Deloitte Access Economics

# Consultation Regulation Impact Statement for model work health and safety regulations and Codes of Practice for mines

Supplement to the Decision Regulation Impact Statement for National Harmonisation of Work Health and Safety Regulations and Codes of Practice (Deloitte Access Economics, 2011)

## Safe Work Australia

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Deloitte.

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# Glossary

| | |
|---|---|
| ABS | Australian Bureau of Statistics |
| ACCI | Australian Chamber of Commerce and Industry |
| ACT | Australian Capital Territory |
| ACTU | Australian Council of Trade Unions |
| Ai Group | Australian Industry Group |
| AMMA | Australian Mines and Metals Association |
| CBA | Cost benefit analysis |
| COAG | Council of Australian Governments |
| Cth | Commonwealth |
| CPM | Comparative Performance Monitoring |
| DALY | Disability adjusted life year |
| DFD | Department of Finance and Deregulation |
| HSR | Health and safety representative |
| HWSA | Heads of Workplace Safety Authorities |
| IGA | Intergovernmental Agreement for Regulatory and Operational Reform in Occupational Health and Safety |
| MCA | Minerals Council of Australia |
| MCMPR | Ministerial Council on Mineral and Petroleum Resources |
| NDS | National Data Set |
| NMSF | National Mine Safety Framework |
| NOHSC | National Occupational Health and Safety Commission |
| NORM | Naturally occurring radioactive material |
| NPV | Net present value |
| NSW | New South Wales |
| NT | Northern Territory |
| OBPR | Office of Best Practice Regulation |
| OHS | Occupational health and safety |
| PCBU | Person conducting a business or undertaking |
| PCC | Parliamentary Council Committee |
| PMHMP | Principal mining hazard management plan |
| PPE | Personal protective equipment |
| Qld | Queensland |

| | |
|---|---|
| RIS | Regulation Impact Statement |
| SIG-OHS | Strategic Issues Group for Occupational Health and Safety |
| SA | South Australia |
| TAG | Temporary Advisory Group |
| Tas | Tasmania |
| VET | Vocational education and training |
| Vic | Victoria |
| VSL(Y) | Value of a statistical life (year) |
| WA | Western Australia |
| WHS | Work health and safety |
| WRMC | Workplace Relations Ministers' Council |

# Executive summary

## Background

The harmonisation of mining work health and safety legislation is part of the Council of Australian Governments (COAG) National Reform Agenda. These reforms aim to deliver a more consistent approach to regulation by Australian states and territories and the Commonwealth and to reduce compliance costs on business. The development of consistent mine safety legislation has been carried out as part of the National Mine Safety Framework (NMSF) which is also a part of the COAG National Reform Agenda.

The NMSF is an initiative of the former Ministerial Council on Mineral and Petroleum Resources (MCMPR). Work on the NMSF commenced in 2005 and predates COAG agreement to the National Reform Agenda. The NMSF aim is to establish a nationally consistent work health and safety regime in the mining industry without diminishing work health and safety standards.

The NMSF Steering Group, established by the MCMPR in November 2005 with tripartite representation has guided the development and implementation of the NMSF.

Safe Work Australia worked with members of the NMSF Steering Group and Secretariat to develop draft mining regulations suitable for inclusion in the model Work Health and Safety Regulations (model WHS Regulations), based on drafting instructions (DIs) developed by the NMSF Steering Group and endorsed by the MCMPR.

This Consultation RIS is supplementary to the Decision RIS that was developed for the model WHS Regulations and Codes of Practice and should be read in conjunction with it.

## Policy development process

At the present time mining work health and safety is regulated primarily under jurisdictions' work health and safety legislation in the Commonwealth, the Australian Capital Territory (ACT), Northern Territory (NT), Tasmania, South Australia (SA) and Victoria; under mine safety specific legislation in Queensland and Western Australia (WA) and under a hybrid model of both work health and safety and mine-specific legislation in New South Wales (NSW).

As there was lack of agreement between jurisdictions to adopt a single national model for mining health and safety legislation, DIs were developed for a common 'core' set of regulations of agreed subject matters to be used as the basis for the mining regulations in all jurisdictions. The policy underpinning the draft model work health and safety regulations for mines was developed by the NMSF Steering Group and endorsed by the MCMPR in May 2010. The MCMPR also agreed to NSW, Queensland and WA developing additional provisions that they considered were required to address high-risk mining activities like underground coal mining. These additional provisions are known as the 'non-core' provisions.

On 13 February 2011, COAG supported the model agreed by the MCMPR to develop a 'core' of model mine safety regulations that would be adopted by all jurisdictions. For the Commonwealth, the ACT, NT, SA, Tasmania and Victoria, these regulations would be included as part of the model WHS Regulations.

In June 2010, the Hon Martin Ferguson MP, the Federal Minister for Resources and Energy, wrote to the three 'non-core' state Ministers outlining the proposed process for developing the 'non-core' DIs. The first version of the 'non-core' DIs was completed in February 2011, following a comprehensive review of existing legislation and regulation throughout the second half of 2010. The final 'non-core' DIs were endorsed by the ad-hoc MCMPR subcommittee on 19 August 2011. The final regulations for the 'non-core' states are yet to be considered.

## Regulatory option considered

Given the current COAG and Ministerial Council policy processes, the following two options for regulating work health and safety in mines are considered in this Consultation RIS.

1. Option 1 – Retain the status quo. Jurisdictions continue with their current mining regulations with future amendments undertaken at jurisdictional level based on jurisdictional policy considerations.
2. Option 2 – Agree to common set of 'core' regulations. Jurisdictions agree to 'core' mining work health and safety regulations and Codes of Practice as the basis for a consistent approach to regulating mine safety across all jurisdictions. This means that:
    - 'core' regulations would form the basis of mine safety regulations under the model WHS Act for those jurisdictions that currently regulate mine safety under their principal work health and safety legislation, and
    - 'non-core' regulations would be developed by Queensland, NSW and WA to supplement the 'core' regulations and adopted in their proposed separate mine safety legislative instruments to cover those matters that could not be agreed upon to be included in the 'core' regulations.

## Preliminary analysis of potential impacts

Based on preliminary analysis it is expected that Option 2 (adopting the 'core' regulations by all jurisdictions) would results in an overall small net benefit to the Australian economy relative to Option 1 (status quo).

Option 2 will consolidate existing elements of state and territory work health and safety regulations for mines in a more consistent manner than at present and provide for a common set of 'core' regulations across six jurisdictions (the Commonwealth, ACT, NT, SA, Tasmania and Victoria), as well as providing a common core of regulations for NSW, Queensland and WA that is consistent with the other six jurisdictions. Option 2 as proposed will require changes in most subject areas in most jurisdictions to align with a consistent model that takes elements from existing frameworks.

For consultation purposes, this RIS includes a preliminary assessment of the significance of the potential impact on each jurisdiction arising from the proposed model regulations and Codes of Practice for mining compared with the status quo.

All jurisdictions will face change across most of the subject areas of the proposed regulations as the requirements for each subject area has been developed from components of existing regulation to create a common model. In most cases, not all of the components of the resultant model are incorporated in the legislation of any one jurisdiction. Individual mining operations will be impacted differently, depending on the jurisdiction they are currently operating in, the nature of their operations and the extent to which their current practice extends beyond existing regulations.

For each subject area of the proposed model regulations for mines, the expected change to existing arrangements has been assessed as either 'minimal or no change' (scored as '-' in Table i), 'some change' (1) or 'considerable change' (2). This rationale is based on detailed benchmarking and policy analysis undertaken by Safe Work Australia and consultation with key stakeholders. It is also consistent with the rationale undertaken in the RIS process that was completed for the model WHS Regulations and Codes of Practice. A summary of the changes is provided in Table i.

**Table i: Summary of expected changes to current jurisdictional regulations**

| Subject area | SA | NT | Tas | Vic | ACT | Cth | NSW | Qld | WA |
|---|---|---|---|---|---|---|---|---|---|
| Definitions | - | - | - | 1 | 1 | 1 | - | - | - |
| Appointment and notification of a mine operator | - | - | - | - | 1 | 1 | - | - | - |
| Managing risks | - | - | - | - | - | - | - | - | - |
| WHS management system | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 |
| Principal mining hazard management plan | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 |
| Specific risk control measures | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 |
| Emergency planning | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Information, instruction and training | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Fitness for work and health monitoring | 1 | - | - | 2 | 2 | 1 | 1 | - | 1 |
| Consultation and workers' safety role | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mine survey plan | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 |
| Notification of high potential incidents | 1 | - | 1 | 1 | 1 | 1 | - | - | - |
| Mine records | 2 | 2 | 1 | 2 | 2 | 2 | 1 | - | - |

Public comment is sought on the extent and costs of these proposed changes and on the impacts or safety benefits that may arise.

The information gathered during the public comment period may result in changes to the analysis currently contained within this Consultation RIS. This will be reflected in the Decision RIS.

The majority of changes are related to aligning work systems and associated documentation requirements across jurisdictions. For Victoria, the proposed inclusion of quarry and exploration operations in the definition of a mine would mean that these activities would now be required to comply with the mining-specific regulations. The ACT and the Commonwealth do not currently have mining-specific regulations so all of these requirements are a change. At the present time it is anticipated the impact will be small as the ACT has one operating quarry and the Commonwealth have no mining operations currently under their jurisdiction.

### *Preliminary cost-benefit analysis*

The primary focus for the cost benefit analysis in the Decision RIS will be to attempt to quantify and monetise the impacts of Option 2 relative to Option 1. It is expected that introduction of the proposed model work health and safety regulations for mines will present an overall small net benefit to the Australian economy. Some preliminary estimates are provided below.

To the extent that the proposed work health and safety regulations for mining are more outcomes-based than existing regulations in mining states, there could be safety benefits of around $0.5 billion a year, including productivity, avoided health system expenditure and preservation of skills. Similarly, as the great majority of employment is in firms who operate in multiple jurisdictions, the reduction in red tape from adopting the 'core' regulations could result in efficiency gains of around $1 billion a year.

These are both gross benefits. To the extent that the proposed model regulations are less prescriptive than those they replace, there may be ongoing compliance savings also but there would be initial adjustment costs of around $10 million for business. Regulators are also expected to incur some implementation and ongoing costs. The survey of mining firms to be undertaken during the consultation phase is expected to provide more robust estimates of the potential costs and benefits of Option 2 relative to Option 1.

# 1 Introduction

Under the COAG requirements a RIS needs to be developed for all agreements and decisions made by COAG, Commonwealth-State Ministerial Councils and national standard setting bodies. A RIS assesses the impact of a proposed government intervention like new regulations and enables public consultation and involvement in the regulation-making process. It also provides members of the community with the opportunity to comment on regulations before they become law.

The RIS process involves the development of a Consultation RIS which provides information on the proposed intervention to the public for comment. This is followed by a Decision RIS which provides the final assessment of the proposed intervention, utilising any further information and public feedback provided.

The draft model work health and safety regulations for mines are proposed as part of the package of the model WHS Regulations and Codes of Practice that would apply in the ACT, Commonwealth, NT, SA, Tasmania and Victoria and would be used as the basis for regulation and Codes of Practice in NSW, Queensland and WA. This Consultation RIS supplements the Decision RIS that was developed for the national harmonisation of the model WHS Regulations and Codes of Practice. It is part of the RIS process outlined above and provides information to enable feedback to be gathered from public consultation and comment.

Due to the delay in releasing the draft model work health and safety regulations for mines and associated Codes of Practice, it has become necessary to develop a separate RIS process that will form part of the overall regulatory impact analysis of the complete model WHS Regulations and Codes of Practice package.

The purpose of this Consultation RIS is to advise the regulatory options for consideration for model work health and safety regulations for mines, and to gather information to inform the cost benefit analysis which will be undertaken for the Decision RIS.

The Consultation RIS sets out the issues, objectives and options for the development of the model work health and safety regulations for mines. The aim of this is to gather views from affected parties on potential impacts of the options prior to the development of final recommendations presented in the Decision RIS. The information received will then be used to inform the cost benefit analysis to be undertaken in the Decision RIS.

A preliminary analysis of the expected impact of introducing the model work health and safety regulations for mines has been included in this Consultation RIS.

# 2 Background

## 2.1 Objectives of harmonisation of work health and safety reform

The harmonisation of work health and safety legislation is part of the COAG National Reform Agenda aimed at reducing regulatory burdens and creating a seamless national economy. These reforms aim to deliver more consistent regulation across jurisdictions and to reduce excessive compliance costs on business. They also aim to reduce restrictions on competition and distortions in the allocation of resources in the economy. The harmonisation of work health and safety legislation is intended to contribute to:

- creating a seamless national economy through reducing costs incurred by business in complying with unnecessary and inconsistent regulation across jurisdictions
- enhancing Australia's longer-term growth and improving workforce participation and overall labour mobility
- expanding Australia's productive capacity over the medium term through competition reform, enabling stronger economic growth
- improving compliance for multi-state businesses
- assisting the development of future regulations and Codes of Practice as knowledge regarding practices improves
- the smoother transition of goods and equipment between jurisdictions, and
- the transfer of processes between jurisdictions.

## 2.2 Overview of the mining industry

The majority of mining operations in Australia are carried out in NSW, Queensland and WA with approximately 85 per cent of workers engaged in the industry working in these three states. WA contributes 37 per cent of the total employment level for mining, NSW and Queensland combine for over 90 per cent of the total employment in the coal mining group, while WA has over half of the total employment in the metal ore mining industry group. It is estimated that the mining industry[1] employed approximately 148 000 people during the 2009-10 financial year, representing 1.5 per cent of total employment in Australia.

Reflecting these employment figures, about 85 per cent of larger mining operations are also undertaken in the three states. The majority of underground coal mining is carried out in NSW and Queensland.

Since the 1996-97 financial year, employment in the mining industry has doubled. In particular since 2004-05 employment in the mining industry has grown by 69 per cent.

[1] The 'mining industry' is defined here as ABS Australia and New Zealand Standard Industrial Classification 1993 (ANZSIC), (ABS Catalogue 1292.0), Division B (Mining) excluding ANZSIC group 120: Oil and Gas Extraction.

These proportions are also reflected in the fatality and serious workers' compensation claims statistics. Mining is an inherently dangerous activity. Despite substantial improvements the fatality rate in mining is still over twice as high as the national average for all industries (WRMC, 2009). During the period from 2004-05 to 2008-09 there were an average of 2500 accepted serious workers' compensation claims annually as a result of activities in the mining industry. These serious claims resulted in an average of $123 million in direct compensation and an estimated $2.4 billion in total economic costs covering areas including productivity, health care costs and loss of human capital.

For NT, SA, Tasmania and Victoria that currently regulate mining under their principal work health and safety legislation there are an average of 320 serious claims annually which is equal to 13 per cent of the Australian total. This results in $13.3 million annually in direct compensation payments and $260 million in total economic costs. Nearly one third of all claims made are a result of body stressing while claims involving mobile plant and transport, non-powered hand tools, materials and environmental agencies account for over three quarters of all claims.

In terms of serious workers' compensation claims[2], the mining industry accounted for 2280 claims during the 2008-09 financial year at a rate of 15.4 claims per 1000 employees. This total accounts for 2 per cent of the total number of serious claims lodged with Australian workers' compensation jurisdictions during the 2008-09 financial year. The incidence rate for the mining industry is slightly higher than for the all industries total of 13.0 claims per 1000 employees.

Further data on the mining industry is provided at Appendix A.

[2] Serious claims are defined as fatality, permanent incapacity or temporary incapacity resulting in a least one week absence from work.

## 2.3 Policy development process

The COAG commitment to work health and safety regulatory reform has been progressed by both Safe Work Australia with the development of the model WHS Act and model WHS Regulations and the NMSF Steering Group via its development of the NMSF.

The NMSF is an initiative of the former MCMPR which aims for a nationally consistent work health and safety regime in the mining industry. Its goal is to achieve both consistency and improved safety outcomes through appropriate regulatory frameworks. The NMSF consists of seven strategies focused on areas where consistency across jurisdictions would be most beneficial. The strategies are outlined in Appendix B. One of these strategies is the development of a nationally consistent mine safety legislative framework.

In November 2005, MCMPR established a tripartite Steering Group to guide the development of the framework. The Steering Group included representatives from State, NT and Australian governments, five industry associations, two trade unions and the Australian Council of Trade Unions (ACTU). The NMSF Steering Group met for the first time in July 2006.

In March 2008, COAG agreed to 27 areas of regulatory reform as part of its Business Regulation and Competition Reform Agenda. The NMSF was included in this agenda.

In October 2008, the NMSF Steering Group presented an implementation report to the MCMPR seeking endorsement of a number of recommendations relating to the seven strategies, including the following:

> ***"Strategy 1 - A nationally consistent legislative framework:*** *The Steering Group recommends that MCMPR endorse the NMSF Legislative Framework. This Framework identifies a set of broad legislative principles that all jurisdictions, with the exception of Tasmania, have committed to implementing to ensure legislative consistency. Tasmania is yet to advise its position. The Steering Group recommends the development of Drafting Instructions and Example Clauses based on this Legislative Framework, as a mechanism to translate the broad principles of the Legislative Framework into legislative change.*
>
> *The Drafting Instructions and Example Clauses are being developed flexibly to remain consistent with the concurrent review into model OHS laws, announced by the Minister for Employment and Workplace Relations on 4 April 2008."*

The MCMPR agreed to this recommendation and the NMSF Steering Group proceeded to implement it.

Currently NT, SA, Tasmania and Victoria regulate mine safety under their work health and safety legislation, which includes specific regulations relating to mining operations. NSW has a hybrid approach with the *Occupational Health and Safety Act 2000* applying to all mines, with additional and separate mine-specific legislation covering the operation of coal mines and metalliferous mines. Queensland and WA have mine safety legislative regimes separate from their principal work health and safety legislative frameworks. There are no mines operating in the ACT but its one quarry operation is regulated under the *Work Safety Act 2008*. The Commonwealth does not have mine-specific regulations, but if there were mining operations to regulate they would be covered under the *Occupational Health and Safety Act 2001.*

In developing the DIs and Example Clauses, divergent views emerged between NMSF Steering Group members on the appropriate scope and content of the DIs, particularly in relation to the level of regulation to be applied in various jurisdictions.

The NMSF Steering Group proposed a hybrid approach under which a set of 'core' DIs would be used to develop regulations which would be adopted by all jurisdictions. These regulations would form the basis of mine safety regulations under the model WHS Act for those jurisdictions that currently regulate mine safety under their principal work health and safety legislation (NT, SA, Tasmania and Victoria). These are referred to as the 'core' regulations. Further regulations ('non-core') would be developed by Queensland, NSW and WA to supplement the 'core' regulations and adopted in their proposed separate mine safety legislative instruments to cover those matters that could not be agreed upon to be included in the 'core' regulations.

The intent regarding the development of model work health and safety regulations for mines is that mining work health and safety issues that should be common to all jurisdictions will be mirrored under work health and safety regulations in the core jurisdictions and under mine safety legislation in the non-core states. It is expected that the ACT and the Commonwealth will also adopt the core mining regulations as part of their work health and safety legislation.

This hybrid approach and the content of the 'core' DIs was endorsed by MCMPR on 28 May 2010. On 13 February 2011, COAG supported the agreement of the MCMPR to the model mine safety regulations that would be adopted by all jurisdictions. Safe Work Australia has worked with the NMSF Secretariat to ensure consistency in work health and safety reform and to ensure that the draft model work health and safety regulations for mines are aligned with the approach of the other model WHS Regulations under the model WHS Act.

The proposed future work health and safety regime applying to mining in NSW, Queensland and WA is being progressed through the NMSF and will have a range of additional legislative provisions for mine safety beyond those of the proposed work health and safety regulations for mining. While NSW, Queensland and WA have committed to ensuring their mining safety Acts and Regulations are consistent with the model WHS Act and model WHS Regulations, variations will occur as some of the provisions identified below will need to be established under those Acts to provide additional or different heads of power.

The extent to which their legislation will differ from the model WHS Act, model WHS Regulations and the proposed work health and safety regulations for mining is the subject of ongoing policy work in these jurisdictions. The models developed for those jurisdictions will not be considered in this RIS beyond the impact of the adoption of the proposed work health and safety regulations for mining.

The issues currently under consideration for the 'non-core' provisions include:

- requirements for the appointment of a site senior executive at every mine
- requirements for additional full-time or part-time statutory mine safety positions, depending on the type of the mine and its associated hazards and risks
- arrangements to ensure consistent tri-state competency requirements, assessment and approval arrangements for key statutory positions
- principal control plans covering ventilation, electrical engineering, mechanical engineering, explosives and emergency response

- extending requirements for principal mining hazards to cover the risks of spontaneous combustion
- additional specific controls for certain hazards
- notification requirements in relation to prescribed high-risk mining activities, including information requirements and waiting periods before prescribed work may commence
- extended incident notification, investigation and protected information release provisions
- additional regulator enforcement powers similar to those that currently apply under mining health and safety laws in NSW, Queensland and WA
- provision for prescribed industry inspectors, for example district check inspectors and district worker representatives, and
- provision for ministerial appointment of Boards of Inquiry.

In June 2010, the Hon Martin Ferguson MP, the Federal Minister for Resources and Energy, wrote to the three 'non-core' state Ministers outlining the proposed process for developing the 'non-core' DIs. These letters noted that progress reports on the work would be provided to the NMSF Steering Group with final decisions to be made by an ad-hoc Committee comprising MCMPR Ministers of the participating jurisdictions. The first version of the 'non-core' DIs was completed in February 2011, following a comprehensive review of existing legislation and regulation throughout the second half of 2010. The first version was progressively refined by state regulators with input from state-based industry and union officials. The final 'non-core' DIs were endorsed by the ad-hoc MCMPR subcommittee on 19 August 2011.

The final regulations for the 'non-core' states are yet to be considered.

# 3 Statement of the problem

## 3.1 Overview of current mining work health and safety arrangements

Under current arrangements all states and territories are responsible for making and enforcing their own work health and safety legislation, including for mining.

Currently the Commonwealth, NT, SA, Tasmania, Victoria and the ACT have general work health and safety legislation which applies to mining workplaces, with the first four jurisdictions including mining-specific regulations within their general regulations. Queensland and WA have mining-specific work health and safety legislation, while NSW has a combination of mining-specific and general work health and safety legislation. The only mining operation that the ACT currently has under its jurisdiction is one quarry. The Commonwealth currently has no mining operations under its jurisdiction.

Mining legislation and the associated regulator structure have developed in different ways in each jurisdiction. The type of mining undertaken in each jurisdiction has a significant influence on the legislation and matters covered. Significant changes to legislation are often triggered in response to recommendations following inquiries into significant mining accidents. For example, the current detailed coal mining legislation in NSW and Queensland has most recently been developed in response to inquiries into underground coal mining accidents resulting in multiple fatalities, including Moura in 1986 and 1994 and Gretley in 1996. Recent amendments to Tasmania's mine safety regulations were in part a response to the Beaconsfield accident in 2006.

Current jurisdictional legislation relating to mining safety is summarised below.

Northern Territory

- *Workplace Health and Safety Act 2007*
- *Workplace Health and Safety Regulations* – Part 11A – Mining operations
- *Mining Management Act 2001*
- *Mining Management Regulations 2001*

The NT legislation:

- defines 'mining operations' and 'mining site'
- sets out the requirement for a risk management plan and that the contents of the plan must also include a fitness to work program, the management structure of the mine and an emergency plan with specified content
- sets out requirements for health surveillance, and
- requires the reporting of serious accidents and other related information.

South Australia

- *Occupational Health, Safety and Welfare Act 1986*
- *Occupational Health, Safety and Welfare Regulations 2010* - Division 12 - Mining Work and Division 13 - Opal Mining
- *Mines and Works Inspection Act 1920, and*
- *Mines and Works Inspection Regulations 1998.*

The SA legislation:

- defines a 'mine', 'mining' and 'mining operation' (by reference to the *Mines and Works Inspection Act 1920)*
- requires the mine manager to keep an inspection record system
- requires the assessment of site conditions and reporting on the safety precautions that should be taken
- requires that a competent person undertake daily inspections of plant and the shafts and areas in a mine where persons may be
- sets out requirements for the performance of work, including that suitable resources be provided to ensure site conditions are safe, that safe systems of work are in place, and that work be planned, supervised and carried out in a safe manner
- sets out requirements for self-rescuers
- sets out specific provisions relating to ground stability, use of diesel engines underground, winches and personnel transportation, shafts and winding, use and storage of fuel underground, electrical installations and ventilation
- sets out specific provisions relating to blasting and handling of explosives, including licensing of shotfirers, and
- sets out specific provisions for opal mining.

