 ^d | SafeWork SA | 12 |
| Tasmania | <i>Dangerous Substances (Safe Handling) Act 2005</i> Dangerous Substances (Safe Handling) Regulations ^e | WorkPlace Standards Tasmania | na |
| Northern Territory | <i>Workplace Health and Safety Act</i> Workplace Health and Safety Regulations <i>Dangerous Goods Act</i> Dangerous Goods Regulations | Northern Territory WorkSafe | 5 |

^a Correct at June 2007. ^b Numbers of facilities frequently vary and are included here only as a guide. ^c Total number of offshore facilities regulated by NOPSA, not all of which are classified as MHFs (or equivalent).

^d Legislation yet to be passed or yet to take effect. ^e Regulations in draft form. **na** Not available.

Adoption of the Standard has been patchy

Although the National Standard was drafted in 1996, the tardiness in adopting regulations arguably exposes the affected communities and the environment to unwarranted additional risk. This is not to ignore, however, the commercial, common law and other regulatory incentives that exist for operators to put systems in place to mitigate such risks.

Delays in regulation create uncertainty for MHF operators regarding their future regulatory obligations. As a result, operators might choose to defer investment in

safety related infrastructure until the compliance requirements have become known. Operators in jurisdictions that impose MHF controls may also suffer some competitive disadvantage, as they incur the compliance costs that their competitors located in regulation-free jurisdictions may choose to avoid.

The Plastics and Chemicals Industries Association (PACIA) (sub. 33, attachment 2) suggested part of the reason that jurisdictions delay implementing MHF regulations is that they lack expertise. They noted that it is difficult for governments, particularly those of smaller jurisdictions, to attract and retain staff with the relevant experience in MHF regulation and control.

Variation in the regulatory provisions

There is a degree of inconsistency in technical specifications and definitions. Box D.2 contains some examples of inconsistencies provided by PACIA (sub. 33, attachment 2). The first refers to discretionary provisions allowing a facility that exceeds the threshold limits of scheduled chemicals to not be classified as a MHF if it is determined that the associated risk does not warrant MHF-type controls. For example, Queensland and Western Australian regulations include such discretionary provisions, whereas facilities in Victoria will be classified as MHFs wherever scheduled chemical quantities exceed the specified threshold. Technically, this means that similar facilities could have MHF classification in one jurisdiction and not in another.

Box D.2 Some examples of inconsistencies across jurisdictions

In its submission to this study, the Plastics and Chemicals Industries Association (PACIA, sub. 33, attachment 2) identified a number of ways in which jurisdictions have applied the National Standard for the Control of Major Hazard Facilities in legislation, including the following:

- The definition of what is a major hazard facility (MHF) — some regulators have the discretion to not classify a facility as a MHF even where scheduled substances exceeding the thresholds set in the National Standard are present.
- The scope of the regulations — in some jurisdictions the safety case need only deal with health and safety issues, while in others it must also address environmental or land use planning issues, or property issues. These differences impact on the scope and complexity, and hence cost, of the safety case that facilities must develop.

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Box D.2 (continued)

- The choice of lead agency — MHF regulation is administered by different lead agencies, for example, WorkSafe in Victoria and Emergency Services in Queensland. This results in some differences in the focus of implementation.
- The definition of what is a ‘major incident’ — for example, Queensland deems a damage bill of \$50 000 or a very short stay in hospital as the threshold. This may capture many more incidents within the regime than would occur in other jurisdictions.
- Formal coverage of security — while most jurisdictions address security at MHFs in a generic way consistent with the National Standard, New South Wales regulations contain more prescriptive and detailed security requirements.

Source: PACIA (sub. 33, attachment 2).

Another area of variation across jurisdictions, which has been of some concern to industry, is in the application of licensing and registration models. For example, MHF operators must be licensed in Victoria, Western Australian and the Commonwealth, and under proposed legislation in South Australia. In other jurisdictions — New South Wales, Queensland and the Northern Territory — operators do not require licences, but instead require either classification or registration. Fees are charged (or proposed) in some jurisdictions and not in others.