Tasmania

- *Workplace Health and Safety Act 1995*
- *Workplace Health and Safety Regulations 1998* - Part 4A – Additional Requirements for Mine Safety
- *Workplace Health and Safety Amendment (Mine Safety) Regulations 2011.*

The Tasmanian Act:

- defines 'mining operations' and 'mineral'
- requires the appointment of a mine operator and sets out their duties
- requires the appointment of a site senior officer and sets out their duties
- sets out the general duties of employees and contractors
- requires that a management structure be set up and maintained for the mine

- requires that a mine health and safety management system be developed, implemented, maintained and reviewed and sets out provisions for the auditing of the system
- requires notification of commencement and suspension of mining operations, and
- requires an inspections record book to be kept.

The Tasmanian regulations:

- define 'mining'
- sets out requirements for identifying hazards, assessing the risks from those hazards, putting controls in place to eliminate or reduce the risks and reviewing these processes
- sets out requirements to establish a major hazard management plan, including identifying and assessing major hazards, with specific requirements relating to the management of inrush and flooding, airborne contaminants, plant and electricity to be included in the plan
- sets out the requirements for the mine health and safety management system and specifies the content of the system, including the management structure, major hazard management plans, the risk management process, the emergency response plan, a fitness for work program and a health surveillance program, and
- sets out specific provisions relating to the preparation and keeping of mine plans, the mine layout, design and construction, ground control, geotechnical and geological considerations, shafts and winding equipment, quality of the atmosphere in a mine and ventilation (including for operation of diesel engines), explosion and fire, working at heights, closing and abandoning a mine, prohibitions, and unauthorised access.

Victoria

- *Occupational Health and Safety Act 2004*
- *Occupational Health and Safety Regulations 2007* - Part 5.3 – Mines
- *Mineral Resources (Sustainable Development) Act 2002*
- *Mineral Resources (Sustainable Development) Regulations 2002*

The Victorian legislation:

- defines a mine and requires mining operations to be licensed
- defines a range of hazards to be mining hazards and requires that the operator of a mine identify mining hazards, assess the risks from those hazards, put controls in place to eliminate or reduce the risks and review these processes
- requires a strata control plan to be developed
- sets out who can enter a mine, including minimum age limits for workers
- defines what it means to be 'adversely affected' by alcohol and drugs and requires the mine operator to implement strategies to reduce risks from consumption of alcohol and use of drugs
- requires the mine operator to implement strategies for fatigue
- sets out requirements for health surveillance
- sets out requirements for communication with employees working alone and at shift change over

- sets out that certain mines are or can be prescribed mines and requires that a safety management system be established, implemented and reviewed for those mines, including that a more detailed risk assessment be undertaken for major mining hazards and testing the control measures selected
- sets out specific requirements for prescribed mines relating to an employee's safety role, mine winders, the progress of mine workings, emergency exits, filling, working environment, ventilation system, recording monitoring and testing, prohibitions, emergency plans, self rescue and mine plans, and
- sets out general requirements for information, instruction and training, availability of documents and responsibility of employees.

New South Wales

- *Occupational Health and Safety Act 2000*
- *Occupational Health and Safety Regulation 2001*
- *Mine Health and Safety Act 2004*
- *Mine Health and Safety Regulation 2007*
- *Coal Mine Health and Safety Act 2002*
- *Coal Mine Health and Safety Regulations 2006*

The NSW mining Acts:

- define 'mine' and 'mineral'
- sets out that the Acts are to operate in conjunction with the *Occupational Health and Safety Act 2000*
- requires the nomination of the operator of a mine
- requires the establishment of a safety management plan for a mine that sets out the operator's systems, policies, plans, programs and procedures, the basis for identifying hazards and assessing risks, the development and implementation of controls, the management structure of the mine, the contactor management plan and the emergency plan
- allows for the regulations to identify a 'major hazard' for coal mines and require the specific development of a major hazard management plan
- sets out provisions relating to emergency management
- sets out requirements for record keeping
- sets out duties of persons in management positions, supervisors and contractors
- sets out specific provisions relating to mine plans, hours of work, tourist and educational activities, notification of incidents
- sets out specific safety requirements for coal mines relating to systems of working mines, closing shafts in abandoned mines and controlling emplacement areas
- allows the Minister to establish a Board of Inquiry and to issue stop work orders
- sets out provisions for establishing Competency Boards for the setting and assessment of competency standards for statutory positions

- sets out the administrative arrangements for enforcement and compliance, including establishment of an inspectorate, appointment and powers of inspectors, penalties and offences, and
- sets out provisions for the election, appointment and operation of site check inspectors and additionally for coal mines, electrical check inspectors and district check inspectors.

The NSW mining regulations:

- sets out requirements to nominate the operator of a mine
- requires a production manager to be appointed
- sets out further details relating to content of the safety management plan and emergency plan
- sets out specific provisions relating to ground instability, inrush, shafts, plant, fire and explosion, handling explosives, electricity, mine road design and construction, structures and buildings and controlled areas and waste material
- sets out provisions for major hazard plans for slope stability, surface transport, underground transport, strata failure, inrush, fire and explosion, dust explosion, explosives and airborne dust
- sets out requirements relating to controlled materials, plant and practices in coal mines
- sets out requirements for coal dust explosion prevention
- sets out specific requirements in coal mines for ventilation, means of escape, operation of transport and surveys
- sets out specific provisions relating to working arrangements covering hours of work, fitness for work, minimum age for underground work and health surveillance
- sets out requirements for mine plans including provisions relating to mine surveyors and surveys
- sets out details relating to the setting and assessment of competency standards and the issuing of certificates, and
- sets out requirements for notifications and record keeping.

Queensland

- *Mining and Quarrying Safety and Health Act 1999*
- *Mining and Quarrying Safety and Health Regulation 2001*
- *Coal Mining Safety and Health Act 1999*
- *Coal Mining Safety and Health Regulation 2001*

The Queensland Act:

- defines ‘mine’, ‘operations’ and ‘quarry’
- sets out obligations of mine holders, operators, site senior executives, contractors, service providers and upstream duty holders
- sets out requirements and notifications for a range of statutory positions
- requires the establishment of a safety and health management system for a mine that sets out the operator’s health and safety policy and implementation plan, capability development plan, procedures and standard work instructions, provisions for monitoring and reviewing the system

- requires the keeping of a mine record that includes the management structure, a record of inspections, investigations and findings and serious accidents
- requires the keeping of plans of mine workings
- allows the Minister to make guidelines about health and safety matters
- sets out industry consultative arrangements
- sets out provisions for the selection, election and operation of site safety and health representatives and committees and district worker representatives
- sets out the administrative arrangements for enforcement and compliance, including establishment of an inspectorate, appointment and powers of inspectors, penalties and offences
- establishes a Board of Examiners to set and examine the competency of managers and other statutory positions
- sets out specific duties relating to accidents and occurrences, and
- allows the Minister to establish a Board of Inquiry.

The Queensland regulations:

- set out requirements for identifying hazards, assessing the risks from those hazards, putting controls in place to eliminate or reduce the risks, monitoring the risks and keeping records of the processes, and
- set out specific requirements in relation to accidents, incidents and injuries, electricity, emergencies, facilities and processes, hazardous substances and dangerous goods (including prohibited substances), mine plans, persons on site, plant, procedures and work instructions, records, winding operations and the work environment.

Western Australia

- *Mines Safety and Inspection Act 1994*
- *Mines Safety and Inspection Regulations 1995*

The WA Act:

- defines 'mine', 'mineral' and 'mining operations'
- sets out duties of employers, employees and mine managers
- sets out the administrative arrangements for enforcement and compliance, including establishment of an inspectorate, appointment and powers of inspectors, penalties and offences
- sets out provisions for the management of mines, including the appointment of managers, deputy managers and quarry managers,
- establishes a Board of Examiners to examine the competency of managers and other statutory positions
- sets out provisions for health and safety representatives, health and safety committees and resolution of health and safety issues, and

- sets out specific duties relating to health surveillance, accidents and occurrences, mine plans and records.

The WA regulations:

- expand on the requirements for the operation of the Board of Examiners
- sets out competency and eligibility requirements for mine managers, quarry managers, underground supervisors, deputies and winding engine drivers
- sets out details of requirements for health surveillance, monthly reporting of accidents, mine surveys and plans (including eligibility requirements for mine surveyors),
- sets out health and safety requirements for a range of general health and safety hazards and risks, construction work, emergency preparation, electrical safety, plant, noise, hygiene and sanitation, hazardous substances, use of explosives and ventilation, dust control and atmospheric contaminants
- sets out additional requirements for underground mines (including use of diesel engines underground), winders, shaft sinking, surface mining operations, dredging and railway operations
- sets out specific requirements for radiation safety, and
- sets out provisions for the election of employee inspectors.

ACT

- *Work Safety Act 2008*
- *Work Safety Regulation 2009*

There are no specific requirements in the ACT legislation that relate to mining safety. Mining is not specifically covered nor is it excluded from its general work health and safety legislation.

Commonwealth

- *Occupational Health and Safety Act 1991*
- *Occupational Health and Safety (Safety Arrangements) Regulations 1991, and*
- *Occupational Health and Safety (Safety Standards) Regulations 1994.*

There are no specific requirements in the Commonwealth legislation that relate to mining safety. Mining is not specifically covered nor is it excluded from its general work health and safety legislation.

## 3.2 Regulatory inconsistencies under current arrangements

The different factors that have influenced the development of mine safety legislation in each of the states and territories and the differing regulatory arrangements have resulted in mine safety legislation that is inconsistent across Australia. These inconsistencies potentially result in different levels to which safety is regulated in mines as well as inefficiencies, particularly for mining companies and mining support and service companies operating across more than one jurisdiction. These issues are further outlined below.

***Multi-state employers and red tape:*** The most prominently reported cost of the current arrangements arises from the issue of red tape. This is the cost to employers who operate in more than one jurisdiction to comply with more than one jurisdiction's work health and safety and/or mine safety legislation. Red-tape and system duplication requires an increased effort to meet the differing requirements of jurisdictions to meet essentially the same work health and safety ends. The processes are necessary to support the work health and safety framework in each jurisdiction, but the differences shift an employer's work health and safety focus from improving safety in the workplace to dealing with paper work. Although multi-state organisations make up less than 1 per cent of businesses they are generally larger firms and account for nearly 29 per cent of employment.

***Government and taxpayers:*** Taxpayers via remit to state, territory and Commonwealth government revenue funds pay for the development, implementation and review of work health and safety and/or mine safety legislation and this process is currently duplicated periodically in each jurisdiction using different schedules. These differing schedules increase inconsistency and create an environment of perpetual change.

***Community costs:*** The Regulation Taskforce noted in their report (2006 p15) that "where regulation increases business costs, these are often passed on to consumers in the form of higher prices for goods and services. Some regulations may also unnecessarily restrict consumer choice". Regulation that increases business costs or restricts business opportunities may jeopardise not only the profits of owners but also the job security and wages of their workers.

***Reduced mobility of the workforce:*** The necessity to be trained and certified as competent for some types of work under separate arrangements in each jurisdiction limits workforce mobility.

***Inequity:*** Different safety requirements applying across jurisdictions create inequities for employers and workers.

***Distractions:*** The Productivity Commission (2004) reported that the need to focus on complying with different requirements between jurisdictions is seen as a distraction for management, away from focussing on developing a company-wide culture of preventing injury and illness. It quoted a submission from Pacific National that 'rather than being proactive and developing better prevention and implementation strategies, internal safety management safety staff must spend time training and researching jurisdictional differences.'

# 4 Options for model work health and safety regulations for mines

## 4.1 Policy development process

As discussed in Chapter 2, in developing the DIs and Example Clauses, divergent views emerged between NMSF Steering Group members on the appropriate scope and content of the DIs, particularly in relation to the level of regulation to be applied in various jurisdictions.

The NMSF Steering Group proposed a hybrid approach under which a set of 'core' DIs would be used to develop regulations which would be adopted by all jurisdictions. These 'core' regulations would form the basis of mine safety regulations under the model WHS Act for those jurisdictions that currently regulate mine safety under their principal work health and safety legislation (NT, SA, Tasmania and Victoria). 'Non-core' regulations would be developed by Queensland, NSW and WA to supplement the 'core' regulations and adopted in their proposed separate mine safety legislative instruments to cover those matters that could not be agreed upon to be included in the 'core' regulations.

This hybrid approach and the content of the 'core' DIs was endorsed by MCMPR on 28 May 2010. On 13 February 2011, COAG supported the agreement of the MCMPR to the model mine safety regulations that would be adopted by all jurisdictions.

In June 2010, the Hon Martin Ferguson MP, the Federal Minister for Resources and Energy, wrote to the three 'non-core' state Ministers outlining the proposed process for developing the 'non-core' DIs. These letters noted that progress reports on the work would be provided to the NMSF Steering Group with final decisions to be made by an ad-hoc Committee comprising MCMPR Ministers of the participating jurisdictions. The first version of the 'non-core' DIs was completed in February 2011, following a comprehensive review of existing legislation and regulation throughout the second half of 2010. The final 'non-core' DIs were endorsed by the ad-hoc MCMPR subcommittee on 19 August 2011.

The final regulations for the 'non-core' states are yet to be considered.

## 4.2 Regulatory options

The following two options for regulating work health and safety in mines, taking account of current COAG and Ministerial Council policy processes, have been identified:

3. Option 1 – Retain the status quo. Jurisdictions continue with their current mining regulations with future amendments undertaken at jurisdictional level based on jurisdictional policy considerations.
4. Option 2 – Agree to common set of 'core' regulations. Jurisdictions agree to 'core' mining work health and safety regulations and Codes of Practice as the basis for a consistent approach to regulating mine safety across all jurisdictions. This means that:
    a. 'core' regulations would form the basis of mine safety regulations under the model WHS Act for those jurisdictions that currently regulate mine safety under their principal work

health and safety legislation (NT, SA, Tasmania, Victoria, the Commonwealth and the ACT[3]); and

b. 'non-core' regulations would be developed by Queensland, NSW and WA to supplement the 'core' regulations and adopted in their proposed separate mine safety legislative instruments to cover those matters that could not be agreed upon to be included in the 'core' regulations.

    i. Tasmania has indicated that they may need additional regulations beyond the 'core' regulations based on recent amendments made to their mining regulations following the Beaconsfield mining accident.

**Option 1 – Retain the status quo**

Retaining the existing framework for mine safety would mean that mining operators and mining service industries operating in more than one state or territory would continue to need to amend their practices and procedures specific to each state and territory they operate in. Service industries operating in industry sectors other than just mining may have different requirements compared with those required under the model work health and safety legislative framework, depending on the jurisdictions they operate in.

Option 1 would also lead to a more fragmented and possibly more complex framework than currently exists in SA, NT, Tasmania and Victoria following adoption of the model work health and safety legislation in those jurisdictions. As mining safety is currently regulated under their work health and safety legislation, they would either need to develop alternative arrangements to regulate mining or retain existing provisions.

Under Option 1, it would be likely that jurisdictions would continue to make occasional incremental, and possibly nationally inconsistent, amendments to their mining regulations.

**Option 2 – Agree to common set of 'core' regulations**

Option 2 is consistent with the proposal agreed by MCMPR in May 2010 and subsequently COAG in February 2011 to resolve the lack of agreement between jurisdictions to adopt a single national model for mining health and safety legislation. MCMPR and COAG agreed to the development of drafting instructions for a common core set of regulations of agreed subject matters to be used as the basis for the mining regulations in all jurisdictions.

Tasmania, NT, SA and Victoria will retain a common set of model mining health and safety regulations under their respective work health and safety Acts. The Commonwealth and the ACT have also indicated they will adopt these provisions to regulate any mining activity under their jurisdictions. For these six jurisdictions the requirements are expected to be fully adopted and harmonised.

Tasmania has indicated that they may need additional regulations beyond the 'core' regulations based on recent amendments made to their mining regulations following the Beaconsfield mining accident. The final decision on this matter is yet to be made and it is anticipated that Tasmania will include some of the 'non-core' regulations to reflect the current status quo in Tasmania.

[3] There are currently no specific requirements in the Commonwealth or ACT legislation that relate to mining safety.

Queensland, NSW and WA agreed that the legislation in each of their jurisdictions would be as consistent as possible with each other and with the model work health and safety legislative framework, and that their regulations would use the agreed core regulations as the basis for their more detailed jurisdictional regulations. This body of work is collectively referred to as the 'non-core' legislation. If the 'non-core' work proceeds as intended, it will mean that for multi-jurisdictional mine operators, there will be a higher level of transferability of health and safety processes, practices and procedures than there is currently, but less than if all jurisdictions had agreed on and adopted a same set of national and fully harmonised regulations.

## 4.3 Regulatory proposal

The mapping process in the following chapters presents analysis of the proposed model work health and safety regulations for mines where there is 'minimal or no', 'some' or 'considerable' change above and beyond the status quo. Where evaluation has found that there is likely to be change and significant measurable impacts associated with changing from the status quo (Option 1) and moving towards adopting the recommendations from the MCMPR (Option 2) this is further discussed.

The analysis in the following chapters will identify incremental changes between the two Options. Incremental impacts are defined as those impacts considered to be unique to Option 2 relative to Option 1. This RIS does not reconsider impacts already imposed by the model WHS Act. Where an existing National Standard or Code of Practice and associated RIS have previously been agreed and have been used as the policy basis for model WHS Regulations, it is only the incremental change and impact beyond that previously assessed which will be considered as part of Option 2. Only new and additional requirements imposed by the proposed model work health and safety regulations for mines are discussed in this RIS.

The impact analysis will examine activities covered by the proposed model work health and safety regulations for mines, views from governments, businesses and workers, a large scale survey and desktop research. The cost benefit framework and the mapping process outlined in the following chapters are primarily designed to evaluate the incremental differences between Option 1 and Option 2.

Based on pursuing Option 2 as the model agreed by COAG in February 2011, the proposed model regulations for mines as set out below would be included as Part 9 of the model WHS Regulations in the Commonwealth, the ACT, NT, SA, Tasmania and Victoria. It is proposed that NSW, Queensland and WA would use the proposed regulations as the minimum basis for regulations developed under their respective mining safety legislation.

The proposed model regulations are made up of seven parts, four schedules and one appendix.

The parts relate to:

1. Preliminary
2. Managing risks
3. Fitness for work and health monitoring
4. Consultation and workers' safety role
5. Mine survey plans
6. Notification of high potential incidents

7. Mine records

The schedules relate to:

1. Work health and safety – information to be included in mine quarterly report
2. Principal mining hazard management plans – additional matters to be considered
3. Prohibited uses in mines
4. Matters to be included in emergency plan for a mine

The appendix relates to:

1. Jurisdictional notes

A summary of these parts, schedules and the appendix is provided below.

### Part 9.1 – Preliminary

These provisions provide definitions for 'mine', 'mineral', 'mining operations', 'mine operator', 'mine holder' and 'principal mining hazard'. Specific provision is also made for the appointment of a mine operator and procedures that must follow.

### Part 9.2 – Managing risks

This section is separated into four divisions: general control of risk, principal mining hazard management plans, specific risk control measures and emergency planning.

#### *Division 1 – General control of risk*

This division relates to the identification of hazards, how those hazards are to be assessed for risk and how to control the risk. The operator must, so far as is reasonably practicable, minimise risks to health and safety associated with mining operations. Mine operators must review and revise measures as required and keep a record of notifiable incidents and their effects.

A work health and safety management system must be established and implemented for the mine. The work health and safety management system must provide a comprehensive and integrated system for the management of all aspects of risk control and be documented. The content, monitoring, audit and review of the system are also regulated. Certain information must also be provided to the regulator on a quarterly basis.

#### *Division 2 – Principal mining hazard management plans*

The mine operator must prepare a management plan in relation to each principal mining hazard identified. The regulations provide details of what the plan must cover, the risk assessments under the plan and that the plan must be reviewed and revised as necessary.

#### *Division 3 – Specific risk control measures*

This section is the most extensive of the regulations and contains provisions for specific risks and what the mine operator must ensure is done to manage those risks. This relates to:

- Communication between outgoing and incoming shifts. The mine operator must ensure that a system is provided that requires supervisors of outgoing shifts to report work health and safety matters to the supervisors of incoming shifts. The content of the report must be communicated to workers on the incoming shift.
- Progress of workings. The mine operator must ensure adequate steps are taken for work health and safety regarding inrush hazards, connecting underground workings and in relation to two working faces approaching each other.
- Shafts and winding. The mine operator must ensure that every winding system at the mine meets the specified requirements.
- Movement of mobile plant. To minimise risks associated with the movement of mobile plant the mine operator must consider issues such as the design and construction of roads and interactions between pedestrians and mobile plant.
- Dust explosion in an underground mine. The mine operator must minimise the risks and associated risks of a dust explosion occurring in an underground mine. The control measures which must be implemented are specified.
- Ventilation control plan for an underground mine. The mine operator must ensure that there is a ventilation control plan for the mine covering all aspects of ventilation, including design, operation and maintenance of ventilation systems.
- The mine operator must ensure that the atmosphere is subject to controls that prevent heat stress and that the moisture content is maintained at a safe level.
- Measures to be implemented. The mine operator must implement measures that meet air quality and safety standards under the regulations.
- Exposure to airborne contaminants. The mine operator must eliminate or minimise exposure of any person to any airborne contaminants.
- Air quality and safety of underground mines. The mine operator of an underground mine must ensure the ventilation system meets the specified requirements.
- Additional requirements relating to methane in underground mines. The mine operator must ensure that methane concentration does not exceed 0.25 per cent. The actions to be taken with specified concentrations of methane are specified.
- Notice to workers and others. If the air monitoring shows results that are higher than those specified in the regulations, the mine operator must notify the affected persons.
- Signs. The mine operator must ensure there are signs that explain the meaning of warnings produced by an air monitoring device and what persons must do in response to the warning.
- Air monitoring of all mines. The mine operator must ensure that air monitoring is conducted in accordance with a risk assessment and that the air monitoring devices are suitable and positioned appropriately.
- Records of air monitoring. The mine operator must keep a record of any air monitoring conducted at the mine for at least seven years. It must be accessible to workers and other persons.
- Ventilation in an underground mine. The mine operator must meet the specified provisions and recording requirements relating to the ventilation system.
- Ventilation plans for underground mines. The mine operator must prepare and keep a plan. The contents and requirements of the plan are specified in the regulation.

- Prohibited uses. The mine operator must ensure that items of plant or substances specified in Schedule 9.3 are not used in a place or for a purpose that is prohibited under that Schedule.
- Closure, suspension or abandonment of mine. The mine operator or mine holder must ensure that the mine is safe and secure in the closure/suspension of a mine.

### *Division 4 – Emergency planning*

The requirements of this division are in addition to the requirements for emergency plans under Part 2.2 of the model WHS Regulations. The mine operator must prepare and implement an emergency plan which addresses all aspects of emergency response, including a system to locate all persons at the mine and the provision of adequate rescue equipment. The plan must be documented and prepared in consultation with emergency services and local authorities. The plan must be provided to emergency services. This division also sets out requirements for the provision of resources, testing and reviewing the emergency plan, emergency exits and signage and safe escape from underground mines. Persons going into an underground mine must be provided with a self-contained self-rescuer and personal protective equipment (PPE) must be provided to those carrying out first aid or rescue procedures.

### *Division 5 – Information, training and instruction*

The mine operator must ensure that the work health and safety management system, principal mining hazard management plan, ventilation control plan and emergency plan are readily accessible to workers. The mine operator must ensure that adequate and relevant information is provided to both workers and visitors, that relevant training is given to workers and updated courses are given when needed. The information, training and instruction must be reviewed and as necessary revised. Records of training are to be kept.

## Part 9.3 – Fitness for work and health monitoring

The mine operator must ensure adequate strategies are developed and implemented to control risks associated with worker fatigue or arising from the consumption of alcohol or use of drugs. The mine operator must also ensure that those affected by alcohol or drugs do not enter or remain at a mine.

The mine operator must ensure that when a worker is exposed to a risk, health monitoring is carried out which is supervised by a registered medical practitioner. The health monitoring must be recorded and a summary given to the worker and the regulator as soon as practicable. The records must be kept for a stipulated period of time and the regulation also governs privacy and provision of records.

## Part 9.4 – Consultation and workers' safety role

The mine operator must implement a safety role for workers that will enable them to contribute to the identification of hazards and risk control measures.

## Part 9.5 – Mine survey plans

The mine operator must ensure that survey plans are prepared, reviewed, revised and available for inspection in a manner that is readily accessible to workers.

### Part 9.6 – Notification of high potential incidents

The mine operator must ensure high potential incidents are notified to the regulator, even if no one was in the vicinity at the time.

### Part 9.7 – Mine records

The mine operator must keep a mine record as specified in the regulation.

### Schedule 9.1 – Work health and safety – information to be included in mine quarterly report

The information that is to be included comprises the commodity processed, statistics relating to the performance of the mine including the number of workers and total hours worked, and statistics related to incidents at the mine such as the number of incidents, fatalities and lost time.

### Schedule 9.2 – Principal mining hazard management plans – additional matters to be considered

These regulations define how the following matters must be considered in assessing the impact on the safety of workers and others in the mining operations for the principal mining hazards. That is:

- ground or strata instability
- inundation and inrush of any substance
- mine shafts and winding operations
- roads and other vehicle operating areas
- air quality, dust and other airborne contaminants
- fire or explosion
- gas outbursts, and
- ionising radiation.

### Schedule 9.3 – Prohibited uses in mines

These regulations provide a format to record items and their prohibited uses in mines.

### Schedule 9.4 – Matters to be included in an emergency plan for a mine

These regulations define what detail is required in the emergency plan including site information and the likely impacts of a major incident. It also includes the command structure for personnel, notifications, resources and equipment required and various procedures.

### Appendix – Jurisdictional notes

This appendix lists what the jurisdictions may define for particular parts of the regulation. Most of the notes relate to the preliminary part of the regulations.

### Codes of Practice

The NMSF, with assistance from Safe Work Australia, has also developed a set of model Codes of Practice to support the model WHS Regulations for mines. The proposed 14 core mine safety codes are:

- Work Health and Safety Management Systems in Mining*
- Managing Naturally Occurring Radioactive Materials in Mining *
- Strata Control for Underground Coal Mines *
- Roads and Other Vehicle Operating Areas *
- Inundation and Inrush Hazard Management *
- Emergency Response for Australian Mines *
- The Mine Record*
- Survey and Drafting Directions for Mine Surveyors
- Mine Closure
- Ground Control in Underground Mines
- Health Monitoring in Mining
- Ventilation of Underground Mines
- Ground Control for Open Pit Mines, and
- Underground Winding Systems.

In July 2011, Safe Work Australia Members agreed to release the first set of draft model Codes (marked * above) for public comment on 15 July 2011. Members also agreed to the remaining Codes of Practice being released for public comment on 29 July 2011.

# 5 Analysis of expected change from the proposed model work health and safety regulations for mines

The commonalities and differences between the draft model work health and safety regulations and Codes of Practice for mining and the work health and safety requirements for mines of each jurisdiction in Australia have been examined. The Commonwealth and ACT have been included in this analysis, although given the general absence of mining operations there may be little impact for these jurisdictions. The ACT currently has one quarry.

A preliminary assessment indicating the extent of change for each jurisdiction provided for consultation purposes has been undertaken in this chapter. Table 5.1 provides the structure of draft model work health and safety regulations and Codes of Practice for mines.

**Table 5.1: Structure of draft model work health and safety regulations and Codes of Practice for mines**

| Model WHS Regulations | Codes of Practice |
|---|---|
| **Mines** | |
| Work health and safety management system | • Work Health and Safety Management System in Mining |
| Principal mining hazard management plans | |
| Specific risk control measures | • Managing Naturally Occurring Radioactive Materials in Mining<br>• Strata Control for Underground Coal Mines<br>• Roads and Other Vehicle Operating Areas<br>• Inundation and Inrush Hazard Management<br>• Mine Closure<br>• Ground Control in Underground Mines<br>• Ventilation of Underground Mines<br>• Ground Control for Open Pits<br>• Underground Winding Systems |
| Emergency planning | • Emergency Response for Australian Mines |
| Information, instruction and training | |
| Fitness for work and health monitoring | • Health Monitoring in Mining |
| Consultation and workers' safety role | |
| Mine survey plans | • Survey and Drafting Directions for Mine Surveyors |
| Notification of high potential incidents | |
| Mine records | • The Mine Record |

## 5.1 Assessment of expected impacts

A summary of the expected change to existing arrangements for each jurisdiction as a direct result of implementing the proposed model work health and safety regulations and Codes of Practice for mines is provided in Table 5.2. This is based on information provided in benchmarking and policy analysis by Safe Work Australia and discussions with key stakeholders.

The rationale for this Table is based on the following:

- Minimal or no change to current practice
    - "-" - indicates there is minimal or no change for duty holders in complying with the proposed model work health and safety regulations for mines. Currently compliant duty holders would need to make either no or minimal change to their current work health and safety practices and procedures to comply with the new requirements. This will generally occur where the model work health and safety regulations for mines will align closely with current regulations applicable to the jurisdiction.
- Some change to current practice
    - "1" - indicates some change for duty holders in complying with the proposed model work health and safety regulations for mines. Currently compliant duty holders will need to modify or adapt their current work health and safety practices and procedures to comply with the new requirements. If extensive modifications to existing arrangements are required these are recorded as a considerable change.
- Considerable change to current practice
    - "2" - indicates considerable change for duty holders in complying with the proposed model work health and safety regulations for mines. Currently compliant duty holders will need to introduce new, or extensively modify existing practices or procedures in order to comply with the new requirements. This could include no longer needing to carry out compliance activities relevant to a particular subject area.

Other factors that have been taken into consideration in the development of this table are that in some cases there may be existing regulations under other mining legislative frameworks that have similar regulatory requirements and therefore represent no additional regulatory change.

Table 5.2 has been developed for the public comment process as a summary of the expected changes.

It should be noted that the expected changes identified in Table 5.2 may reflect either an increase or decrease in the regulatory burden. The changes identified are also not weighted to account for differences in the size of each jurisdiction or the degree of regulatory burden imposed by each subject area.

It is not possible to identify the degree to which the provisions are not currently being met in each jurisdiction as a result of current good practice distinct from current regulatory requirements. This information is being sought as part of the public consultation process and it is anticipated that further detail will be included in the Decision RIS.

Information gathered during the public comment period may result in further changes to this table. This will be reflected in the final Decision RIS.

**Table 5.2: Summary of expected changes to current jurisdictional regulations**

| Subject area | SA | NT | Tas | Vic | ACT | CTH | NSW | Qld | WA |
|---|---|---|---|---|---|---|---|---|---|
| Definitions | - | - | - | 1 | 1 | 1 | - | - | - |
| Appointment and notification of a mine operator | - | - | - | - | 1 | 1 | - | - | - |
| Managing risks | - | - | - | - | - | - | - | - | - |
| Work health and safety management system | 2 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 |
| Principal mining hazard management plan | 2 | 2 | 1 | 2 | 2 | 2 | 1 | 1 | 1 |
| Specific risk control measures | 1 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 |
| Emergency planning | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Information, instruction and training | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Fitness for work and health monitoring | 1 | - | - | 2 | 2 | 1 | 1 | - | 1 |
| Consultation and workers' safety role | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Mine survey plan | 2 | 2 | 1 | 1 | 2 | 2 | 1 | 1 | 1 |
| Notification of high potential incidents | 1 | - | 1 | 1 | 1 | 1 | - | - | - |
| Mine records | 2 | 2 | 1 | 2 | 2 | 2 | 1 | - | - |

## 5.2 Preliminary

### 5.2.1 Definitions

**What is it?**

Defining what is a mine and what are mining operations sets up the scope and application of the subsequent regulations specific for mining health and safety.

**What is the problem?**

To ensure consistency across all jurisdictions there is a need for an agreed set of definitions to define the scope of coverage of the proposed mining safety legislation. This matter is predominantly about harmonising existing terminology. Currently most jurisdictions use one or more terms including mine, mineral and mining operations to set the coverage of their mine safety legislation. The Victorian regulations make reference to mining licensing legislation to define what is covered for the purpose of their regulations. The Commonwealth and the ACT do not have definitions for these activities. This lack of consistency could lead to inconsistent application of unified regulation.

**What is proposed?**

The proposed regulations set out a definition for a mine that relies on the definition of mining operations and mineral. The definitions are based on the common elements of definitions from NSW, Queensland, SA, NT, WA and Tasmania. Coverage of mining operations extends to mining exploration that involves disturbing the ground with mechanical means, extractive operations (e.g. quarries, sand and gravel extraction) and mines that are used for tourist purposes where a principal mining hazard is

present. A principal mining hazard is defined and relates to circumstances being present at the site that could create a risk of multiple fatalities, either in a single incident or resulting from a series of recurring incidents.

### Overview of impacts from the proposed regulations

The proposed definition of what is a mine has a similar coverage to definitions in NSW, NT, Queensland, SA, Tasmania and WA and therefore the application of the regulations to these activities will be similar to the application in those jurisdictions.

Only NSW specifically identifies tourist mines as a type of mine within their definition, while the other jurisdictions' definitions are silent on this activity. As the definition only relates to tourist mines where a principle mining hazard is present, it is likely that their current definitions of what a mine or a mining operation is would extend to cover these activities. Information on this issue will be sought during the public consultation process.

The ACT currently has one quarry operation that is regulated under general work health and safety legislation that will be covered by the proposed regulations. The mining regulations will impact on this operation to the extent that the provisions of the regulations are not covered under the broader general work health and safety framework currently in place. Many of these impacts are likely to be administrative in nature, for example the development of specific plans and systems and keeping and maintaining records.

The Commonwealth do not currently have mining operations under their jurisdiction, therefore there will be no impact for the Commonwealth.

The scope of coverage of the mining-specific regulations in Victoria currently only extends to those workplaces where work is being done under a mining licence issued under the *Mineral Resources (Sustainable Development) Act 1990.* This coverage does not extend to mining exploration activities, to extractive industries and possibly not tourist mines. These activities are currently regulated under the general work health and safety legislation. The mining regulations will impact on these operations to the extent that the provisions of the regulations are not covered under the broader general work health and safety framework currently in place in Victoria. Many of these impacts are likely to be administrative in nature, for example the development of specific plans and systems and keeping and maintaining records.

Victoria also limits the application of some of their mining-specific regulations to prescribed mines, which cover underground mines and any other mine prescribed by the Minister. The impact on mines in Victoria that have not been prescribed will need to be considered under the specific matters in the regulations that it is proposed would now apply. In 2007, Victoria had 81 prescribed mines out of 315 identified mines, being approximately 25% of mines.

Information is sought through the public comment process on the extent of the impact of the proposed extension of mining-specific regulations on the extractive industry and exploration operations in Victoria and the ACT.

Comment is also being sought on the kind of exploration activities that should be captured by the regulations, having regard to the nature and scope of duties to manage risks to health and safety under the regulations and also other legislative arrangements in relation to 'low-impact' exploration activities.

### 5.2.2 Appointment and notification of mine operator

#### What is it?

Mining operations are often carried out through a range of contract and sub-contract arrangements, potentially making it difficult to identify who has overall responsibility for particular activities at a mine. The mine operator is the entity that has responsibility for the coordination and overall management of the operations carried out at the mine to ensure all parties working at the mine are aware of their responsibilities and coordinate their activities.

#### What is the problem?

The appointment of a mine operator ensures a consistent and coordinated approach is taken to work health and safety across a mining operation. It also provides clarity to the regulator as to the entity that has overall management and control of the mine. Currently, there are inconsistent approaches across jurisdictions to nominating the entity that is to be the mine operator. This lack of consistency results in unnecessary administrative complexity for multi-state businesses.

#### What is proposed?

It is proposed that a mining operator be the mine holder (lease holder) for the mine unless the mine holder appoints another person to be the mine operator. The regulator is required to be notified as to who the mine operator is, including if it remains the mine holder.

#### Overview of impacts from the proposed regulations

There are currently requirements in NSW, NT, Queensland, SA and Tasmania to appoint a mine operator and to notify the regulator of who the mine operator is.

In WA the requirement is to notify the principal employer, which would be equivalent to the proposed regulation.

In NT the requirement is set out under the *Mine Management Act 2001.* It would be anticipated that the requirement would not be duplicated under their work health and safety legislation if this proposal is adopted.

Victoria requires under the Mineral Resources (Sustainable Development) legislation that all mining, extractive and exploration operations are carried out under a licence. The licensee takes on the responsibilities under that legislation, including some health and safety requirements. This could be viewed as equivalent to the nominated mining operator envisaged under the proposed regulations. Victoria also use this licensing provision to identify mines for the purposes of their mining-specific regulations under their Occupational Health and Safety Regulations.

The ACT does not currently have a requirement to appoint an operator of a mine or to notify the regulator. This would impact on one quarry in the ACT.

There will be no impact for the Commonwealth as they do not currently have mining operations under their jurisdiction.

## 5.3 Managing risks

### What is it?

The process for identifying hazards, assessing the risks from those hazards, selecting controls to minimise the risk and then reviewing control measures to ensure they are operating as intended is the widely accepted approach to proactively managing risks in the work health and safety environment. It is also a standard approach used in the wider risk management environment.

### What is the problem?

There is a need to ensure a consistent approach to managing risks in the workplace as this forms the basis for the safety management system, managing principal mining hazards and managing other hazards and risks specified in the regulations. This will also ensure consistency with the approach taken for hazards generally as set out under the model WHS Regulations. An inconsistent approach creates administrative complexity for multi-state businesses and may result in different safety standards and different levels of protection for workers.

### What is proposed?

The proposed regulations 9.2.1 – 9.2.4 deal with general risk management principles. These principles have been drafted consistently with the general approach taken under the model WHS Regulations.

In response to public comment on the model WHS Regulations of this approach, the general risk management provisions will be co-located and included up-front in the model WHS Regulations rather than distributed throughout the regulations for clarity, consistency and to avoid unnecessary duplication. Any changes to the general approach taken under the model WHS Regulations in this respect would be expected to flow through to the mining regulations.

### Overview of impacts from the proposed regulations

Currently all jurisdictions except WA have broad equivalent provisions requiring the identification of hazards, assessment of risks, control of risks and review of risk control measures for all hazards. The WA mining regulations have these requirements for specific hazards only. To appropriately manage any risk there has to be some element of these activities to ensure appropriate controls are selected and work as intended to minimise the risk.

There is expected to be no impact from these general requirements.

### 5.3.1 Work health and safety management system

### What is it?

A work health and safety management system is a formalised approach to developing and documenting the policies, processes and practices that ensure that health and safety at a workplace is managed proactively and in a systematic way. It is also a useful way of conveying safety requirements to all those at a workplace, including management, workers and contractors. It is particularly important where either the type of work is complex or the arrangement of work is complex, for example where there are multiple PCBUs at a workplace.

A number of jurisdictions have adopted requirements for work health and safety managements systems on the basis that it has been recognised that a systematic approach to managing risks leads to improved health and safety. For example in 2010 Queensland introduced safety management systems for small mines based on the evidence that the introduction of such systems in large mines in 2001 had led to a significant reduction in fatalities in those mines, while over the corresponding period fatalities in small mines had increased[4].

## What is the problem?

There are currently different requirements across jurisdictions as to whether a safety management system must be put in place, under what circumstances they are required and what information is mandated for inclusion in a system. Lack of consistency can potentially lead to inequitable safety standards for workers between jurisdictions.

Differing requirements for what is to be included in a safety management systems could result in compliance and regulatory burdens for multi-state businesses due to unnecessary administrative complexity.

## What is proposed?

Proposed regulations 9.2.5 – 9.2.8 require a work health and safety management system be prepared for a mine.

Regulation 9.2.5(3)(a) provides that a work health and safety management system must provide a comprehensive and integrated system for the management of 'all aspects of risk control in relation to the operation of the mine'. Regulation 9.2.6(1)(b) provides that the work health and safety management system must also 'describe the systems and procedures and other risk control measures that will be used to control risks to health and safety associated with mining operations at the mine'. Regulation 9.2.6(1) lists the kinds of things that are captured as part of the work health and safety management system, for example principal mining hazard management plans and emergency plans.

Read together these provisions place a general requirement on mine operators to implement and document measures to control risks associated with mining operations in a comprehensive and integrated way.

It is proposed that:

- requirements for work health and safety management systems would cover all mines including small opal mines and quarries, and
- exemptions be provided for under Part 10.3 of the draft model work health and safety regulations.

[4] From the Explanatory Notes to the Queensland, Mines and Energy Legislation Amendment Bill 2010. The requirements were introduced following a review of fatalities in Queensland mines undertaken in 2006-07 by the Queensland Mines' Inspectorate. The Explanatory Note can be found at:

http://www.austlii.edu.au/cgi-bin/sinodisp/au/legis/qld/bill_en/maelab2010362/maelab2010362.html?stem=0&synonyms=0&query=coal%20and%202007%20and%20queensland%20and%20majority%20and%20support%20and%20mine

Regulation 9.2.6(2) provides that in deciding the level of detail to be provided in the work health and safety management system, the mine operator must have regard to all relevant matters including the nature and complexity of the mining operations and risks associated with those operations. This adopts a risk-based approach to regulation which focuses on the nature of the risks at a mine rather than the size of mining operations.

The draft model Code of Practice *Work Health and Safety Management System in Mining* provides guidance for a mine operator on how to meet the requirements of the model work health and safety regulations to establish and implement a work health and safety management system for a mine. This Code of Practice applies to all types of mines including quarries, sand dredging and other extractive operations and tourist mines.

No new obligations are being introduced in this model Code of Practice that are not already provided for in the model WHS Regulations. It may be that additional obligations are included in the proposed model work health and safety regulations for mines, which would then be reflected in the model Code of Practice. It is expected that these issues will emerge during the public consultation process.

A Code of Practice is a guide to duty holders on how to meet their obligations under the Act or its Regulations. As Codes of Practice represent evidence of knowledge of risk and risk control they are evidence of what would be reasonably practicable in the circumstances, they are not required to be complied with. Compliance with the model WHS Act and model WHS Regulations may be achieved by following another method, such as a technical or an industry standard, only if it provides an equivalent or higher standard of work health and safety than the Code of Practice.

There is an argument that further guidance on work health and safety management systems can and should be provided in regulation 9.2.6. Comment is sought on the proposed content of work health and safety management systems and whether further details should be provided in regulation 9.2.6.

Comment is sought on whether the draft model Code of Practice:

- is helpful and easy to understand, and
- reflects current state of knowledge and technological developments in relation to managing risks.

## Overview of impacts from the proposed regulations

Currently NSW, NT, Queensland and Tasmania require a mine operator to put in place a safety management system. WA requires a project management plan to be put in place on notification of the commencement of mining operations. Victoria only requires this for prescribed mines, which includes all underground mines and any other mines prescribed by the Minister. The contents of a safety management system that are specified in regulation also vary between jurisdictions.

SA does not regulate for the development of a safety management plan but does require that a system of work be established. As the Commonwealth and the ACT do not specifically regulate mines they do not have provisions for a mine safety management system.

Most of the matters identified for inclusion in the proposed work health and safety management system under the proposed model work health and safety regulations for mines are regulated to some extent, either generally or specifically for mines, in most jurisdictions. Table 5.3 sets out the proposed content of the work health and safety management system and identifies whether the matters are currently covered in the jurisdictions' current mine safety management system requirements or whether they are covered more generally in regulations.

**Table 5.3 : Current jurisdictional requirements for a safety management plan**

| **Mine safety management system** | NSW | NT | Qld | SA | Tas | WA[1] | Vic[2] |
|---|---|---|---|---|---|---|---|
| **Safety management system required** | YES | YES | YES | NO | YES | YES | YES |
| **Contents (as in proposed regulations)** | | | | | | | |
| policy | YES | | YES | | | | YES |
| systems and procedures | YES | YES | YES | r | YES | YES | YES |
| management structure | YES | YES | YES | | YES | | |
| health monitoring arrangements | YES | YES | r | r | YES | r | r |
| safety role for workers | r | r | r | r | r | r | r |
| ventilation control plan | r | | YES[3] | r | r | YES | r |
| monitoring and assessment processes | r | YES | YES | r | r | r | YES |
| performance standards | | | YES | | | | YES |
| principal mining hazard management plans | | | YES[3] | | YES | | YES |
| | | | | | | | |
| **Requirement to review plan** | | | YES | | YES | | YES |

[1] for mining operations
[2] for prescribed mines only
[3] coal mines only
r – matter that is currently regulated but not specifically required by the regulations to be included in the relevant mine safety management system

NT also requires the inclusion of an emergency plan, record keeping requirements and training requirements in their system. Tasmania, NSW and Queensland also require an emergency plan in their safety management plans. WA also requires a summary of the proposed mining operation and treatment process, the number of people to be employed at the mine, a general plan of the mine and plans of open cut and underground workings and emergency preparation plans for the mine.

The formal documentation of additional elements of the proposed work health and safety management system will impact on all jurisdictions, with particular impacts in SA, where these plans are currently not required, and in Victoria, where the requirements for plans are currently limited to prescribed mines. This impact will be lessened as most of the matters are currently regulated and therefore it would be expected that a compliant mine would already be undertaking the necessary work practices to safely manage the risk.

What is unknown is the extent to which current mining operations, particularly in SA and Victoria, have structured and documented safety management systems in place as good operating practice. It would be anticipated that larger operations and those operations owned by major mining companies would already be operating under documented safety management systems and therefore the impact for these operations may be small. The smaller mining, exploration and quarry operations are the areas where the impact is likely to be the greatest.

There is an argument that further provisions could be made to accommodate less complex mining operations. See for example regulation 5.3.3 of the Victorian Occupational Health and Safety Regulations 2007, which establishes a separate regulatory regime for 'prescribed', higher-risk mines including underground mines.

Another option, as outlined in the NMSF Legislative Framework, would be to provide that the detail provided in a mine's work health and safety management system must be commensurate with the size, nature and complexity of the mining operations.

Further consideration could be given to how to best maximise work health and safety outcomes (including workability of the proposed model mines regulations) in relation to all kinds of mining operations, including smaller mining operations.

WorkSafe Victoria (2001) estimated that the cost of developing safety management systems would range from $5000 for a small mine up to $50 000 for a large mine.

Comment is sought on these considerations as well as the likely impact of the requirements for a work health and safety management system.

## 5.4 Principal mining hazard management plans

### What is it?

A principal mining hazard is a hazard that has the potential to create risks that could lead to multiple fatalities, either through a single incident or collectively over the longer term from repeated exposures to the risk through a number of incidents.

The matters identified can present significant risks in a mine, depending on the type of mining, the geological environment in which the mine is located, whether there were previous mining activities in the vicinity of the mine that may impact if the old workings are intersected in developing the mine and the design of the mine.

Examples of a principal mining hazard include collapse of a geological structure in a mine, inrush of water into underground works, fire or explosion.

A principal mining hazard management plan (PMHMP) is a specific plan that sets out how the risks associated with the hazard will be controlled and monitored.

### What is the problem?

There is not a consistent approach across jurisdictions to the concept of managing these types of hazards as a principal mining hazard or for the regulation of these significant hazards. This means that these key hazards are being regulated to different standards, which may have implications for worker health and safety.

### What is proposed?

The proposed regulations identify eight hazards that have the potential to be principal mining hazards in mines and also provide a broader definition to allow for a mine operator to identify other hazards that may be regarded as a principal mining hazard for their mine. The eight hazards identified in the proposed regulations are:

- ground or strata instability
- inundation and inrush
- mine shafts and winding systems
- roads and other vehicle operating areas
- air quality, dust and other airborne contaminants
- fire or explosion
- gas outbursts, and
- ionising radiation.

The proposed regulations require that where those hazards are present at a mine and they present such a risk that they meet the definition of a principal mining hazard, then a PMHMP must be prepared that provides 'for the management of all aspects of risk control in relation to the relevant principal mining hazard'. The mine operator would be required to assess the level of hazard for the identified matters for their mine to determine if they are a principal mining hazard for that mine.

In preparing a PMHMP it would be necessary for mine operators to:

- address and comply with any applicable specific risk control measure set out in Division 3 of Part 9.2 of the proposed regulations or elsewhere under the model WHS Regulations, and
- consider the matters that are set out in Schedule 9.2 that apply to the plan.