New South Wales has recently introduced MHF regulations and has included new security requirements that depart from those in the National Standard and differ from security requirements for MHFs in other jurisdictions. It has taken this position on the basis that the provisions in the Standard no longer reflect the current security environment and that new provisions aim to ‘reflect the most up-to-date assessment of the nature and level of potential local security threats’ (sub. DR111, p. 9). Industry has expressed concern, however, that moves to introduce specific requirements for security at MHFs will add further complexity and inconsistency to the regulatory framework. PACIA argued that the scope of security provisions in the regulations should be kept consistent with the National Standard and that any additional security requirements be considered as part of the current national process underway in the *COAG Review of Hazardous Materials*, and agreed at a national level (pers. comm., 4 June 2008). It is expected that any new requirements will also be considered as part of the current review of the National Standard.

Inconsistency in institutional arrangements

Jurisdictions have chosen various lead agencies to regulate MHFs, and in some instances have allocated responsibility for the National Standard across multiple pieces of legislation. For example, some jurisdictions use OHS legislation, and the lead OHS regulatory agency to administer MHF controls. However, other jurisdictions use dangerous goods legislation and other regulatory agencies (table D.1). Inconsistency in institutional arrangements across jurisdictions can add to complexity, and therefore, the compliance burden for operators with facilities in multiple jurisdictions.

At a jurisdictional level, the responsibility for the regulation of MHFs often lies with a number of agencies. This adds to complexity and potential duplication in both regulatory and compliance functions. Regulatory agencies, other than the lead agency, such as environmental protection regulators, fire and emergency services, and planning bodies/local councils, need to be well coordinated in order to provide consistent advice to operators.

Cost recovery

Jurisdictions have taken different approaches to cost recovery for assessing MHFs. Table D.2 contains cost information for a sample of PACIA member companies that have facilities in multiple jurisdictions, and indicates a significant degree of variation in fees charged by regulators. Queensland does not currently recover costs of assessing MHFs. WorkSafe Victoria sets a maximum fee of \$56 560, with licences typically costing between \$30 000 and \$40 000 (WorkSafe Victoria, pers. comm., 11 February 2008). The costs to facilities in New South Wales were based on fees proposed prior to the introduction of the legislation, and indicated that costs to operators would be significantly higher in that jurisdiction.⁵

Differences in fees may also reflect the size and characteristics of the industries in each jurisdiction. Governments should ensure that fees are set transparently and are consistent with their respective cost recovery policies.

⁵ New South Wales regulations for major hazard facilities became effective on 14 July 2008. The relevant fees had not been finalised at the time of printing this report.

Table D.2 Classification fees across jurisdictions, selected PACIA member companies

| <i>Sample Company</i> | <i>Queensland</i> | <i>Victoria (1st licence)</i> | <i>Victoria (renewal)</i> | <i>NSW Proposed</i> |
|-----------------------|-------------------|-------------------------------|---------------------------|---------------------|
| | \$ per 5 years | \$ per 5 years | \$ per 5 years | \$ per 5 years |
| A | – | 35 000 | .. | 400 000 |
| B | – | 34 187 | .. | 350 000 |
| C | – | 36 000 | 30 000 | 440 000 |
| D | .. | 52 000 | .. | 440 000 |
| E | .. | 52 000 | 39 000 | 400 000 |
| F | – | 52 000 | .. | 440 000 |
| G | .. | 50 000 | 25 951 | 400 000 |

– Nil or rounded to zero. .. Not applicable.

Source: PACIA (sub. 33, attachment 2).

D.4 Existing mechanisms to address concerns about interjurisdictional inconsistency

Major hazard facility stakeholders — governments, employer and employee groups — have been aware of the concerns relating to interjurisdictional inconsistency in application of the national standard for some time. For example, in 2001, the Workplace Relations Ministers’ Council (WRMC) endorsed five strategies (and three related actions) to achieve national consistency in MHF regulation. Among other things, the WRMC asked NOHSC to:

- facilitate a consistent regulatory framework in all jurisdictions (including a review of Schedule 1)
- facilitate the sharing of expertise among jurisdictions
- facilitate the development of practical guidance and training material.

The NOHSC was also asked to report on the progress in implementing the National Standard across jurisdictions and the level of consistency. Annual Situation Reports were produced for 2002 through to 2004, and are available on the ASCC website.