A number of these hazards are more relevant to underground mining operations.

Comment is sought as to whether:

- the treatment of eight principal mining hazards at regulation 9.1.4(a) under Division 2 of Part 9.2 with additional detail at Schedule 9.2 and supporting guidance in relevant Codes of Practice is appropriate
- detailed content requirements for PMHMPs should be prescribed in the mining regulation to provide further clarity about what the provisions in Division 2 of Part 9.2 require in practice, for example requirements for standard operating procedures or work instructions in certain circumstances, and
- additional specific control measures should be prescribed—based on the principle that where there is only one generally accepted method for controlling a hazard should be required in regulation otherwise multiple alternate control methods are covered in Codes of Practice.

A range of draft model Codes of Practice have also been developed for these hazards. The codes provide guidance on the matters to be considered in Schedule 9.2 of the proposed regulations and on options for controls relevant to the particular risks. A summary of each of these codes is provided below:

Managing Naturally Occurring Radioactive Materials (NORMs) in Mining

This Code of Practice will assist the PCBU to ensure that workplaces where NORMs associated with mining occur (whether in situ or when persons are exploring for minerals that contain NORMs, or handling, processing, storing or transporting minerals that contain NORMs) are without risks to health and safety and that facilities provided for the welfare of workers and health surveillance are adequate.

This aligns with the requirements governing mining with the system of radiation protection as recommended by the International Commission on Radiological Protection, the International Atomic Energy Agency and the Australian Radiation Protection and Nuclear Safety Agency.

Strata Control for Underground Coal Mines

This Code of Practice will assist the mine operator to develop and implement a principal hazard management plan for strata instability as required under the proposed model work health and safety regulations for mines. This applies to the underground workings of a coal mine but does not apply to the surface effects of underground mining.

Roads and Other Vehicle Operating Areas

This Code of Practice provides practical guidance on how to manage roads and other vehicle operating areas to reduce the risk of the hazards associated with vehicle and pedestrian movement and interaction around mines. It also provides information on preparing a principal mining hazard management plan that identifies the hazards, assesses the risks and outlines risk control measures associated with roads and other vehicle operating areas in operating metalliferous and coal mines, quarries and exploration sites. It includes both underground and surface operations.

Inundation and Inrush Hazard Management

This Code of Practice will assist the mine operator to develop and implement a PMHMP for inundation and inrush including those related to undersea workings. Outburst hazards are not included in the definition of inrush hazards and are the subject of a separate PMHMP.

Mine Closure

This Code of Practice provides practical guidance on how to meet the requirements under the proposed model work health and safety regulations for mines to ensure a mine is safe and secure from unauthorised access before it is closed or suspended. A mine operator must not abandon the mine.

It provides practical guidance to those persons involved in the closure of a mine site and covers the control methods that should be used to eliminate or minimise health and safety risks to the public and other persons who may access a mine site following closure.

This Code of Practice does not cover those duties required under Environmental Law.

Ground Control in Underground Mines

This Code of Practice has been developed to ensure that the mine operator at an underground mine has given adequate consideration to all geotechnical/ground control aspects relevant to the safe design, operation and abandonment of the mine they are responsible for.

It provides practical guidance to a mine operator on how to meet the requirement, under the model work health and safety regulations to develop, implement and maintain a documented principal hazard management plan for ground stability.

This Code of Practice seeks to encourage the application of current geotechnical knowledge to the practical solution of ground control issues in underground mining. When situations arise with geotechnical issues that are intractable with the current level of knowledge and/or technology, it may be necessary to undertake research and development work.

Due to the widespread and varying nature of potential geotechnical hazards and control measures in underground mines, this Code of Practice has been prepared as what could be considered to be a performance based standard that states the result to be achieved rather than a detailed prescriptive methodology for achieving the result.

Ventilation of Underground Mines

This Code of Practice provides practical guidance for persons who have duties under the proposed model work health and safety regulations for mines to provide adequate ventilation for the health, safety and welfare of workers while they are at work.

Given that the nature of work and the mines in which that work is carried out vary significantly, this Code of Practice provides advice on determining what is reasonably practicable in relation to providing adequate ventilation in particular circumstances.

Ground Control for Open Pits

This Code of Practice has been developed to ensure that the mine operator at an open pit mine has undertaken adequate consideration of all ground control aspects relevant to the design, construction, operation and abandonment of the mine they are responsible for. It also provides guidance to develop, implement and maintain a documented principal hazard management plan for ground stability.

Due to the widespread and varying nature of potential ground control hazards and varying control measures that could be used in different open pit mines, this Code of Practice has been prepared as what could be considered to be a performance based standard that states the result to be achieved rather than a detailed prescriptive methodology for achieving the result.

Underground Winding Systems

This Code of Practice has been developed to provide designers and operators of underground winding systems with information which details the critical elements that should be addressed in the design, commissioning tests and inspections, maintenance tests and inspections, and operation.

Design procedures for headframes, sheave wheels, sheave shafts, ropes, conveyances, attachments and foundations have been included, which provide reference to the relevant standards.

No new obligations are being introduced in these model Codes of Practice that are not already provided for in the proposed model work health and safety regulations for mines or are set out under the model WHS Act and Regulations.

Comment is sought on whether these draft model Codes of Practice:

- are helpful and easy to understand, and
- reflect current state of knowledge and technological developments in relation to managing risks.

## Overview of impacts from the proposed regulations

The general concept of a principal mining hazard is currently only included in the NSW and Queensland coal mining regulations and the Victorian regulations, although other jurisdictions do require specific plans to be developed for particular hazards. There is also recognition in a number of jurisdictions of the significance of these matters in that they are specifically regulated.

The Victorian regulations identify the principal mining hazards in the proposed regulations (and others) as mining hazards and require that for each mine they are identified and the risks assessed, controlled and reviewed. For prescribed mines in Victoria, the systems, procedures and other risk control measures by means of which risks to health or safety associated with mining hazards are to be controlled must be set out in their safety management system. The mine operator must determine if the mining hazards at the mine meet the criteria for a major mining hazard and undertake additional assessment and document all aspects of the safety assessment for those that do. This is similar to the requirements proposed for principal mining hazards in the model regulations. Victoria also has specific regulations for mineshafts and winding systems. Under their Minerals Resources (Sustainable Development) legislation, licensees are required to develop a mine stability plan that covers how the geotechnical and hydrogeological risks to the mining operations will be managed.

Tasmania currently requires a specific plan to be developed to manage risks associated with inundation and inrush in a mine and the air quality in a mine and specifically regulates ground or strata instability and mineshafts and winding systems.

SA has specific regulations for ground or strata instability, mineshafts and winding systems and air quality. NT only has general regulations covering air quality, with no specific regulations on the other identified matters.

The Commonwealth and the ACT do not have the concept in their regulations. Like the NT, they currently have general regulations that deal with air quality in a workplace.

NSW has the most specific requirements in their coal mining regulations, with plans required for ground or strata instability, inundation and inrush, roads and vehicle operating areas, air quality and fire and explosion. They also have specific regulations for mineshafts and winding systems. Queensland and WA have specific regulations for each of the specific matters identified in the proposed regulation, with WA requiring a plan to be developed to manage ionising radiation.

Radiation is currently regulated under different legislation, often under public health legislation, than work health and safety legislation in most jurisdictions. Jurisdictions will have within their body of legislation requirements to manage the risks of ionising radiation, predominantly based on standards and guidelines developed by the Australian Radiation Protection and Nuclear Safety Agency.

Under the proposed regulations it would be expected that most mining operations will require a PMHMP for 'roads and other vehicle operating areas' as there is likely to be interaction of mining plant with other plant and smaller road vehicles in most operations. For excavations, including larger quarry operations that are extracting rock from depth, there is likely to be a plan required for 'ground and strata instability'. It is anticipated that the greatest impact will be in relation to these two areas.

The majority of mines that will require the plans for the other identified principal mining hazards will be underground mines or open cut mines with specific attributes such as proximity to water courses or underground workers or working with radioactive ores. For these operations, the regulations under which they work will already require these plans, or the nature of the hazard will require that they are already managed to the extent prescribed under the proposed regulations.

Where the matters identified present significant risk in a mine, it would be expected that the mine operator would already have in place controls to minimise the risk of those hazards, whether required under a principal mining hazard plan, specific regulations or in complying with the general duty of care. For these operations, the development of a principal mining hazard plan would require the detailed documentation of the hazard, the assessed risks, the control measures used to control those risks and the process for reviewing the adequacy of the controls. Particularly for smaller mines with these hazard and risks present, there may be significant work involved to generate this as a working operations document to guide the management of the hazard.

The impact should be one predominantly of documenting the above processes for current operating mines. The largest impact will likely be in small mines where these hazards are present and where the current level of assessment or control may not meet the requirements of the proposed regulations. Mining operations in jurisdictions that currently have little or no specific provisions for principal mining hazards will be impacted to a greater extent than those in jurisdictions that currently require such plans.

Comment is sought from the mining industry as to the extent of this impact, particularly for smaller operations with principal mining hazard present.

## 5.5 Specific risk control measures

### What is it?

There are a number of hazards that pose particular risks in mines and these are identified and specific requirements put in place to manage those risks. A number of the identified hazards are also potential principal mining hazards.

The regulation of specific matters is influenced by the predominance of different types of mines in some jurisdictions. For example Queensland and NSW have extensive regulations relating to safety in underground coal mines as the majority of underground coal mining takes place in those jurisdictions, whereas this is not an issue for jurisdictions that do not currently mine coal in underground mines.

### What is the problem?

There is an inconsistent approach as to which mining-specific hazards and risks are regulated in jurisdictions and the extent of specification of those regulations where the matter is regulated. In part this is due to the different factors that have influenced the evolution of mining regulations in each jurisdiction. This has the potential for the identified matters to be regulated to different standards of safety in different jurisdictions, which may have implications for worker health and safety.

### What is proposed?

It is proposed to provide regulations for a number of specific hazards and risks that would be expected to be relevant to a range of jurisdictions, noting that NSW, Queensland and WA will likely further develop their mining-specific regulations beyond those currently proposed. The proposed regulations cover the following matters:

- communications between supervisors of shifts at shift changes to ensure that safety information is conveyed from one shift to the next
- monitoring the progress of underground workings that may be near an area that contains an inrush hazard
- shafts and winding
- movement of mobile plant
- air quality and ventilation
- prohibited uses, and
- closure, suspension or abandonment of a mine.

### Overview of impacts from the proposed regulations

*Communications between shifts*

Currently only Victoria and NSW have specific regulations related to ensuring safety information is conveyed between shifts. All other jurisdictions have general requirements about communicating safety information to workers.

Requirements for communication between shifts at shift change-over time is common practice in mines that are operating 24 hours a day, particularly underground mines, to ensure any information relevant to safety is conveyed. Because mining is a dynamic operation, there will be changes to workings and the conditions of plant and equipment as shifts progress. New shifts entering these areas need to be made aware of any changes and potential safety issues that may result as a consequence.

While it is not anticipated that the requirement to communicate will create an impact on the sector, the requirement to document the communication may impact on smaller and less complex mining operations.

*Progress of workings*

NSW, Queensland, Tasmania, WA and Victoria currently have specific regulations requiring the ongoing management of the risk of inrush into mine workings. The risk of intercepting a watercourse or old workings that have been flooded can be catastrophic, particularly in underground workings. The risk of inundation and inrush is also recognised as a potential principal mining hazard.

Monitoring the progress of workings in a mine is standard mining practice and it is not anticipated that the proposed requirements will lead to any additional impact on mining operations.

*Shafts and windings*

The proposed regulations set out the basic requirements for ensuring that winding equipment used at a mine is safe. NSW, Queensland, SA, Tasmania, WA and Victoria currently have specific regulations relating to the safety of mine winders for accessing a mine. The NT has general regulations relating to the safety of plant at workplaces. Risks associated with mine winders are such that this issue is also recognised as a potential principal mining hazard.

Maintaining the safety of winding equipment at mines where winders are used is standard mining practice and it is not anticipated that the proposed requirements will lead to any additional impact on mining operations.

*Movement of mobile plant*

The potential for interaction of mobile plant with other plant and with people and the safe movement of the plant around a mine site are safety risks that must be managed. NSW, Queensland, Tasmania and WA currently have specific mining regulations relating to this risk. Other jurisdictions have general requirements relating to the safety of mobile plant. Risks associated with mobile plant are also recognised as a potential principal mining hazard.

Managing the risks of mobile plant at a mine is standard mining practice and it is not anticipated that the proposed requirements will lead to any additional impact on mining operations.

*Air quality and ventilation*

All jurisdictions have either specific or general regulations relating to ventilation and air quality. In underground mining particularly, ventilation systems are a primary means of managing air temperature and humidity, the levels of gas and dust that may be generated from the mine workings. This also includes managing risks from gas or dust explosions and the levels of airborne contaminants in working areas and the levels of oxygen in the air. Risks associated with poor air quality are also recognised as a potential principal mining hazard.

For underground workings, the proposed regulations also set out requirements for ventilation plans and a ventilation control plan. The plans are required as part of the proposed mine work health and safety management system. NSW, Queensland, SA, Tasmania, WA and Victoria currently have specific regulations relating to ventilation and ventilation plans

The proposed regulations for managing the risks of air quality and the use of ventilation at a mine reflect standard mining practice and it is not anticipated that the proposed requirements will lead to any additional impact on mining operations.

Comment is sought as to whether any other further specific controls around air quality and air safety are required. See regulations 9.2.20(1) and 9.2.22(2) and for example the approach taken under the relevant Queensland laws.

*Prohibited uses*

The proposed regulations establish a schedule to allow for activities or materials to be prohibited under prescribed circumstances. A schedule is included in the issues paper for consideration and is provided at Appendix F.

In current jurisdictional regulations, these prohibitions generally relate to underground mines including prohibitions on ignition sources in coal mines. NSW, Queensland, SA, Tasmania, WA and Victoria currently have specific regulations relating to prohibited uses, although the matters prohibited vary.

Comment is invited on the kinds of things and substances that should be prohibited underground, and for what kinds of uses. The issues paper accompanying the draft model regulations for public comment sets out possible matters that could be considered for inclusion in the schedule.

*Closure, suspension or abandonment of a mine*

NSW, Queensland and Tasmania have specific provisions in their mine safety legislation relating to the closure of a mine to ensure it is left in a safe condition. Provisions relating to closure of mines may also be found in mine tenement legislation. The proposed regulations reflect current practice applied across the mining industry by jurisdictional regulators. It is not anticipated that the proposed requirements will lead to any additional impact on mining operations.

## 5.6 Emergency planning

### What is it?

Emergency planning covers the preparation and implementation of measures at the workplace to eliminate or minimise risks to safety or health in the event of an emergency. Emergency situations in mines range from medical and trauma emergencies to roof falls or slope failures with entrapment to mine fires and explosions. Adequate planning and preparation is necessary to ensure an effective response. This allows mine operators to deal with situations, protect both workers and others during response events and return the mine to production as quickly as possible.

### What is the problem?

The current approaches to emergency planning are inconsistent across jurisdictions, creating the potential for placing workers at differing and unnecessary levels of risk in an emergency situation in some jurisdictions compared with others. The different approaches also create unnecessary administrative complexity for multi-state businesses.

## What is proposed?

Part 9.2 of the draft model mining regulations requires the preparation and implementation of an emergency plan, the establishment of emergency exits, adequate means of escape from underground mines, emergency signage and the provision of self-rescuers and personal protective equipment for emergencies.

The draft model Code of Practice *Emergency Response at Australian Mines* has been developed to provide guidance on how to respond to an emergency at a mine as well as meet the requirements under the proposed model work health and safety regulations in relation to developing an emergency plan.

This Code of Practice is not intended to address the rescue or recovery of persons using specialist agencies except to the extent that those services are to be included in the implementation of the emergency response plan as required by Schedule 3 of the proposed model work health and safety regulations.

No new obligations are being introduced in this model Code of Practice that are not already provided for in the proposed model work health and safety regulations.

Comment is sought on whether the draft model Code of Practice:

- is helpful and easy to understand, and
- reflects current state of knowledge and technological developments in relation to managing risks.

*Emergency Plans*

Parts 9.2.32 – 9.2.36 of the proposed regulations require a mine operator to:

- prepare and implement an emergency plan for the mine including appropriate consultation
- provide a copy of the plan to the emergency services who assisted with its preparation
- ensure that all resources including emergency equipment specified in the plan are in good working order
- ensure that testing of the emergency plan is undertaken, and
- review the plan as necessary.

*Emergency exits*

Part 9.2.37 of the proposed regulations requires a mine operator to:

- provide a means of exiting the mine workings in addition to the hoisting shaft and any other normal exit, and
- provide two additional exits if the underground mine is a coal mine or metalliferous mine.

Comment is sought on the scope of the proposed requirements for emergency exits in regulations 9.2.37 – 9.2.41 having regard to these issues and possibly different requirements of mines in the initial stages of development.

*Safe escape from underground mines*

Part 9.2.38 of the proposed regulations requires a mine operator to provide adequate means of escape (including suitable mobile plant and self-rescuers) that enable persons underground to safely reach any exit, including through conditions of reduced visibility or irrespirable or unsafe atmospheres.

*Emergency signage*

Part 9.2.37 of the proposed regulations requires a mine operator to ensure that each additional exit is marked or signposted so that it can be readily located in an emergency and maintained so that it remains effective. Part 9.2.39 requires a mine operator to ensure that signs are prominently displayed at the mine showing emergency exits and refuges (in underground mines).

*Self-rescuers*

Part 9.2.40 of the proposed regulations requires a mine operator (other than an operator of a tourist mine) to ensure that a person who is to go underground is provided with a self-contained self-rescuer. The mine operator must also ensure that the person is trained in the use of, and is able to use, the self-rescuer provided.

Comment is sought on the proposed requirement for the provision of self-contained self rescuers underground, given that it is intended to apply to all underground mines other than 'tourist mines'. This would include for example small opal mines.

*Personal protective equipment in emergencies*

Part 9.2.41 of the proposed regulations provides for personal protective equipment for workers who enter an underground mine to carry out first aid or rescue procedures in an emergency. The mine operator would be required to ensure that air supplied respiratory equipment and suitable personal protective equipment is available for use by, and is provided to, the worker. The mine operator must also ensure that the worker uses the personal protective equipment provided.

## Overview of impacts from the proposed regulations

*Emergency plans*

All jurisdictions have some provisions requiring emergency procedures within specific regulations on high risk activities including mining.

The operator of a mine in Victoria must prepare an emergency plan that addresses all aspects of emergency response including the location of all persons at any time, the provision of adequate rescue equipment and ensures that persons are trained in its use. The emergency plan must be prepared in conjunction with the emergency services that have responsibility for the area where the mine is located and, where appropriate, the municipal council. The plan must be available for inspection on request and be comprehensible to the persons who need to use it. A copy of the plan must be kept at the mine. Emergency services must be informed of its location and sent a copy. The emergency plan must be tested annually and steps taken to include those emergency services consulted in its development in the testing.

The proposed requirements for emergency plans are consistent with Victoria's regulations so it is expected that there would be no impact for mining operations in Victoria.

In NSW the operator of a mine must ensure that an emergency plan is prepared for the mine and work must not be carried out unless there is an emergency plan in place. The emergency plan must contain an up-to-date plan of the mine and any other relevant plans. It must be reviewed and tested as soon as practicable after any emergency has occurred at the mine and whenever the mine safety management plan for the mine is reviewed. The persons who work at the mine must be consulted during the review.

In WA the principal employer (and manager) of a mine must ensure that an emergency plan is prepared before mining operations commence at the mine, or for an existing mine as soon as is practicable after the commencement day. The plan must address the provision of appropriate facilities and equipment, the provision and testing of effective alarm systems, the development of procedures to deal with emergencies, the training of employees in emergency procedures and fire fighting, mine rescue and other relevant emergency response functions and the review of facilities, equipment and procedures. The plan must be updated and revised whenever there is a change in mining operations, equipment, systems or procedures at the mine.

In Tasmania the mine operator must prepare an emergency response plan for the mine. The emergency response plan must be tested, including practice evacuation drills, and reviewed on a regular basis and at least once a year. Where necessary the plan must be amended to ensure that it adequately provides for the response to incidents involving a significant risk of serious injury or death. The mine operator must ensure that all persons at the mine are familiar with the emergency response plan.

NT requires that a risk management plan for a mining operation must include an emergency plan. The emergency plan must identify measures to minimise the risk of an emergency occurring and to respond to an emergency, including by testing alarm systems, developing procedures to deal with emergencies, training employees in emergency procedures and reviewing facilities, equipment and procedures.

The Queensland regulations require that a mine's work safety and health management system include an emergency response plan. The site senior executive for a mine that is not required to have a safety and health management system must ensure the mine has an emergency response plan. The operator of a mine must provide adequate resources at the mine to ensure the effectiveness and implementation of the plan. The emergency response plan must be tested and reviewed at least once a year, having regard to the nature and complexity of the mine's operations and be amended where necessary.

The only change for NSW, WA, Tasmania, NT and Queensland is that the emergency plan must be prepared in consultation with emergency services and a copy of the plan must be provided to the emergency services. This is currently not stipulated in these jurisdictions' regulations.

Mining operations in SA could be expected to have some impacts as there is currently no requirement for a formal plan to be developed to deal with emergencies in mines in SA. Their work health and safety legislation requires adequate emergency procedures, the provision of appropriate emergency facilities and access to rescue equipment and suitably trained personnel in cases where emergency situations are reasonably foreseeable.

The Commonwealth includes requirements for emergency plans within specific regulations for dangerous goods and major hazard facilities. It is not expected that the proposed emergency plan requirements would have an impact on the Commonwealth as they currently do not have any mining operations under their jurisdiction.

The ACT does not include requirements for the preparation of emergency plans. Its work health and safety regulations require appropriate systems be put in place for the safe and rapid evacuation of people from the workplace, emergency communications and the medical treatment of injured people. Arrangements must be made for shutting down and evacuating the workplace in an emergency, including appropriate practice evacuations, details of the arrangements must be displayed in appropriate places at the workplace and an appropriate number of people must be properly trained to oversee any evacuation and use any on-site fire appliances. The proposed requirements however would only apply to the one quarry operation in the ACT.

WorkSafe Victoria (2001) estimated that to develop emergency plans would cost between $1000 for a small mine and up to $5000 for a large mine.

*Emergency exits*

In NSW the operator of an underground mine with the exception of an opal mine must provide, wherever practicable, two exits from every underground mine, each of which is connected to separate means of egress to the surface.

In Victoria the operator of a prescribed mine must, so far as is reasonably practicable provide for a means of exiting the mine workings in addition to the hoisting shaft or the exit normally used and ensure that the additional exit is maintained so that it remains a functional exit.

In each underground mine in WA where a shaft has been sunk or an adit driven, the manager of the mine must ensure that provision is made for a means of escape in addition to the hoisting shaft or the opening normally used as a means of entry or exit to the mine. The manager of an underground mine must ensure that an escape route at the mine is maintained in a safe condition and is adequately marked or signposted having regard to the potential for reduced visibility in an emergency.

Except in relation to initial stope preparation or leading stopes, the manager of an underground mine in WA must ensure that, so far as is practicable, two separate travelling ways are provided into all working stopes underground. If the manager of an underground mine considers that it is not practicable to provide a second exit, the manager must notify the district inspector accordingly.

As NSW, Victoria and WA require mine operators to provide for additional exits for underground mines there is likely to be little impact in those jurisdictions.

Queensland, WA, SA, Tasmania and NT do not provide for additional exits in their work safety legislation. There is therefore likely to be a substantial impact on underground mines in those jurisdictions.

The ACT has one quarry operation which will be covered by the proposed regulations and which is currently regulated under general work health and safety legislation. As it is not an underground mine, there will be no impact in the ACT. The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact for the Commonwealth.

Tasmania has advised that as some of their mines are over a kilometre underground, this would mean installing a second exit which could cost in excess of $10 million per mine.

*Safe escape from underground mines*

In NSW the operator of an underground mine must provide for safe egress of persons from underground parts of the mine through conditions of reduced visibility and unbreathable atmospheres, including escape devices and, where appropriate, adequately maintained self-rescuers. The operator of an underground coal mine must provide sufficient means of escape to allow safe egress of people from underground parts of the mine through conditions of reduced visibility and any irrespirable or irritant atmospheres that are likely to be encountered.

The operator of a coal mine in NSW must ensure that people who work in underground parts of the mine are familiarised with the means of escape from underground parts of the mine that could be used in an emergency.

As the NSW provisions on this issue are substantially similar to the proposed regulation there is likely to be little impact in NSW.

In Victoria the issue of safe escape from underground mines is covered by provisions relating to signage and self-rescuers. In WA there is a general requirement to provide for the safe entry and exit of persons at all working levels in the mine. In SA the issue is covered by provisions relating to self-rescuers. There will therefore be an impact in all of these jurisdictions in bringing their legislation into line with the proposed regulation.

As there are no specific provisions in Tasmania and NT in relation to safe escape from underground mines, there will be a substantial impact in those jurisdictions in bringing their practice into line with the proposed regulations.

The ACT has one quarry operation which will be covered by the proposed regulations and which is currently regulated under general work health and safety legislation. As it is not an underground mine, there will be no impact from the proposed regulation in the ACT. The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact.

*Emergency signage*

In Victoria the operator of a prescribed mine must ensure that the additional exit is marked or signposted so that it can be readily located in the event of an incident.

WA requires that the manager of an underground mine must ensure that an escape route at the mine is maintained in a safe condition and is adequately marked or signposted having regard to the potential for reduced visibility in an emergency. Each responsible person at a mine must ensure that sufficient safety signs are posted in workplaces and travel-ways to provide guidance and instruction in emergency procedures. Such signs must be placed so that they can be readily seen and maintained in a clean and readable condition.

There will be an impact in NSW, Queensland, SA, Tasmania and NT to provide for these new requirements to the extent that this matter is not covered by the broader general work health and safety legislation currently in place and existing practices. The major impact will arise from ensuring that signage meets the proposed regulatory requirements and installing those signs. There may be some impact in the ACT to the extent that this matter is not covered by the broader general work health and safety legislation currently in place.

The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact.

*Self-rescuers*

The operator of an underground mine in NSW must provide for safe egress of persons from underground parts of the mine through conditions of reduced visibility and unbreathable atmospheres (including escape devices and, where appropriate, adequately maintained self-rescuers). A person who is in the underground part of a coal operation must at all times have attached to them a registered type of self-rescuer.

There will be some impact in NSW in relation to the requirement to provide training in the use of self-rescuers to the extent that this is not covered by the broader general work health and safety legislation currently in place.

In Victoria the operator of an underground mine must ensure that every person who goes underground is, so far as is reasonably practicable, provided with a self-contained self-rescuer or, if this is not reasonably practicable, is provided with a filter self-rescuer. The operator must also ensure that the person is trained in the operation and use of the self-rescuer.

For Queensland an underground mine's safety and health management system must provide for:

- self-rescuers and other breathing apparatus
- maintaining and testing self-rescuers and other breathing apparatus
- training persons in donning, changing over and using self-rescuers
- training persons who are required to use the breathing apparatus in using the apparatus
- the use of a self-rescuer at the mine, and
- recording details about each temporary use of a self-rescuer at the mine.

A person must not enter below ground at an underground mine unless the person has been issued with and is carrying a self-rescuer. The person must be trained in donning, changing over and using the self-rescuer and self-rescuers stored in caches in the mine, examine the self-rescuer and be satisfied it has not been damaged, carry out any checks required by the manufacturer and be physically capable of using the self-rescuer. While a self-rescuer is in the possession or control of the person to whom it has been issued, the person must ensure its safe keeping and, as far as practicable, that it is not damaged.

In WA the manager of an underground mine must ensure that any person who goes underground in the mine is provided with (at least) a filter self-rescuer or (preferably) a self-contained self-rescuer and is fully trained in the use and limitations of the self-rescuer provided. If there is a risk of a dust explosion or an identified risk from naturally occurring noxious or asphyxiant gases in an underground mine, the manager of the mine must ensure that all persons who go underground in the mine are provided with self-contained self-rescuers.

In SA if an underground mine has more than one diesel engine underground, any person working in the mine must be supplied with a suitable self-rescuer and be fully trained in the operation and use of the self-rescuer. If an underground mine is susceptible to fire or gas outbursts, any person working in the mine must be supplied with a suitable self-contained self-rescuer and be fully trained in the operation and use of the self-rescuer.

As the current provisions in Victoria, Queensland, WA and SA are substantially similar to the proposed legislation, there is likely to be little impact in those jurisdictions.

There is likely to be a significant impact in Tasmania and NT as there are currently no provisions for self-rescuers in those jurisdictions, although the extent to which self-rescuers are provided in existing underground mines in these jurisdictions as a matter of good practice is unknown.

The ACT has one quarry operation which will be covered by the proposed regulations and which is currently regulated under general work health and safety legislation. As it is not an underground mine, it is not expected that there will be any impact in the ACT. The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact.

WorkSafe Victoria (2001) estimated that self-rescue equipment would cost around $5000 per worker. The incremental cost was considered to be zero for all but small and/or tourist mines, as provision of self-rescuers was already standard industry practice.

*PPE in emergencies*

In Victoria and WA there are provisions relating to rescue equipment but there will be some impact in bringing the legislation in those jurisdictions into line with the proposed regulation to the extent that the issue is not covered by broader legislative requirements relating to the provision and use of PPE.

There will be an impact in NSW, Queensland, SA, Tasmania and NT to the extent that this matter is not covered by broader legislative requirements relating to the provision and use of PPE.

There will be some impact in the ACT to the extent that this matter is not covered by the broader general work health and safety legislation currently in place. The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact.

## 5.7 Information, training and instruction

### What is it?

In the context of work health and safety, information is factual material which tells people about risks to health and safety at a workplace and measures which have been, or should be, taken to eliminate or control such risks. Instruction means telling people what they should do and how they should do it. Training means helping them learn how to do it and can include giving information and instruction.

### What is the problem?

All jurisdictions require information, training and instruction to be provided to workers. Some jurisdictions include these provisions in mining-specific legislation and in others this issue is covered under the broader general work health and safety framework. Only some jurisdictions require the keeping of training records or for information to be provided to visitors. To ensure equitable treatment of workers across Australia, there is a need for a consistent approach to ensure that workers at all mines are given all relevant information about risks to work health and safety at a mine and the measures that have been put in place to eliminate or control them. Similarly a consistent approach to the information

must be given to visitors at mines. The requirement to keep records of training is needed to ensure that the training needs of workers at mines are met and kept up-to-date.

The current inconsistent approach to these matters creates unnecessary administrative complexity for multi-state businesses.

### What is proposed?

Part 9.2.42 of the proposed regulations requires a mine operator to ensure that:

- a worker is given a written summary of the work health and safety management system for the mine and is informed of the right to see a copy of the documented work health and safety management system
- a copy of the documented work health and safety management system is readily accessible on request
- the principal mining hazard management plan is available to a worker who is to carry out work to which the plan relates
- the ventilation control plan and the emergency plans are readily accessible to all workers at the mine, and
- so far as is reasonably practicable, if the work health and safety management system is revised, each worker at the mine is made aware of any revision that is relevant to the worker.

Part 9.2.43 of the proposed regulations imposes a duty on a mine operator to ensure, so far as is reasonably practicable, that workers at the mine are provided with suitable and adequate information, training and instruction in relation to:

- all hazards associated with mining operations
- the implementation of risk control measures
- strategies developed and implemented to protect persons from risks to health and safety arising from fatigue, the consumption of alcohol or the use of drugs
- the content and implementation of the work health and safety management system for the mine
- the emergency plan for the mine, and
- the safety role for workers.

Part 9.2.44 of the proposed regulations requires a mine operator to ensure that a visitor who enters the mine is, as soon as practicable:

- informed about risks associated with mining operations to which the visitor may be exposed, and
- instructed in safety precautions and the actions the visitor should take if the emergency plan for the mine is implemented while the visitor is at the mine.

Part 9.2.45 of the proposed regulations requires a mine operator to ensure that information, training and instruction provided to workers is reviewed and as necessary revised to ensure that they remain relevant and effective.

Part 9.2.46 of the proposed regulations requires a mine operator to make a record of any training provided to a worker and keep the record while the worker remains engaged at the mine.

### What are the current jurisdictional requirements?

In NSW, the general work health and safety framework provides that an employer must ensure that each new employee receives induction training that covers:

- arrangements at the place of work for the management of occupational health and safety
- health and safety procedures at the place of work relevant to the employee, including the use and maintenance of risk control measures, and
- how employees can access any health and safety information that the employer is required to make available to employees.

An employer must ensure that any person who may be exposed to a risk to health and safety at the employer's place of work is informed of the risk and provided with any information, instruction and training necessary to ensure the person's health and safety. In NSW the mine safety management plan for a mine must include arrangements for appropriate instruction, training and provision of information for persons so as to meet the requirements of the work health and safety legislation relating to the provision of instruction, training and information. The mine safety management plan must also include any site safety rules with the details of arrangements for ensuring that all persons at the site, whether employees, contractors, suppliers or visitors are informed of the rules.

The operator of a mine in Victoria must provide information, instruction and training to employees at the mine in relation to:

- all mining hazards at the mine
- the implementation of risk control measures
- the strategies developed and implemented in relation to the consumption of alcohol and drugs and employee fatigue, and
- in the case of prescribed mines:
    - the content and implementation of the safety management system
    - the emergency plan, and
    - the safety role for employees.

The operator of a mine must ensure that the information, instruction and training provided is monitored, reviewed and, if necessary, revised in order to remain relevant and effective and must make a record of all training provided to an employee and retain that record while that employee is employed at the mine.

The operator of a prescribed mine must ensure that the documented safety management system, the emergency plan and the plan of the mine are readily accessible to employees.

The operator of a mine must also ensure that any person other than an employee of the operator who enters a mine is, as soon as is reasonably possible after entering is informed about any mining hazards

to which the person might be exposed while at the mine and instructed in the safety precautions the person should take while at the mine and in the case of a prescribed mine, instructed about the action the person should take in the event of the emergency plan being activated while the person is at the mine.

In Queensland a work health and safety management system for a coal mine must include a training scheme for persons at the mine. The Queensland regulations set out detailed requirements for such training schemes, including refresher training and the keeping of records of training and assessment given and undertaken. Refresher training must be given under the mine's training scheme at least once every five years. A person starting work at a coal mine must not carry out any task at the mine unless the person has completed induction training for the mine.

In WA an employer must provide information, instructions and training to and supervision of employees at a mine as is necessary to enable them to perform their work in such a manner that they are not exposed to hazards. Each responsible person at a mine must ensure that every employee is given adequate instruction and training in safety procedures and systems of work and in the tasks required of the employee and retrained and reassessed whenever systems of work or plant and equipment are changed, or new systems of work or plant and equipment are introduced.

Records must be made of any instruction, training, retraining, assessment or reassessment given and kept for a minimum of two years after it is made.

In SA an employer must:

- provide such information, instruction, training and supervision as are reasonably necessary to ensure that each employee is safe from injury and risks to health
- ensure that any employee who is to undertake work of a hazardous nature not previously performed by the employee receives proper information, instruction and training before he or she commenced that work, and
- keep information and records relating to occupational health, safety or welfare training undertaken by any of the employer's employees during their employment with the employer.

In Tasmania a mine operator must provide any information, instruction, training and supervision reasonably necessary to ensure that each mine worker is safe from injury and risks to health and ensure that all persons working at the mine have the necessary skills, competence and resources to undertake their work safely and to ensure the safety of others.

An accountable person, if requested by another person, must provide to that other person any relevant health and safety information that is not commercially sensitive or of a personally confidential nature and that is necessary for that other person to fulfil his or her work-related obligations at that workplace.

In NT an employer must ensure that a worker receives sufficient information, instruction and training in the work that the worker may be required to perform to enable the worker to perform the work without risk to the health and safety of the worker or any other person. The information, instruction and training provided must be reviewed and revised at regular intervals and a record must be kept of the information, instruction and training provided to a worker.

A PCBU in the ACT must provide appropriate information, instruction, training or supervision to workers and other people at the business or undertaking to allow work to be carried out safely and keep the

information and records relating to work safety required under their Act, including incident reports and training records, in relation to the business or undertaking.

The Commonwealth has no specific provisions in respect of information, instruction and training for mining operations.

### Overview of impacts from the proposed regulations

Generally there will be an impact in all jurisdictions except Victoria as current requirements on the provision of information, training and instruction will need to be brought into line with the more specific requirements in the proposed regulations.

The requirements in NSW regarding the provision of information, training and instruction for workers and the provision of information to visitors are generally consistent with the proposed regulation. There will be some impact in relation to the new requirement to keep records of training and retain them while the worker remains engaged at the mine.

The Victorian provisions are substantially similar to the proposed regulations therefore it is not expected that there will be an impact in Victoria.

The Queensland regulations are mostly consistent with the proposed regulation but there will be some impact on the requirements in the proposed model work health and safety regulations, particularly the requirements to provide information about risks to visitors.

In WA the requirements are mostly consistent with the proposed regulation but there will be some impact on the keeping of records of training. Currently they are required to be kept for a minimum of two years while the proposed regulation will require these records to be kept for the whole period in which the worker remains engaged at the mine. There will also be an impact from the proposed requirement to provide information about risks to visitors.

SA and NT have requirements that are mostly consistent with the proposed regulations. There will be an impact in respect of the proposed requirement to provide information about risks to visitors.

In Tasmania the requirements are mostly consistent with the proposed regulations. There will be an impact in relation to the proposed requirements to keep training records and to provide information about risks to visitors.

In the ACT the requirements are mostly consistent with the proposed regulations. There will be an impact in that the proposed regulation is more specific than the current general broader provisions.

The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact.

## 5.8 Fitness for work and health monitoring

### What is it?

Fitness for work relates to the fitness of a worker to carry out their work safely and without risks to their own health and safety or that of others.

### What is the problem?

While fitness for work issues are covered by the general duties under the model WHS Act, only health monitoring is specifically regulated under the model WHS Regulations. In the mining industry, making special provision for fitness for work issues is the current position taken in most jurisdictions, although approaches vary. A consistent approach will enable equitable treatment of workers across all jurisdictions and minimise administrative complexity for multi-state businesses.

### What is proposed?

Part 9.3 of the draft model mines regulations sets out requirements relating to fitness for work and health monitoring.

Under the proposed model work health and safety regulations, mine operators would be required to:

- develop and implement strategies for the control of any risks to health or safety associated with worker fatigue
- develop and implement strategies to protect persons at the mine from any risk to their health or safety arising from the consumption of alcohol or the use of drugs by any person
- ensure that a person whom the mine operator reasonably believes is adversely affected by alcohol or drugs does not enter or remain at a mine
- ensure that health monitoring is carried out in relation to a worker at the mine who is exposed to a risk associated with mining operations that may reasonably be expected to have an adverse effect on the worker's health
- consult the worker in relation to the selection of the registered medical practitioner and the timing of the monitoring
- ensure that a person who applies to carry out work at the mine is told about the purpose, type and nature of the health monitoring scheme before the person starts work at the mine
- pay all expenses in relation to health monitoring, and
- ensure that a worker's health monitoring results are kept as a confidential record for at least 30 years for hazards known to have a cumulative or delayed health effect or for seven years for other hazards.

The proposed work health and safety management system would also be required to deal with these issues under the proposed mines regulations.

The model Code of Practice: *Health Monitoring in Mining* has been developed to provide practical guidance for the mine operator who has duties under the model WHS Act and model WHS Regulations to provide health monitoring that:

- assesses the health status of all mining industry workers on a regular basis
- analyses collected data to detect adverse health effects at the earliest opportunity
- evaluates the control measures employed to control exposure and enable appropriate and timely corrective action to be taken where necessary, and

- provides data for future epidemiological studies.

It also provides guidance on milestones for a health monitoring system for effective monitoring of new and existing workers in the mining industry.

The Code of Practice also provides information for registered medical practitioners to assist them in planning and implementing a program of health monitoring in the mining industry, including details of competency levels and useful questionnaires for some types of health monitoring.

No new obligations are being introduced in this model Code of Practice that are not already provided for in the proposed model work health and safety regulations.

Comment is sought on whether the draft model Code of Practice:

- is helpful and easy to understand, and
- reflects current state of knowledge and technological developments in relation to managing risks.

## Overview of impacts from the proposed regulations

*Fitness for work and health monitoring*

The operator of a mine in NSW must prepare and implement a fitness for work program in relation to the health, safety and welfare at work of all the people employed at the coal operation. The program must include measures to eliminate or control the risks arising from the consumption of intoxicating liquor or drugs at the mine, and fatigue.

In Victoria the operator of a mine must:

- develop and implement strategies to protect persons at the mine from any risk to their health or safety arising from the consumption of alcohol or the use of drugs by any person
- develop and implement strategies for the control of any risks to health or safety associated with employee fatigue, and
- arrange for the ongoing health surveillance of an employee.

In Queensland the site senior executive must ensure that each worker at the mine is assessed to decide if the worker's fitness level is adequate to enable the worker to carry out work at the mine without creating an unacceptable level of risk. For a coal mine, the work safety and health management system must provide for controlling risks at the mine associated with the excessive consumption of alcohol, personal fatigue and other physical or psychological impairment.

In Tasmania a mine operator must, as part of the mine work health and safety management system, develop and implement a documented fitness for work program in relation to the health, safety and welfare at work of all persons performing work at the mine. The mine operator must ensure that the fitness for work program includes measures to eliminate or where elimination is not reasonably practicable minimise the risks arising from the consumption of alcohol or drugs at the mine and fatigue.

In NT the risk management plan for a mining operation must include a fitness to work program which must specify appropriate risk management measures to eliminate as far as reasonably practicable, the risks resulting from consumption of alcohol or intoxicating drugs at the mining site and minimise as far as reasonably practicable, the risks resulting from fatigue.

As the proposed regulations relating to fitness for work and health monitoring are very similar to the current arrangements in NSW, Victoria, Queensland, Tasmania and NT, there is likely to be little impact in those jurisdictions.

In WA the principal employer at, or the manager or supervisor of, a mine may direct an employee reporting for duty to immediately leave the mine if in the opinion of the principal employer, manager or supervisor the employee is adversely affected by intoxicating liquor or drugs.

The Commonwealth, SA and the ACT have no specific provisions.

The proposed regulations would impact on WA, SA the ACT and the Commonwealth to the extent that the provisions of the regulations are not covered under the broader general work health and safety framework currently in place. There would be an administrative and resource impact in those jurisdictions. In particular, mine operators would be required to develop and implement strategies to control any risks associated with worker fatigue, the consumption of alcohol or the use of drugs. Mine operators would also be subject to specific new provisions for health monitoring.

Comment is sought as to whether 'fitness for work' provision should be made in the proposed mines regulations, and if so details of the kind of provisions that are supported and why.

Comment is also sought as to whether the scope of health monitoring requirements proposed under the mining regulations adequately deal with the relevant mining-specific issues. For example:

- whether further provision should be made to minimise any duplication between health monitoring requirements, such as the parallel obligations of mine operators and employers at the mine—note there is a general duty to monitor workers' health under the WHS Act
- whether further provision should be made about sharing of costs relating to health monitoring
- whether special provision should be made in relation to workers that work multiple mines in a region, so for example the resulting health monitoring information may be obtained once only and shared between relevant duty holders
- whether special provision should be made in relation to workers that are already subject to ongoing health surveillance by their employer that meets the requirements of the model mines regulations when they commence work at a new mine—see regulation 9.3.3(2)(a).

In relation to fatigue, comment is sought as to whether:

- further provision should be made in the regulations on what the proposed strategies must cover, and

- a corresponding worker duty is supported, for example a requirement to advise their PCBU of certain circumstances relevant to their ability to carry out work safely, of which fatigue would only be one example.

*Health monitoring records*

In SA an employer must retain a record in a suitable form of assessment reports regarding health surveillance and the results of any health surveillance for at least 30 years from the date of the last entry.

In Tasmania an employer must ensure that a record of all health surveillance results is kept for 30 years.

In the NT an employer must keep a record of all health surveillance results for a period of 30 years where the health surveillance was in relation to a hazardous substance or for the period that the worker remains employed by the employer for any other health surveillance.

In Queensland health surveillance reports must be kept for 30 years for a hazard with a cumulative or delayed effect or seven years for another hazard.

The current arrangements in SA, Tasmania, NT and Queensland are substantially similar to the proposed regulation therefore there is likely to be little impact in those jurisdictions.

In NSW health monitoring records must be kept of any routine or specific health surveillance and retained for at least five years or until the person concerned leaves employment at the mine, whichever is the longer period. As the proposed regulation would require records to be kept for a longer period than is presently required there would be an impact on mine operators in NSW.

In Victoria and WA there is currently no prescribed time limit for the keeping of records. In Victoria an employer must, so far as is reasonably practicable, keep information and records relating to the health and safety of employees of the employer. In WA an employer must ensure that records of the results or outcomes of health surveillance obtained by that employer are retained as confidential records. While the proposed regulation would be more prescriptive, it would also provide certainty as to the period for which health monitoring records must be kept.

In the ACT there is no specific provision for health monitoring or the time in which health monitoring records must be kept. There would therefore be an administrative and resource impact on the operators of mines in that jurisdiction.

The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact.

WorkSafe Victoria (2001) estimated that to develop a fitness for work monitoring system would cost from $500 for a small mine up to $5000 for a large mine.

## 5.9 Consultation and workers' safety role

### What is it?

Consultation with workers, their health and safety representatives (HSRs) and others at the workplace is an essential part of managing work health and safety risks. Making specific provision for a worker's

safety role ensures that workers are able to contribute to the identification of principal mining hazards and the consideration of risk control measures for risks associated with such hazards at the mine

## What is the problem?

The model WHS Act contains general provisions concerning consultation with workers. The proposed model work health and safety regulations require mine operators to establish systems, plans and strategies to ensure the health and safety of workers at the mine. Specific provisions about consultation are needed to ensure that workers are consulted in the development and implementation of these matters.

## What is proposed?

Part 9.4 of the proposed model regulations sets out requirements for consultation and for developing a safety role for workers. Mine operators would be required to:

- Consult with workers at the mine in relation to:
    - implementing the WHS management system for the mine
    - conducting risk assessments for principal mining hazard management plans
    - preparing and reviewing the emergency plan for the mine
    - the safety role for workers, and
    - developing and implementing strategies to protect persons at the mine from any risk to health and safety arising from the consumption of alcohol or drugs by any person and worker fatigue.
- Implement a safety role for workers at the mine that enables them to contribute to:
    - the identification of principal mining hazards, and
    - the consideration of risk control measures for risks associated with principal mining hazards at the mine.

## Overview of impacts from the proposed regulations

*Consultation*

The operator of a mine in Victoria must consult with employees and health and safety representatives about:

- developing and implementing strategies for the control of any risks relating to the consumption of alcohol, the use of drugs and employee fatigue
- in the case of a prescribed mine:
    - implementing a safety management system
    - conducting a safety assessment
    - developing a safety role for employees, and
    - preparing or reviewing and revising an emergency plan.

In Tasmania a mine operator must, as far as is reasonably practicable, consult with workers on all matters relevant to their health and safety at the mine. A mine operator must ensure that consultation includes, but is not limited to:

- the development of the health and safety management system
- the identification of hazards and risks in hazard identification and risk assessment
- decisions made about the measures to be taken to eliminate or control risks to health and safety
- introducing or altering the procedures for monitoring those risks including health monitoring procedures
- proposed changes to premises, work systems or methods, or to plant or substances, that may affect health and safety, and
- decisions made about the procedures for consultation.

As the proposed provisions relating to consultation are substantially similar to the current arrangements in Victoria and Tasmania, the impact of the proposed regulations will be limited in those jurisdictions.

In NSW the general provisions regarding consultation are very comprehensive and would cover the intent of the proposed regulations. NSW has a specific consultation requirement relating to a fitness for work program, which must be developed in consultation with the workers at the mine. The impact of the proposed regulation in NSW is likely to be limited.

Queensland make some provisions for consultations with workers at mines but otherwise consultation is covered under general provisions. The proposed regulations would therefore place more prescriptive requirements on mine operators in those jurisdictions.

WA has general provisions relating to consultation with workers. The proposed regulations would therefore impose additional requirements on mine operators in that jurisdiction.

The proposed regulations would impact on SA, NT and the ACT to the extent that the provisions of the draft model mining regulations are not covered under broader provisions relating to consultation in those jurisdictions. The impact would relate to the extent of consultation required on the specific matters identified in the proposed regulations.

The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact.