A further government-led initiative to facilitate greater coordination of MHF regulation across jurisdictions was the establishment of the Major Hazard Facilities Working Group in 2005. This Working Group comprises Commonwealth, state and territory government regulators, and meets once or twice each year to share information about MHF regulation and safety issues.

D.5 The case for reform

The Commission has not received any submissions suggesting that MHF regulations are not warranted for chemicals facilities. However, there appears to be little quantitative information available regarding the net benefit of regulation.

In the original regulatory impact statement for its MHF regulations in 2000, the Victorian Government estimated that the average cost of (compliance with) MHF regulation would be between \$1.00 and \$1.58 per Victorian, and judged that '[t]o the extent that Victorians value the potential benefits accruing to the proposed Regulations at more than \$1.58 per year, then the benefits would exceed the costs' (sub. DR112, p.13). The Commission acknowledges that quantifying the benefits associated with this type of regulation is problematic. As this approach apportions costs only, without making any comparisons with incremental gain, it is difficult to make conclusions about net benefit. Further, reducing the cost to a per capita basis could appear to trivialise a cost to industry that is significant at a facility level. To more accurately estimate the true cost of the regulation to the community, administration costs such as the preparation and passage of the legislation, and the costs of regulating (that are not recovered through fees and charges), should also be taken into account.

It is also difficult to make broad conclusions about the effectiveness of MHF regulation based on the number and frequency of major incidents that have occurred before or after its implementation. Qualitative assessments about the causes of incidents might be more informative but the counterfactual is not easily estimated: that is, what would have happened if the MHF had (or did not have) the appropriate plans in place.

Australian governments, at least since 2001, have recognised that there are advantages to implementing the National Standard and Code consistently. In practice, achieving consistency has been difficult given that: jurisdictions have legislated under varying circumstances, including in response to a major accident; they have adopted, then built on, different regulatory approaches for hazardous substances, dangerous goods and OHS; there are differences in regulatory culture and in how legislative drafters across jurisdictions have interpreted national standards and codes. It has been difficult to assess the material impact of the resulting variation on the effective operation of the regulations due to limited cost-benefit analyses.

It is unclear that moving to a nationally-uniform system from the current set of arrangements would provide a net benefit to the community given the one-off costs associated with doing so. However, a greater degree of national consistency would reduce unnecessary complexity and ongoing compliance and administration costs,

create scale economies, and avoid fragmentation of scarce policy and regulatory expertise. It could also facilitate enforcement. Regulation of MHFs requires a level of specialised expertise that is in short supply. A critical mass of expert resources that could be more effectively employed across multiple jurisdictions could improve both the effectiveness and efficiency of regulation in this area.

D.6 Potential reform areas for consideration

The Commission endorses the ASCC review of the National Standard, and highlights potential areas for further investigation as part of that process. In particular, the review should assess the case for the regulation of MHFs over and above generic legislative requirements relating to OHS, environmental protection, land use planning and the like. The review could consider the options for co-regulation and self-regulation, examining whether firms' own commercial incentives, obligations under common law and other regulatory requirements are sufficient for adequate systems and controls to be put in place to avoid an incident.

The review should gather data from both industry and regulators, wherever possible, to gain some understanding of the costs of unnecessary complexity and duplication in administration that can be attributed to a jurisdiction's institutional arrangements (this includes compliance costs for operators as well as administration costs for regulators). Such information about the nature and degree of unnecessary complexity and duplication within a jurisdiction's regulatory framework would highlight areas for either reform or improved interagency coordination, such as through memorandums of understanding.⁶ Other analyses should include the costs of compliance for operators of comparable facilities in different jurisdictions, in terms of capital and operating costs, and any impacts that the inconsistent adoption of MHF regulations has had on competitive neutrality across jurisdictions.

A greater sense of the practical implications of the inconsistencies that exist between jurisdictions, and a rationale for their existence, could assist the review to determine whether these represent substantive issues, and how easily they can be addressed. It will also be important to consider reasons for the delays in the uptake of the National Standard in legislation by some jurisdictions.

⁶ A memorandum of understanding between WorkSafe Victoria and the Environment Protection Authority enables these agencies to coordinate some inspection and enforcement activity. It is currently being renewed.