*Safety role for workers*

There will be some impact on Victoria as their current provisions in respect of a safety role for workers only apply to prescribed mines.

In NSW the current provisions relating to consultation specifically provide that such consultation must ensure that employees are able to contribute to the making of decisions affecting their health, safety and welfare at work. The effect of the proposed regulation is likely to be limited in NSW.

Queensland, SA, Tasmania, NT, WA and the ACT would be required to introduce a legislated safety role for workers in mines. The proposed regulation would build on existing consultation provisions in those jurisdictions to ensure that workers are involved in the identification of hazards and the consideration of risk control measures for the particular issues applying to mines. The proposed regulation would be

more prescriptive but in practical terms its effect is likely to reflect current practice in the mining industry.

The Commonwealth does not currently have mining operations under its jurisdiction therefore there will be no impact.

## 5.10 Mine survey plans

### What is it?

A mine survey plan is a detailed plan of the mine. It provides information of the location of the mine in relation to other previous and current mining operations, the location of natural features surrounding the mine and the location of safety installations within the mine.

### What is the problem?

There is not a consistent approach across jurisdictions to requirements relating to mine survey plans. A failure to have detailed and accurate plans may lead to inadvertent intersections of old mine workings or natural features which could result in flooding of active workings of a mine or increases in gas levels, therefore impacting on worker safety.

### What is proposed?

Part 9.5 of the proposed regulations sets out requirements for a survey plan of a mine. It provides that a mine operator must ensure that an accurate and detailed survey plan of the mine is prepared by:

- in the case of an underground coal mine or an underground metalliferous mine, a registered mine surveyor or a person defined as appropriate for a particular jurisdiction; or
- in any other case a competent person.

As registration for this purpose falls within state and territory responsibility comment is sought on resourcing requirements to meet this requirement for the relevant mine operators in each jurisdiction.

The plan must clearly show:

- the workings of the mine, including disused workings and bore holes
- the location of electrical installations
- the location of telephones and other fixed plant associated with the radio and telecommunication systems
- water dams and tailings dams
- natural features surrounding the mine
- places where hydrocarbons or explosives are stored
- points of entry and exit, including emergency exits, and
- refuges (in an underground mine).

Part 9.5.1 provides for the review of the survey plan. Part 9.5.3 provides that the survey plan must be kept available for inspection and be readily accessible to workers at the mine on request.

The draft model Code of Practice: *Survey and Drafting Directions for Mine Surveyors* has been developed to provide guidance on the preparation of the hard copy, digital themes, storage and preparation of the mine plan with respect to mine workings and mine spatial information for the whole of the mine. It provides guidance to the preparation of other plans based on the mine's stored data.

No new obligations are being introduced in this model Codes of Practice that is not already provided for in the proposed model work health and safety regulations.

Comment is sought on whether the draft model Code of Practice:

- is helpful and easy to understand, and
- reflects current state of knowledge and technological developments in relation to managing risks.

### Overview of impacts from the proposed regulations

The requirement in Victoria for a detailed plan of a mine is substantially similar to the proposed regulation for a mine survey plan. As the Victorian requirement only applies to a prescribed mine, there will be some impact in Victoria.

NSW, Queensland, WA and Tasmania require the preparation of detailed plans but their prescribed content is different to that proposed under the draft model mining regulations. While the requirement to have a plan would not be new, there would be an impact to the extent that the content of the mine survey plan is different to the current provisions. SA requirements for mine plans only apply to those mines on which a notice has been served by the Chief Inspector. A more general requirement for mine plans as proposed will be broader than currently exists in SA and may be a significant impact for those mines where there is not currently a requirement to develop a plan.

As NT and the ACT currently have no provision for a mine survey plan, the impact in individual businesses in those jurisdictions could be significant.

Detailed plans are currently used in the industry for a range of reasons other than just managing safety, including ensuring economic blasting operations and extraction of the mineral of interest. The impact of the proposed regulation on an individual mine will depend on the extent to which mine survey plans are not developed as part of standard practice in operating those mines. The greater impact may be in small mining and quarrying operations, where detailed plans may not be required to manage the costs of extracting the mineral of interest.

The Commonwealth does not currently have mining operations in its jurisdiction therefore there will be no impact.

## 5.11 Notification of high potential incidents

### What is it?

The aim is to develop a database of mines-specific information collected by regulators that would be collated and analysed nationally. It is envisaged that the resulting dataset would enable longer term work health and safety trends for the mining industry across Australia to be identified so that strategies to further enhance work health and safety performance in mines may be developed. The development of a consistent national data set of information was one of the seven strategies endorsed by COAG to provide for greater harmonisation in the mining industry.

### What is the problem?

There is currently an inconsistent approach across jurisdictions to the collection of mine-specific safety information, limiting the ability to monitor health and safety trends across the industry and monitor the effectiveness of the various regulatory regimes in delivering improved health and safety. Inconsistent requirements for notification and reporting also lead to unnecessary administrative complexity for multi-state businesses.

### What is proposed?

In addition to incident notification requirements under Part 3 of the model WHS Act it is proposed that mine operators must:

- ensure that prescribed 'occupational diseases' are notified under Part 3 of the model WHS Act (further provisions would be drafted for this purposes)

  | Comment is sought on the kind of 'occupational diseases' that could be prescribed for this purpose |
  |---|

- ensure 'high potential incidents' are notified to the regulator (regulation 9.6.1), and
- report additional, prescribed work health and safety matters on a quarterly basis to the regulator (regulation 9.2.9, Schedule 9.1).

The intention in part is to enable collection of a dataset which has been endorsed by the MCMPR and COAG. The proposed content of the national data set is provided at Appendix G.

### Overview of impacts from the proposed regulations

The model WHS Act requires the notification of serious injuries and illnesses and dangerous occurrences. A number of dangerous occurrences are of particular relevance to mining operations, including the collapse or partial collapse of an excavation, inrush of water, mud or gas in workings in an underground excavation and the interruption of the main system of ventilation in an underground excavation. This means that most of the more serious incidents that could occur at a mine would already be required to be reported under this requirement in all jurisdictions other than Queensland and WA where the WHS Act does not apply to mining operations.

Currently NSW, NT, Queensland and WA have specific requirements to report safety information relating to mining activities. This includes information on matters including accidents, incidents and near misses as well as denominator data like hours worked and number of workers at a mine and production data. Some data is required to be reported as soon as possible after the accident, incident or near miss, with denominator data generally required on a periodical basis.

The requirement to report a broader range of data than required under the general work health and safety provisions will impact on the other jurisdictions as they currently rely on the general serious incident and dangerous occurrence reporting requirements in their current work health and safety legislation to gather information about safety incidents at workplaces, and do not have broader arrangements specifically for the mining industry.

Comment is sought on the extent of the impact on all jurisdictions of the proposed requirements.

## 5.12 Mine record

### What is it?

A mine record provides a history of matters which relate to the safe operation of a mine, particularly in relation to notices issued by the inspectorate and notifiable incidents which have occurred at the mine.

### What is the problem?

There is not a consistent approach across jurisdictions to requirements relating to a mine record. Not all jurisdictions regulate a requirement for a mine to have a mine record. As a consequence, the requirements for multi-state mining companies will differ across jurisdictions, resulting in unnecessary administrative complexity.

### What is proposed?

Part 9.7 would require the mine operator of a mine to keep a mine record for the mine. The mine record must contain:

- a record of any notice issued in relation to the mine under Part 10 of the WHS Act (Part 10 contains the general enforcement measures under Act and covers notices such as improvement and prohibition notices)
- a record of every notifiable incident at the mine, including details of the mine operator's investigation of the incident
- a record of every high potential incident at the mine, and
- each report required under the regulations by a shift supervisor at the mine.

A record that forms part of the mine record must be kept available for inspection and for seven years from the date the record was made.

The draft model Code of Practice *The Mine Record* has been developed to provide practical guidance for the mine operator on how to create and maintain appropriate mine records. This Code of Practice applies to all mines including metalliferous and coal mines (surface and underground) quarries and exploration sites.

No new obligations are being introduced in this model Codes of Practice that is not already provided for in the proposed model work health and safety regulations.

Comment is being sought through the public consultation process on whether the draft model Code of Practice:

- is helpful and easy to understand, and
- reflects current state of knowledge and technological developments in relation to managing risks.

### Overview of impacts from the proposed regulations

Queensland and WA require the keeping of a mine record book and have very detailed requirements in respect of the matters which must be included in it. As the current Queensland and WA provisions go beyond the proposed regulations, adoption of the core regulations for mine records will not result in an increased impact in those jurisdictions. As it is not known whether the non-core provisions will extend the proposed regulation, the overall impact for these jurisdictions is difficult to determine.

NSW does not require the keeping of a formal mining record but does require the keeping of some of the information required under the proposed regulation. There would be an impact in that jurisdiction in relation to the administrative and financial resources needed to comply with the proposed regulation.

Tasmania requires a mine operator at a mine, other than a mine where exploration is the only mining operation, to keep a record book in a form approved by the Chief Inspector of Mines to record the inspections made by inspectors, together with instructions given by those inspectors and other information specified in writing by the Chief Inspector of Mines. The mine operator must ensure that the record book is available for inspection by employees, contractors and self-employed persons at the mine. There would be some impact in Tasmania to the extent that the content of the proposed mining record goes beyond the existing provisions in that jurisdiction.

Mine operators in SA are currently required to develop and maintain an inspection record system for the life of the mine which has attributes of the proposed mine record requirements. There will also be some impact in SA where the proposed mine record requirements will have additional provisions compared with the current mine record system requirements.

As there are no current requirements for a mine record in Victoria, NT and the ACT as proposed in the draft model mining regulations, there would be a significant change for businesses in those jurisdictions in implementing the proposed regulation. The extent of the impact is difficult to assess as it would be anticipated that most mines would currently keep records of the types specified in the proposed regulation.

The Commonwealth does not currently have mining operations in its jurisdiction therefore there will be no impact.

# 6 Preliminary cost benefit analysis

The following preliminary cost benefit analysis is based on information provided and available to date. It is expected that the costs and benefits of introducing the proposed model work health and safety regulations and codes of practice for mines will be discussed in detail following the information provided from stakeholders in the public comment process, including the survey.

The analysis has been undertaken in terms of the likely costs and benefits for business using existing regulatory requirements as the base case. To the extent that some businesses may be already meeting the proposed requirements, costs and benefits may be mitigated somewhat. If the consultation feedback provides support for the case that there is already substantial compliance with the new requirement, the final RIS would take this into account.

It is also important to note that this Consultation RIS is a supplementary RIS to the model WHS Regulations and Codes of Practice RIS, which provided further details of the anticipated costs and benefits of introducing model WHS Regulations.

## 6.1 Costs

### 6.1.1 Expected costs to businesses

Costs caused by overlaps and inconsistencies in regulations between jurisdictions are unnecessary and are unlikely to have any offsetting safety benefits. Removing these differences should confer net gains for multistate businesses.

The main costs to business from introducing the proposed model work health and safety regulations for mines will be in adapting to the new regulations, especially for single-state businesses that will not reap the offsetting benefit of reduced complexity. The cost burden may be lower as during preliminary consultations there was a view that businesses typically exceed the current regulations and may already comply to a greater degree with the proposed model work health and safety regulations for mines compared with assuming only compliance to a level consistent with the current regulations.

A number of jurisdictions commented that operators of small mines (for example, opal mines) and quarries may face proportionally greater adjustment costs than large mines with work health and safety specialists, due to the complexity of some of the Codes of Practice. In jurisdictions like Tasmania and Victoria, quarries are not currently covered by mine-specific regulations, and would therefore currently not be required to have risk management plans.

As each jurisdiction has differing requirements there will be changes that will require additional costs, which will vary by jurisdiction. One state commented that even some changes that are considered minimal, in terms of degree of regulatory change, could still cause significant costs.[5] As SA and the NT will have considerable changes it is expected that the new regulations will have a higher cost burden on businesses there, while businesses in Tasmania and Victoria should have less. A survey of firms to be undertaken for this RIS will be able to better assess actual costs to businesses.

For multi-state organisations there may even be a reduction in adjustment costs. These employers will only face one set of change with implementation of harmonised regulations and Codes of Practice rather than several jurisdiction-specific sets of change. These benefits will be ongoing. Under the model WHS Act all future changes will be conducted on a single nationally coordinated basis.

Conversely, the MCA considered that, while the non-core states are adopting work health and safety-equivalent regulations, because they will retain different, mine-specific work health and safety legislation, there will still essentially be two systems operating in Australia. This may reduce the potential benefits of Option 2.

An argument that is consistently raised against a fully harmonised system based on current Queensland, WA and NSW legislation is that it does not recognise the very different makeup of the mining industry across Australia. For example the majority of underground coal mining takes place in NSW and Queensland, with its inherent risks and attracts a higher level of regulation.

To the extent that the model regulations are less prescriptive than those they replace, there may be ongoing compliance savings for firms. There would also be initial adjustment costs which were estimated at around $75 per worker for non-mining WHS harmonisation (Safe Work Australia, 2011). For 150 000 mine workers, that would be an initial adjustment cost of around $11.25 million.

### 6.1.2 Expected costs to workers

It is not expected that there will be any direct costs to workers. Training costs should be met by employers. It is possible that some independent contractors may have to undertake their own training, but they would be considered PCBUs for the purposes of this analysis.

It is not expected that there will be any costs to workers in the form of reduced safety, as it is a specific requirement of COAG that there be no reduction in safety from harmonisation.

### 6.1.3 Expected costs to government

In preliminary consultations, regulators indicated that they considered any costs of providing education and training for mining to be simply part of the larger work health and safety regulatory harmonisation exercise. As this is a supplementary RIS to the RIS for the model WHS Regulations and Codes of Practice, regulators' costs per mine worker for ushering in work health and safety reforms will initially be assumed to be the same as regulators' costs for workers in all other industries, i.e. $3.85 initial adjustment costs per worker and $1.93 per worker per year thereafter. This assumption may need to be changed following feedback from the survey, consultations and public submissions.

[5] During consultations for the general WHS regulations RIS, there was a very strong correlation between degree of regulatory change and expected costs. There were also a few cases where participants considered a minimal regulatory change would lead to significant costs.

It has been raised that as well as the above costs of providing education and training to mine workers, regulators in the more prescriptive states would face 'cultural change' costs. While this is not a quantifiable cost, it could lead to the new regulations being less effective than they might otherwise have been.

## 6.2 Benefits

### 6.2.1 Safety

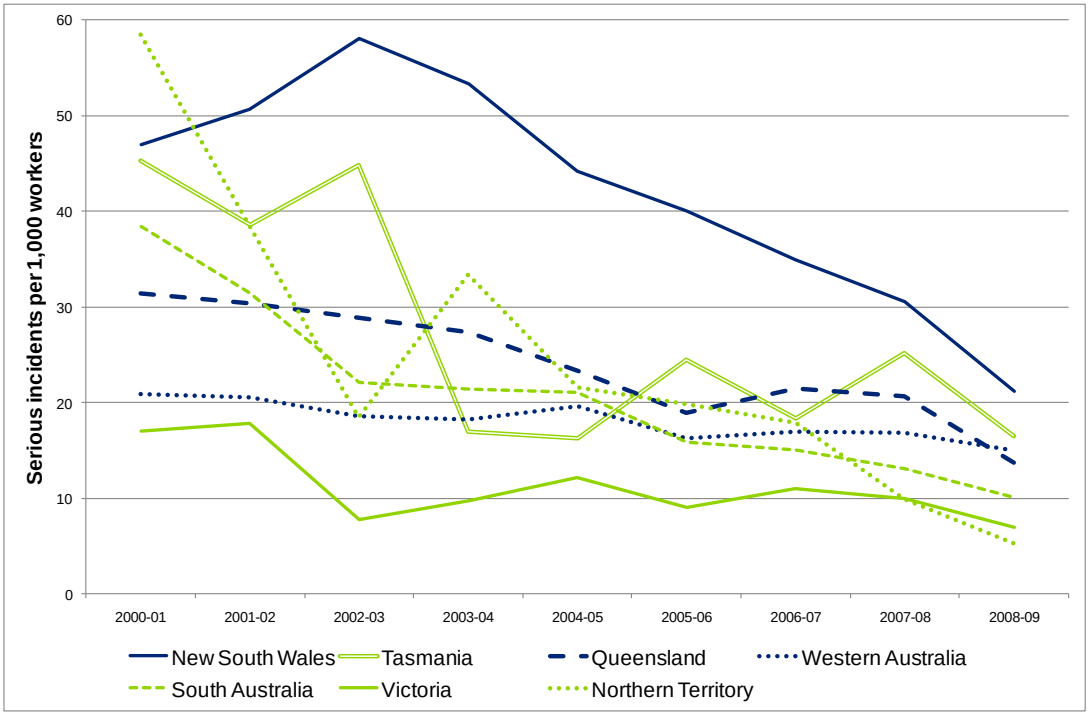
Gunningham (2007) notes that while general work health and safety regimes in Australia have moved from prescriptive to performance based regulation since the introduction of the Robens reforms[6] in the 1970s, mine-specific safety regulation has not.

> 'Each of the mining states has a very different culture, history and approach to that of generalist OHS regulatory agencies. One consequence of this separation of mining from mainstream OHS has been to isolate the industry from legislative and regulatory developments elsewhere. What became regarded as "next generation regulation" as regards OHS generally, was largely ignored by the mining sector, its policy makers and its regulators, who continued to adopt forms of regulations which mainstream regulators had long rejected as *unlikely to reduce levels of work related injury and disease to anything approaching acceptable levels*.' (Italics added.)

This is possibly illustrated in that 'core' jurisdictions generally have overall better levels of safety across the mining industry in terms of serious incidents per 1000 workers than the non-core jurisdictions where mining safety is governed by general mine safety laws (Chart 6.1). Rather than necessarily indicating better work health and safety regimes, the improved safety levels may also be a reflection of the differences in the mining industry in each state and territory. For example the majority of underground coal mining in Australia is in NSW and Queensland.

[6] Which were adopted in the United Kingdom, New Zealand and all Australian jurisdictions in response to a major mining disaster.

**Chart 6.1 : Mine safety by jurisdiction**



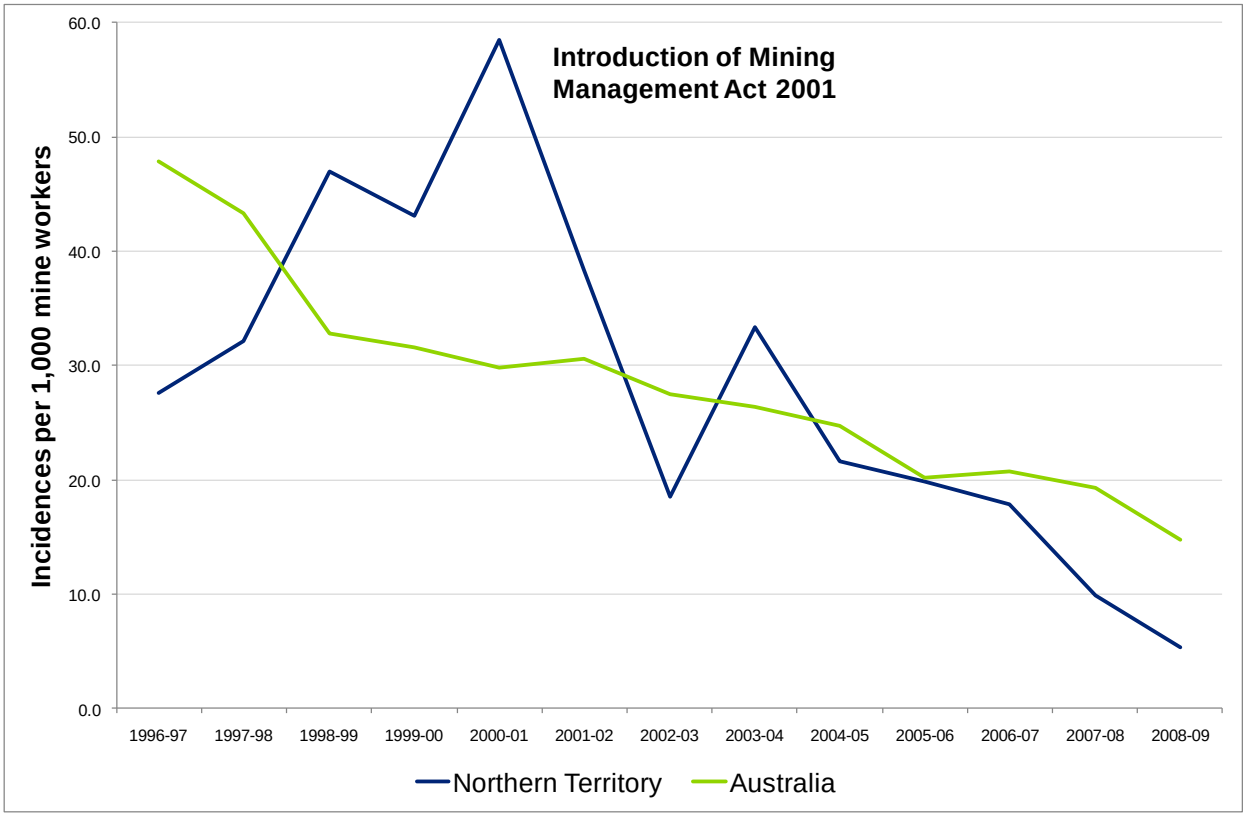

Note: core states are in green, non-core states are blue
Source: Safe Work Australia National Online Statistics (http://nosi.ascc.gov.au/Default.aspx)[7]

Consequently, a better indication of the efficacy of safety regimes can be seen from looking at trends in safety within a jurisdiction over time, rather than levels of safety across jurisdictions at a given point in time. Within any given jurisdiction, the nature of mines is unlikely to change in the short term, so any improving trends in safety are likely to be indicative of improvements from regulation in that jurisdiction.

For example in 2001 NT replaced its previous prescriptive mine safety legislation with its outcomes-based *Mining Management Act 2001* that required a more systematic approach to managing hazards and risks and removed most of the detailed prescriptive regulation, which lead to a dramatic improvement in safety (Chart 6.2).

[7] Note, data are available prior to 1996-97, but not on a compatible basis with data used herein.

**Chart 6.2: Mine safety trends in NT**



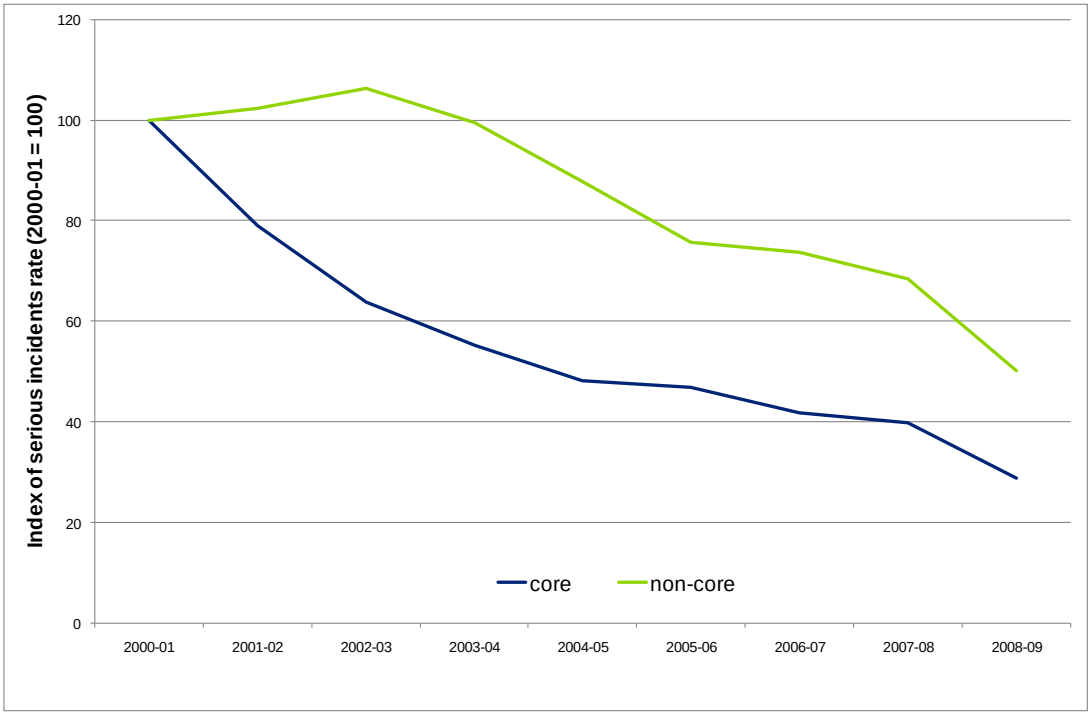

Source: Safe Work Australia

To the extent that the proposed model regulations for mines establish a more coherent systematic approach than the prescriptive regulations they will replace, there should be scope for safety improvements to be realised. The survey accompanying this Consultation RIS will be able to quantify some of these gains. In the interim it is possible to provide some preliminary estimates.

Chart 6.3 shows that states where mine safety is governed by general work health and safety regulations which apply a more performance based approach and generally have less prescriptive requirements have improved their safety considerably faster than states which rely on a combination of management systems and detailed mine-specific safety regimes. While safety has made commendable improvements under both the core and non-core regimes, the rate of improvement has been almost half as great in cores states compared to non-core states.

In extending the mandated a safety management systems approach to mining safety for all mines in Queensland in 2010, the Queensland Government recognised the improvements that can be made in requiring a systems based approach to managing hazards and risks. This was based on Queensland's experience on safety improvements made when a similar regime was introduced for large mines in 2001. Notably, Queensland did not reduce the level of prescriptive regulation also applying to mines.

**Chart 6.3: Index of safety improvements, by mining regime**




Source: Safe Work Australia

Over the eight years from 2000-01 to 2008-09, incident rates improved by 50 per cent in NSW, Queensland and WA. Over the same period, incident rates improved by 70 per cent in the other mining jurisdictions – a difference of 20 percentage points. Three of these four jurisdictions introduced new, outcomes-based, mining regulations around the turn of the century: Northern Territory (Mining Management Act 2001), Tasmania (Workplace Health and Safety Regulations 1998) and Victoria (Occupational Health and Safety (Mines) Regulations 2002). From Chart 6.3, it would appear that this lead to a substantial improvement in safety compared to the mining states. This margin has been retained in those jurisdictions. This view does not take account of the possible impact of differing mining profiles and therefore different risk profiles in jurisdictions, such as most underground coal mining being predominantly carried out in NSW and Queensland.

Most of the improvement in non-mining states appears to have occurred in the two years after new regulations were introduced. In each year the average improvement was around 20 per cent, compared to an average improvement of around 12 per cent annually from there on. On average, safety in mining states has been increasing at 8 per cent annually.

From the above information, it may be reasonable to assume that if NSW, Queensland and WA were to adopt a more outcome-based approach to regulation, their safety might improve by 20 per cent over each of the next two years, before reverting to trend again. Based on this, if outcome-based regulations had been introduced in 2009 (the last year for which we have incident rates), by 2011 incident rates could have been expected to have fallen from 50 serious incidents per 1000 workers to 29. Otherwise, incident rates would have only been expected to have fallen to 39 incidents per 1000 workers. This is equivalent to a 25 per cent reduction in serious incidents in mining states for 2011.

In Section 2.2, it was estimated that serious incidents in mining have an annual economic cost of around $2.4 billion. Given mining states account for 90 per cent of serious incidents, this would imply an economic cost in those states of around $2.16 billion. A 25 per cent reduction in incidents in mining states would have resulted in savings to society of around $0.54 billion in 2011, had outcome-based regulations been introduced in 2009. It should be noted that these results are illustrative. It is possible that during consultations, companies may state that they do not expect increases in safety to the extent outlined above.

### 6.2.2 Productivity

In previous work health and safety RIS reports (Access Economics 2010, Safe Work Australia 2011) multistate firms indicated that they expected considerable productivity improvements (in the order of one to two percent) to flow from harmonisation of legislation. In the Australian economy as a whole, employees of multistate firms account for 28 per cent of the workforce (Safe Work Australia 2011). Mining is considerably more concentrated. The top three companies (which are all multistate operators) account for the majority of total revenue and total employment in the industry (Table 6.4). As these five companies have combined revenues exceeding $150 billion, even a one percent increase in productivity[8] would lead to annual benefits of over $1.0 billion[9]. These figures should only be taken as illustrative only and more robust information, including revenue from domestic mining operations, will be sought from industry during the consultation phase.

Mining productivity is highly dependent on mineral prices, which are difficult to forecast, as they fluctuate considerably. The RIS will estimate productivity improvements on the assumption that prices remain constant at the level of the most recently available data. Sensitivity analysis will also be conducted against plausible historical variations in mineral prices.

**Table 6.4: Concentration in the Australian mining industry in 2010-11**

| | Employees | Revenue $bn | Market share |
|---|---|---|---|
| BHP Billiton | 39,750 | 71.319 | 22.0% |
| Rio Tinto | 76,894 | 56.576 | 20.0% |
| Xstrata | 20,786 | 23.104 | 8.2% |
| Woodside | 3,650 | 4.193 | 4.5% |
| Exxon Mobil | 1,889 | 6.892 | 2.5% |
| **Total** | **142,969** | **162.084** | **57.2%** |

Note: employees may include some not engaged in mining activities.

Source: IBIS World (www.ibisworld.com.au), Company360 (www.company360.com.au)

[8] For most industries, there are two measures of productivity: gross and value-added. For mining, being a primary industry, the two measures are effectively the same.

[9] The actual increase in productivity is caused by having fewer workers tied up in red tape would be $1.5 billion. This is a different effect to increases in production estimated in 6.2.1, where better safety improves production by keeping more workers on the job. As this distinction may not have been clear to survey participants in previous RIS, to rule out any double counting, the latter has been netted from the former.

## 6.3 Conclusion

Option 2 will consolidate existing elements of state and territory work health and safety regulations for mines in a more consistent manner than at present and provide for a common set of 'core' regulations across six jurisdictions (the Commonwealth, ACT, NT, SA, Tasmania and Victoria), as well as providing a common core of regulations for NSW, Queensland and WA that is consistent with the other six jurisdictions. Option 2 as proposed will require changes in most subject areas in most jurisdictions to align with a consistent model that takes elements from existing frameworks.

Option 2 is expected to attract benefits. Safety performance based on workers' compensation data is not highlighting significantly regulatory failure in the smaller jurisdictions compared with the larger jurisdictions. Based on this, it could be argued that the level of regulation in the respective jurisdictions, taking account of the significant differences in the types and sizes of mines, appears to be delivering a broadly similar outcome. What is not apparent is how much of this is due to the regulatory regimes and how much is due to mining operators adopting similar practices across the country, irrespective of the regulation. If the latter is the case, then a two tiered regulatory system based on the current structures may remain as the most cost effective model to improve consistency, as long as there is sufficient robustness in the core provisions to identify and deal with high risk matters when enforcement is required.

The primary focus for the cost benefit analysis in the Decision RIS will be to attempt to quantify and monetise the impacts of Option 2 relative to Option 1. It is expected that introduction of the proposed model work health and safety regulations for mines will present an overall small net benefit to the Australian economy. To the extent that the proposed work health and safety regulations for mining are more outcomes-based than existing regulations in mining states, there could be safety benefits of around $0.5 billion a year, including productivity, avoided health system expenditure and preservation of skills. Similarly, as the great majority of employment is in firms who operate in multiple jurisdictions, the reduction in red tape from adopting the 'core' regulations could result in efficiency gains of around $1 billion a year. These are both gross benefits. To the extent that the proposed model regulations are less prescriptive than those they replace, there may be ongoing compliance savings also but there would be initial adjustment costs of around $10 million for business. Regulators are also expected to incur some implementation and ongoing costs. The survey of mining firms to be undertaken during the consultation phase is expected to provide more robust estimates of the potential costs and benefits of Option 2 relative to Option 1.

# 7 Consultation

Consultations were undertaken with stakeholders during the development of the draft model work health and safety regulations for mining. The core jurisdictions' work health and safety authorities[10], the MCA, the Australian Council of Trade Unions (ACTU), the Australian Chamber of Commerce and Industry (ACCI) and the Australian Industry Group (Ai Group) were asked for comment. This consultation did not include discussion on the RIS process.

These consultations indicated that overall the regulations are generally acceptable, especially in being holistic and risk-assessment based with little duplication with the model WHS Regulations. Another general view is that the majority of the benefits would be realised by multi-state businesses. There would also be a benefit for the regulators as the uniformity would allow easier transfer of personnel across jurisdictions when needed. This is valuable for both skills transfer and financial reasons, as the core jurisdictions do not have levies to offset the regulatory cost.

Strong views were also expressed that some regulations were too prescriptive and too strongly based on old regulatory principles rather than on modern principles as they described the process rather than the outcome. The regulations for winding and ventilation were cited as an example. This style of regulation was not supported, as it does not allow for changes in conditions on site or for unforeseen changes in the future like technological and innovation changes and it is unlikely to provide any further safety benefit but could increase compliance and enforcement costs.

Concerns were raised about potential administrative burdens including requirements for shift records and that these requirements would not result in improved safety outcomes. It was commented that this could result in a lower quality of service by regulators in assessing sites and lead to frustration for operators having to manage a number of records which potentially may not improve safety.

Concerns were also raised in regard to the enforcement of the regulations and codes by regulators. Considerable training was viewed as necessary for both companies and regulators with a temptation to stay with what is known rather than changing to a new system, especially in jurisdictions that have not used risk-based assessment before. Another concern was that different enforcement or penalties may nullify harmonisation of the regulations to a significant degree.

A key concern raised was that there is currently no indication of lead in times or transition arrangements, especially if the proposed model work health and safety regulations for mines do not come into force at the same time as the main model WHS Regulations.

Regarding the legal enforcement, some state authorities noted that there is currently no clear legal interpretation of particular terms and regulations and that as codes are adapted rather than designed from the new regulations there is some mismatch which may cause further issues.

Key stakeholders were further consulted when the Methodology Report for the Consultation RIS was circulated for comment. The methodology presented was generally agreed as the approach to be used in developing the Consultation RIS.

[10] Non-core regulators have not been consulted as they were beyond the scope of the originally approved methodology. These states will be consulted during the public consultation period.

## 7.1 Next steps

The next stage of the consultation process has commenced with the release of the draft model work health and safety regulations for mines for public comment. The proposed regulations were accompanied by an issues paper.

The issues paper provided the starting point for consultation on the draft model work health and safety regulations for mines for stakeholders in all jurisdictions. The paper identified a number of issues that arose while the draft model regulations were being developed and sought stakeholders' comments on these issues and all aspects of the package of regulations and codes released for public comment.

The issues identified in the paper have been included in this Consultation RIS so that comment on the expected impacts and benefits of introducing the proposed model work health and safety regulations and codes for mines can be identified.

A survey form is included at Appendix D. The purpose of the survey is to seek further information from industry that will assist in quantifying the costs and benefits of the proposed model work health and safety regulations and Codes of Practice package. All major mining companies and a substantial number of mining service companies, exploration companies and small mining companies will be invited to participate in the survey. These will be approached through industry organisations that are represented on the NMSF Steering Group and other relevant industry associations.

In addition to the survey, Deloitte Access Economics will hold discussions with key stakeholders during the public consultation period for the Consultation RIS. An important part of these discussions will be to ascertain to what extent proposed regulatory changes reflect what is already industry current practice and what the impact of the changes will be.

All the comments received during the public comment process will be taken into consideration in the development of the Decision RIS that will accompany the package of model work health and safety regulations for mines.

# 8 Review provisions

All legislative changes agreed by COAG are subject to review to ensure a commitment to establish and maintain effective arrangements for maximising the efficiency of both new and amended legislation. This avoids unnecessary compliance costs and restriction of competition.

As advised in the RIS process for national harmonisation of work health and safety Regulations and Codes of Practice, Safe Work Australia is developing a plan in consultation with the Research Evaluation and Data Advisory Group (a tripartite group established to advise Safe Work Australia regarding research and statistical work), to evaluate the model work health and safety legislative framework and the outcomes of its implementation if adopted and implemented. This evaluation plan is being designed to provide information to:

- meet reporting requirements on progress towards achieving the objectives set out in the IGA and the model WHS Act
- assist the 2015 review of the IGA by WRMC, and
- assist jurisdictions in their implementation of the legislative framework and inform them of the impact of changes.

The plan has four main focus areas which align with the objectives of the IGA and the objects of the model WHS Act:

- improved health and safety
- uniformity
- reducing the regulatory burden of employers operating in more than one jurisdiction, and
- efficiencies for government.

The evaluation plan proposes work to begin in 2010-11 and will cover the first three years following implementation of the legislative framework up to the review of the IGA in 2015.

Where possible change will be measured using existing data sources including workers' compensation statistics, the Australian Bureau of Statistics Work-Related Injuries survey, fatality data and the National Hazard Exposure Worker Surveillance Survey 2008.

Where data are not available, surveys will be developed and undertaken. Baseline measures will be established in 2010-11 to enable pre and post implementation comparisons. Where possible these measures will include both lead and lag indicators.

# Appendix A: Mining industry overview and work health and safety performance

## Mining industry

The ABS business register keeps track of all entities registering for Australia Business Numbers (ABN). Table A.1 shows the total number of businesses identified as operating in the mining industry during the 2009-10 financial year, by jurisdiction and mining industry group.

**Table A.1 : Registered companies operating in the mining industry, by jurisdiction, 2009-10[11].**

| Mining industry group | NSW | NT | Qld | SA | Tas | Vic | WA | ACT | Total |
|---|---|---|---|---|---|---|---|---|---|
| Coal Mining | 149 | | 160 | 3 | | 12 | 21 | | 345 |
| Metal Ore mining | 138 | 21 | 198 | 42 | 21 | 120 | 523 | 6 | 1069 |
| Construction mineral mining | 533 | 30 | 537 | 214 | 39 | 314 | 324 | 9 | 2000 |
| Exploration | 358 | 24 | 271 | 93 | 21 | 200 | 1068 | 6 | 2041 |
| Other mining services | 231 | 24 | 547 | 72 | 36 | 147 | 709 | 18 | 1784 |
| Total | 1409 | 99 | 1713 | 424 | 117 | 793 | 2645 | 39 | 7239 |

Table A.1 shows that over one third of all registered businesses in the mining industry are registered in WA and a further quarter in Queensland.

Based on jurisdictional mining regulator information, it is estimated that currently in Australia there are approximately 1100 active mining operations, including small gemstone mines such as opal mines, 3900 extractive operations including quarries and 1600 active exploration operations.

Included in these are 366 major mining operations[12]. Table A.2 shows the distribution of these major operating mines by jurisdiction. Approximately 85 per cent of these mines are located in WA, Queensland and NSW, with over one third of operating mine sites in Australia located in WA. In terms of the commodity mined, over one third of operating mines are identified as black coal mines, with a further 17 per cent identified as gold mines.

[11] *Counts of Australia Businesses*, ABS Catalogue 8165.0, February 2011

[12] Australian Mines Atlas, *Geosciences Australia*. www.australianminesatlas.gov.au.

**Table A.2 : Distribution of operating mine sites, by jurisdiction, 2010**

| Jurisdiction | Number of mines | % of operating mines |
|---|---|---|
| New South Wales | 83 | 23% |
| Northern Territory | 13 | 4% |
| Queensland | 85 | 23% |
| South Australia | 20 | 5% |
| Tasmania | 14 | 4% |
| Victoria | 11 | 3% |
| Western Australia | 140 | 38% |
| Total | 366 | 100% |

Table A.3 shows the values of commodities produced from Australian mine sites for the 2008-09 financial year[13].

**Table A.3 : Total value of mineral commodities produced ($m), by jurisdiction, 2008-09**

| Jurisdiction | Fuel | Metallic | Industrial | Construction | Total |
|---|---|---|---|---|---|
| New South Wales | 19 494 | 2 535 | 260 | 336 | 22 625 |
| Victoria | | 300 | 222 | 653 | 1 175 |
| Queensland | 41 498 | 6 616 | 408 | 763 | 49 284 |
| South Australia | 68 | 2 677 | 99 | 189 | 3 032 |
| Western Australia | 333 | 43 888 | 2 246 | 124 | 46 591 |
| Tasmania | | 1 247 | 62 | 63 | 1 372 |
| Northern Territory | | 1 455 | 1 448 | 12 | 2 914 |
| Total | 61 392 | 58 717 | 4 745 | 2 139 | 126 993 |

Queensland and WA combine to produce nearly three quarters of the total value of mineral production in Australia, with Queensland producing over two thirds of the total Australian value of fuel minerals (black and brown coal) and WA producing three quarters of the total Australian value of metallic minerals (copper, iron ore, zinc and nickel).

In terms of commodity, over 80 per cent of the total value of commodities produced in NSW and Queensland are from fuel minerals, while over 90 per cent of the total commodity value from WA is generated from metallic mineral production.

## Mining industry employment

It is estimated that the mining industry[14] employed approximately 148 000 people during the 2008-09 financial year, representing 1.5 per cent of total employment in Australia. Table 1 shows the level of employment by jurisdiction, by mining group, for the 2008-09 financial year.

The first part of the table shows the level of employment by jurisdiction and mining industry group, while the second part shows the proportion of employment in each mining industry group from each of

[13] *Mining Commodities by Australian Industry*, ABS Catalogue 8415.0, December 2010.

[14] The 'mining industry' is defined here as ABS Australia and New Zealand Standard Industrial Classification 1993 (ANZSIC), (ABS Catalogue 1292.0), Division B (Mining) excluding ANZSIC group 120: Oil and Gas Extraction.

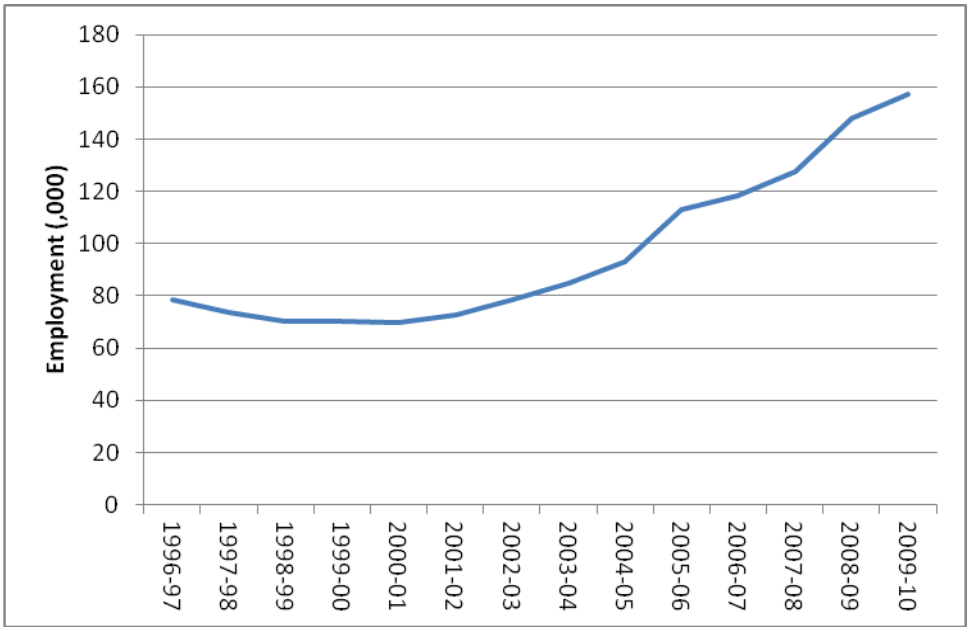
the jurisdictions.

**Table A.4: Mining employment, by jurisdiction, 2009-10[15].**

| Mining industry group | NSW | NT | Qld | SA | Tas | Vic | WA | Total |
|---|---|---|---|---|---|---|---|---|
| Coal mining | 15 136 | 198 | 18 320 | 112 | 11 | 703 | 2123 | 36 603 |
| Metal ore mining | 6466 | 3363 | 8209 | 2334 | 841 | 2329 | 31 713 | 55 255 |
| Construction material mining | 1412 | 47 | 3114 | 1408 | 195 | 1545 | 582 | 8303 |
| Other mining | 1086 | 247 | 1478 | 784 | 173 | 638 | 1870 | 6276 |
| Exploration | 3264 | 763 | 4823 | 3532 | 939 | 2996 | 15 283 | 31 600 |
| Other mining services | 1524 | 201 | 5028 | 35 | 5 | 511 | 2668 | 9972 |
| Total | 28 888 | 4819 | 40 972 | 8205 | 2164 | 8722 | 54 239 | 148 009 |
| Coal mining | 41% | 1% | 50% | 0% | 0% | 2% | 6% | |
| Metal ore mining | 12% | 6% | 15% | 4% | 2% | 4% | 57% | |
| Construction material mining | 17% | 1% | 38% | 17% | 2% | 19% | 7% | |
| Mining n.e.c. | 17% | 4% | 24% | 12% | 3% | 10% | 30% | |
| Exploration | 10% | 2% | 15% | 11% | 3% | 9% | 48% | |
| Other mining services | 15% | 2% | 50% | 0% | 0% | 5% | 27% | |
| Total | 20% | 3% | 28% | 6% | 1% | 6% | 37% | |

Since the 1996-97 financial year, employment in the mining industry has doubled and in particular since 2004-05 employment in the mining industry has grown by 69 per cent. During the same period (2004-05 and 2009-10) total Australian employment has grown by 11 per cent. Chart A.1 shows this growth in employment in the mining industry from 1996-97 to 2009-10.

**Chart A.1: Mining industry employment growth**




[15] ABS estimates of employment by industry, supplied to Safe Work Australia.

## Safety in the mining industry

Occupational injury, illness and deaths have a significant impact on workers, employers and society. Preliminary data indicate that in 2008-09 there were 130 520 serious workers' compensation claims for an injury or illness, which equates to 1.3 per cent of the Australian workforce. It is important to note that, as not all work-related injuries and illness result in workers' compensation claims being made, these figures are likely to understate the true incidence of workplace injury and illness. The Australian Bureau of Statistics (ABS, 2006) found that in 2005-06, 6.4 per cent of workers experienced a work-related injury or illness and approximately 2 per cent reported experiencing a work-related injury or illness resulting in one or more weeks off work.

During the period of mining industry employment growth detailed in Chart A.1 (2004-05 to 2008-09), the number of serious workers' compensation claims in the mining industry has declined by 3 per cent, resulting in a 38 per cent decrease in the incidence of serious claims in the mining industry from the 2004-05 financial year to 2008-09.

NSW recorded the highest incidence rate for mining claims in 2008-09, at a rate of 21.7 claims per 1000 employees, where the 627 claims for NSW in 2008-09 represent 28 per cent of the total claims for the mining industry.

Table A.5 below shows the distribution of claims and incidence rate, by mining industry group and jurisdiction, for the 2008-09 financial year.

**Table A.5 : Serious workers' compensation claims and incidence rates, by jurisdiction 2008-09[16].**

| Mining industry group | NSW | NT | Qld | SA | Tas | Vic | WA | Total |
|---|---|---|---|---|---|---|---|---|
| Coal mining | 454 | 0 | 264 | 1 | 0 | 9 | 22 | 750 |
| Metal ore mining | 60 | 19 | 93 | 26 | 25 | 7 | 359 | 589 |
| Construction material mining | 78 | 1 | 46 | 12 | 9 | 27 | 20 | 193 |
| Mining n.e.c. | 10 | 1 | 14 | 2 | 0 | 1 | 23 | 51 |
| Exploration | 7 | 3 | 87 | 21 | 2 | 10 | 88 | 218 |
| Other mining services | 18 | 4 | 106 | 27 | 1 | 4 | 317 | 477 |
| Total | 627 | 28 | 610 | 89 | 37 | 58 | 829 | 2278 |
| Coal mining | 29.99 | 0.00 | 14.41 | 8.93 | 0.00 | 12.80 | 10.36 | 20.49 |
| Metal ore mining | 9.28 | 5.65 | 11.33 | 11.14 | 29.73 | 3.01 | 11.32 | 10.66 |
| Construction material mining | 55.24 | 21.28 | 14.77 | 8.52 | 46.15 | 17.48 | 34.36 | 23.24 |
| Mining n.e.c. | 9.21 | 4.05 | 9.47 | 2.55 | 0.00 | 1.57 | 12.30 | 8.13 |
| Exploration | 2.14 | 3.93 | 18.04 | 5.95 | 2.13 | 3.34 | 5.76 | 6.90 |
| Other mining services | 11.81 | 19.90 | 21.08 | 771.43 | 200.00 | 7.83 | 118.82 | 47.83 |
| Total | 21.70 | 5.81 | 14.89 | 10.85 | 17.10 | 6.65 | 15.28 | 15.39 |

In the nine years from 2000-01 to 2008-09 there were 96 compensated fatalities recorded in the mining industry, at a rate of 9.8 fatalities per 100 000 employees. This represents approximately 4 per cent of all compensated fatalities for this period. This is compared with the overall rate of fatalities for the same

[16] Safe Work Australia, National Dataset for Compensation Based Statistics (NDS)

period of 3.2 fatalities per 100 000 employees. The highest number of fatalities was recorded for WA, with 40 fatalities during the period at a rate of 10.3 fatalities per 100 000 employees. The mining industry employed 168 800 people in 2008–09, representing 2 per cent of the Australian workforce. Within this industry, 99 per cent of workers were employees and were covered for workers' compensation.

During the period from 2004-05 to 2008-09, an average of 2500 serious worker's compensation claims were made annually as a result of activities in the mining industry. These accepted serious claims for the mining industry resulted in an average of $123 million in direct compensation and an estimated $2.4 billion in total economic costs (covering areas such as lost productivity, health care costs and loss of human capital).

For the jurisdictions covered by this Consultation RIS (SA, NT, Victoria and Tasmania), there are an average of 320 serious claims annually (13 per cent of the Australia total), resulting in $13.3 million annually in direct compensation payments and $260 million in total economic costs. Nearly one third of all claims made are as a result of body stressing, while claims involving mobile plant and transport, non-powered hand-tools, materials and environmental agencies account for over three quarters of all claims.

The following statistics are from Safe Work Australia's workers' compensation claims database.

## Fatalities

From 2000–01 to 2007–08, the number of compensated fatalities in the mining industry ranged between 6 and 18 per annum.

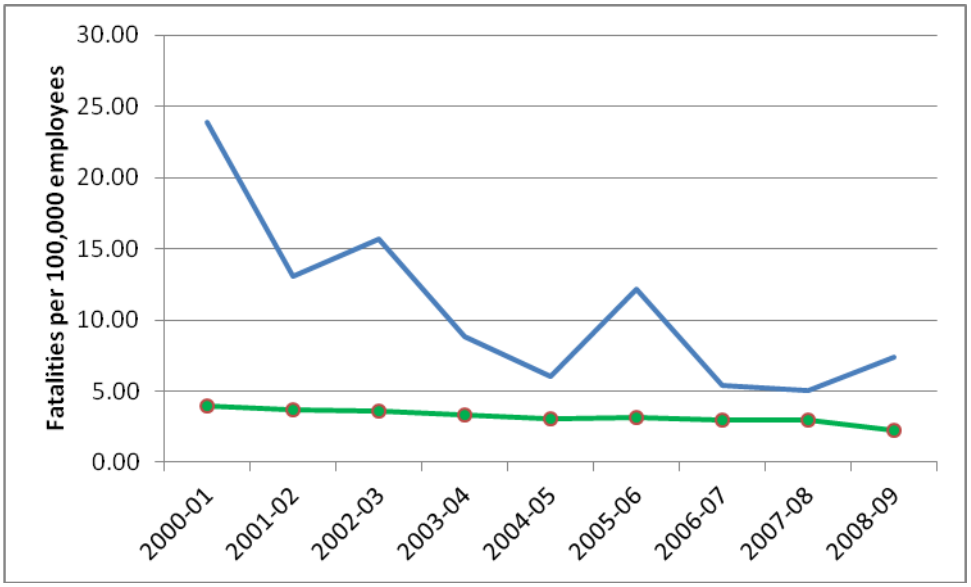
There were 12 fatalities recorded in the preliminary data for 2008–09, a substantial increase from the seven fatalities recorded the previous year (Chart A.2). As a result of this increase the mining industry recorded the third highest fatality rate of 7.4 fatalities per 100 000 employees in 2008–09, which is more than three times the rate of 2.3 for all industries.

Over the past three years the most common causes of fatality in the mining industry were:

- vehicle incidents, accounting for 35 per cent of fatalities, and
- being hit by moving and falling objects, which accounted for 27 per cent of fatalities, with *being hit by moving objects* accounting for 15 per cent and *being hit by falling objects* accounting for 12 per cent.

On an incidence basis the risk of fatalities in mining is more than four times lower than it was in the late 1990s. In 2000-01, there were 23 fatalities per 100 000 workers, compared with only five in 2008-09 (Chart A.3). While fatality rates have been declining in other industries too, in 2000-01 the fatality rate in mining was almost five times the national average (4.8 per 100 000), whereas in 2007-08 it was only around twice as high as the national average (2.4 per 100 000 workers).

**Chart A.2: Fatality incidence rates, mining compared to all industries**




Source: Safe Work Australia.

## Serious claims

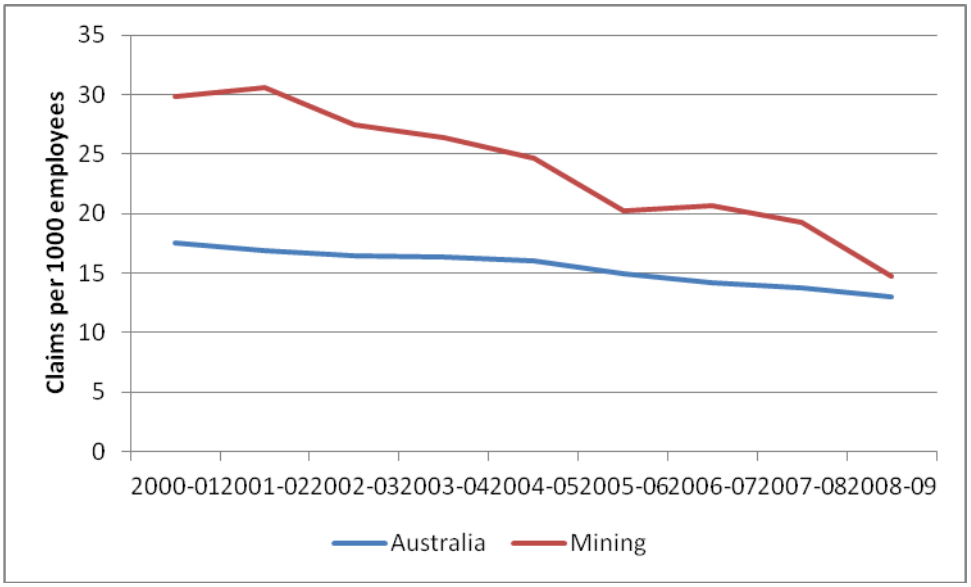
In 2008–09, the mining industry accounted for 2 per cent of all serious workers' compensation claims (2395 claims). This equates to seven employees each day requiring one or more weeks off work because of work-related injury or disease.

The incidence rate of serious claims in the mining industry has fallen 35 per cent, from 30 claims per 1000 employees in 2000–01 to 19 in 2007-08 (Chart A.3), which is still higher than the rate for all industries of 13 claims per 1000 employees in 2008–09. The incidence rate within mining has fallen by 60 per cent over the nine years to 2008-09. In 2000-01 there were 30 serious incidents per 1000 workers, but by 2007-08 there were only 15. While the incidence rate for other industries has also been falling, it has fallen faster in mining. In 2000-01 there were nearly 33 per cent more incidents per 1000 workers in mining as the national average (21). In 2008-09, the mining incidence rate was similar to the national average (14).

The most common causes of compensated injury and disease in the mining industry in 2008–09 were:

- muscular stress (due to manual handling or repetitive movement), which accounted for 33 per cent of claims
- falls, trips and slips of a person, which accounted for 23 per cent of claims, and
- being hit by moving objects, which accounted for 19 per cent of claims.

**Chart A.3: Incidence rate of serious compensated claims**

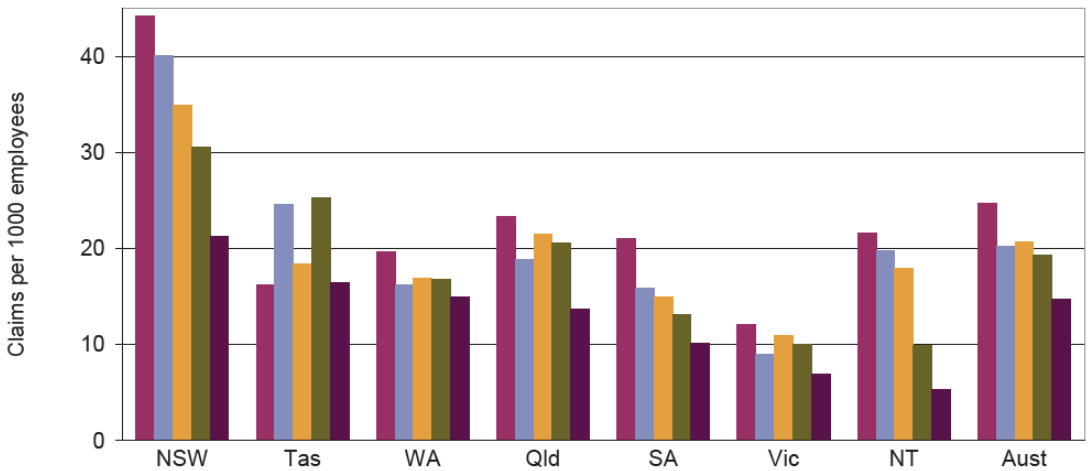



Source: Safe Work Australia.

## Serious claims by jurisdiction

Chart A.4 shows the incidence rates of serious compensated claims in the mining industry across jurisdictions over the past five years.

**Chart A.4: Serious claims: Incidence rates by jurisdiction**




| | NSW | Tas | WA | Qld | SA | Vic | NT | Aust |
|---|---|---|---|---|---|---|---|---|
| 2004-05 | 44.2 | 16.2 | 19.6 | 23.3 | 21.0 | 12.1 | 21.6 | 24.7 |
| 2005-06 | 40.0 | 24.5 | 16.2 | 18.9 | 15.8 | 9.0 | 19.8 | 20.2 |
| 2006-07 | 34.9 | 18.3 | 16.9 | 21.4 | 15.0 | 11.0 | 18.0 | 20.7 |
| 2007-08 | 30.5 | 25.2 | 16.8 | 20.6 | 13.1 | 10.0 | 9.9 | 19.3 |
| 2008-09* | 21.2 | 16.5 | 15.0 | 13.7 | 10.1 | 6.9 | 5.3 | 14.7 |

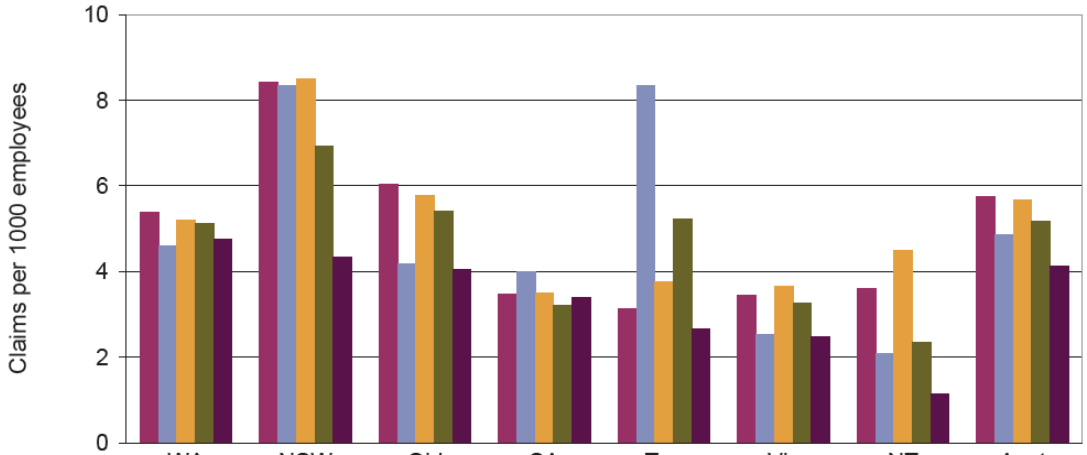
*Data for 2008–09 are preliminary and are subject to change.
Source: Safe Work Australia

In 2008–09, incidence rates ranged from 5 claims per 1 000 employees in the NT to 21 claims per 1000 employees in NSW. Between 2004–05 and 2007–08, all jurisdictions recorded decreases in incidence rates, with the exception of Tasmania which recorded a substantial 55 per cent increase. The largest decreases were recorded in the NT (54 per cent), SA (38 per cent) and NSW (31 per cent). Some of the differences between jurisdictions is due to the different types of mining undertaken in each jurisdiction and hence jurisdictional comparison should be undertaken with caution.

## Claims involving 12 or more weeks time lost by jurisdiction

In 2008–09, 28 per cent of serious claims involved 12 or more weeks off work. Chart A.5 shows the incidence rates of compensated claims involving 12 or more weeks off work in the Mining industry over the past five years by jurisdiction. In 2008–09, incidence rates ranged from 1 claim per 1000 employees in the NT to five claims per 1000 employees in WA. Between 2004–05 and 2007–08, almost all jurisdictions recorded decreases in incidence rates, with the largest recorded by the NT (35 per cent) and NSW (18 per cent), while Tasmania recorded an increase of 66 per cent.

**Chart A.5: Claims involving 12 or more weeks off work: Incidence rates by jurisdiction**



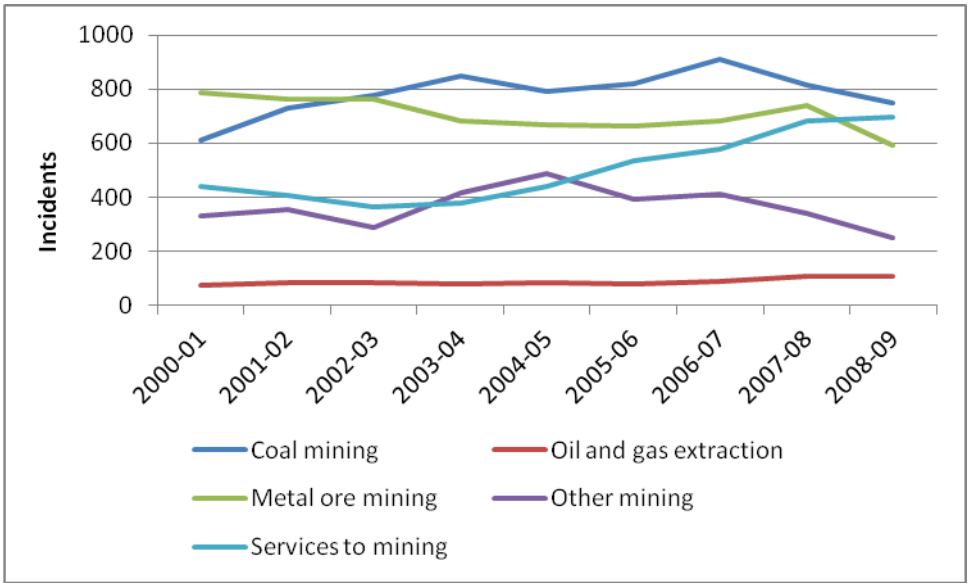

| | WA | NSW | Qld | SA | Tas | Vic | NT | Aust |
|---|---|---|---|---|---|---|---|---|
| 2004-05 | 5.4 | 8.4 | 6.0 | 3.5 | 3.1 | 3.4 | 3.6 | 5.8 |
| 2005-06 | 4.6 | 8.3 | 4.2 | 4.0 | 8.3 | 2.5 | 2.1 | 4.9 |
| 2006-07 | 5.2 | 8.5 | 5.8 | 3.5 | 3.8 | 3.7 | 4.5 | 5.7 |
| 2007-08 | 5.1 | 6.9 | 5.4 | 3.2 | 5.2 | 3.3 | 2.3 | 5.2 |
| 2008-09* | 4.7 | 4.3 | 4.0 | 3.4 | 2.7 | 2.5 | 1.1 | 4.1 |

*Data for 2008–09 are preliminary and are subject to change.
Source: Safe Work Australia

## Trend by industry

While the coal mining industry's record is improving, it still remains the most dangerous sector, as shown in Chart A.6.

**Chart A.6: Mining incidents by sub industry, 2000-01 to 2008-09**




Source: Safe Work Australia

# Appendix B: History of mine safety harmonisation in Australia

In 2000, the Mine Safety Taskforce of the Conference of Chief Inspectors of Mines produced a discussion document entitled *Realising a Safe and Healthy Mining Industry – the contribution of government.* In March 2002, this document was endorsed by the MCMPR and became known as the NMSF. The NMSF was initially developed by the Conference of Chief Inspectors of Mines, a subcommittee of the MCMPR.

In 2005, the MCMPR established a tripartite Steering Group charged with the task of developing and implementing the NMSF. The Steering Group, chaired by the Hon. Clive Brown, former WA Minister for Trade and State Development, comprises representatives from the following organisations:

- Department of Employment, Economic Development & Innovation, Queensland
- Department of Primary Industries and Resources, South Australia
- SafeWork SA
- Industry & Investment, New South Wales
- Department of Mines and Petroleum, Western Australia
- Department of Resources, Energy and Tourism, Australian Government
- Department of Primary Industries, Victoria
- WorkSafe Victoria
- Department of Primary Industry, Fisheries and Mines, Northern Territory
- Northern Territory WorkSafe
- Workplace Standards, Tasmania
- Minerals Council of Australia
- NSW Minerals Council
- Chamber of Minerals and Energy, Western Australia
- Queensland Resources Council
- Cement, Concrete and Aggregates Australia
- Australian Workers Union
- Construction, Forestry, Mining and Energy Union, and
- Australian Council of Trade Unions.

In 2008, the National Review into Model Occupational Health and Safety Laws began, and COAG formalised its commitment to the harmonisation of work health and safety legislation. In 2009, MCMPR and COAG endorsed the Implementation Report for the NMSF for this purpose.

In June 2010, NMSF Drafting Instructions were provided to Safe Work Australia for incorporation into model WHS Regulations. These Drafting Instructions are also to be used for incorporation into relevant jurisdictional mine safety legislation and/or regulations. The development of a National Mine Safety Database will be finalised with the inputting of data into this database from July 2012. It is expected that the NMSF Legislative Framework will be implemented by 1 January 2012.

## The National Mine Safety Framework

The NMSF provides seven strategies to deliver a nationally consistent health and safety regime in the Australian mining industry.

- Strategy 1 - A nationally consistent legislative framework that protects the safety and health of mine employees and persons affected by mining operations, consisting of 42 overarching legislative principles.
- Strategy 2 - Competency support to promote continuous skills development and consistent levels of competency nationwide, for both the regulator and industry.
- Strategy 3 - Compliance support to develop a national approach to providing advisory information to duty holders to assist them in achieving compliance.
- Strategy 4 - A nationally coordinated protocol on enforcement to develop a nationally consistent and transparent approach to enforcement that provides clear and consistent standards for duty holders, and provides equitable outcomes from governments' contributions to safety and health in the mining industry. Elements include:
    - National Enforcement Principles
    - Enforcement Tools
    - National Enforcement Implementation Guidelines
    - Audit mechanism to ensure consistency between jurisdictions, and
    - Mechanisms to drive consistency in practice.
- Strategy 5 - Consistent and reliable data collection and analysis to develop a national mining industry data set and database to facilitate consistent collection and analysis of data across jurisdictions.
- Strategy 6 - Effective consultation mechanisms to establish an effective approach to consultation with stakeholders and between jurisdictions on safety and health in the mining industry, at both the workplace and state/territory levels.
- Strategy 7 - A collaborative approach to research to establish appropriate mechanisms for governments to foster and utilise effective research into occupational health and safety in the mining industry.

The principal objective is consistent regulation of mine safety across all jurisdictions. Currently, the legislation across the jurisdictions is not consistent. A consistent regulatory framework is essential for efficient, effective and equitable regulation. It must also ensure no diminution in safety and lead to improved safety outcomes (Principle 1 of the Legislative Framework of the NMSF Implementation Report).

Principles 1, 2 and 3 of the Legislative Framework give broad indications of the overarching principles and the objectives for the mine safety regulations. As well as consistency in regulation, the objectives include:

- clear and enforceable legislation
- effective risk management and health and safety management systems and implementation
- continuous improvement
- focus on prevention
- identification and control of all hazards, and
- effective consultation.

# Appendix C: Literature review

## Productivity Commission 2010

The Productivity Commission received a request on 24 October 2008 from the Government to commence the Performance Benchmarking of Australian Business Regulation with the agreement by the COAG Business Competition and Regulation Working Group that the Commission should benchmark work health and safety regulation. This study was broader in scope than mining regulations but included various aspects of these regulations in it. The study was released on 6 April 2010.

The two main aspects of mining in the report related to the accountability of regulators and the duplication from regulatory systems. These reviews were not of the 'core' regulations but on the non-core regulations that NSW, Queensland and WA follow in the current multi-state framework. These three core jurisdictions were found to have similar levels of transparency and accountability with some exceptions, for example the mining regulator in NSW provides more information on its written notices than the other mining regulators. Queensland and WA mining regulations can duplicate the general work health and safety regulatory requirements, whilst the NSW regulations do not strictly create duplication as it is meant to supplement and clarify the existing work health and safety legislation. The WA system was found to create the highest regulatory burden as it is least reliant on performance and more so on processes. Consistency between enforcement practices and risk management can be variable as is the use of enforcement tools and compliance strategies amongst the various regulators, but business commonly reported it is often the differences in knowledge, experience and approach of the individual inspector which had the greatest impact on the enforcement approach at any given worksite. Enforcement constraints amongst regulators were variable, with regulators who could not enforce adequately citing budget and staffing constraints. In matters of appeals under mining-specific work health and safety regulation the appeal process was similar across the jurisdictions but the use of written notices was different.

The legal setup of the mining and general work health and safety Acts should in theory prevent any potential inconsistent regulation to apply at any given mine site yet the existence of separate Acts and regulations may create confusion in interpretation, implementation and enforcement, increasing administration and compliance costs for both regulators and businesses. There is evidence of a blurring of the demarcation lines and duplication of enforcement by regulators (i.e. general work health and safety for construction, mining for 'mining' activities).

It was found that NSW and Tasmania had a high risk of work-related injury related to mining (high claim rates), though this may be partly related to the risks inherent in with underground mining as opposed to open cut mining that is prevalent in the NSW jurisdiction. In most jurisdictions claim rates in mining fell, except for Tasmania where it increased, WA was minor and the ACT does not have mines. The Commission was unable to attribute causation for differences in serious claim rates across jurisdictions due to confidentiality and accuracy concerns.

## National Mine Safety Framework Implementation Report

The NMSF is an initiative of the MCMPR. MCMPR established a tripartite Steering Group in November 2005 to guide the development of a common strategised framework. This was completed in October 2008, endorsed by the MCMPR on 28 October 2008 and by COAG on 30 April 2009. During this development of the NMSF it became clear that a nationally consistent work health and safety regulation

was going to be introduced and the NMSF accommodated the report to be able to fit in with these broader work health and safety reforms. The implementation of the NMSF will realise the goal of a nationally consistent work health and safety regime in the Australian mining industry.

The NMSF Implementation Report outlined the key tasks required to deliver the seven identified NMSF strategies, including 42 broad legislative principles to deliver a nationally consistent health and safety regime in the Australian mining industry whilst allowing flexibility within individual jurisdictions to deal with issues specific to individual mines.

## National review into model OHS laws

The first report was completed in October 2008 and the second in January 2009 for WRMC. The second report addressed clause 13 of the terms of reference for the National Review of Model OHS Laws and provides various opinions by government, industry, unions, academic and legal practitioners on the scope of the model regulations in regards to mining.

Reference was made to the 2003 Laing Review of WA mine safety which found no logical or sensible reason for having different standards or arrangements between industries. The Queensland Government supported the view of a general OHS law and that where needed industry-specific legislation should, where possible, be formulated nationally and consistently adopted by each jurisdiction (citing the approached proposed by NMSF). SA, Tasmania and Victoria supported this opinion. Academic and legal opinions given were of a similar viewpoint. The ACTU and the Construction, Forestry, Mining and Energy Union of NSW supported similar viewpoints also citing the NMSF.

Industry (Australian Mines and Metals Association, Minerals Council of Australia, NSW Minerals Council, the Chamber of Minerals and Energy of WA) gave the view that the mining industry would benefit from a model OHS Act that could be applied nationally, removing the duplication, complexity, cost, inconsistent application of prosecution and uncertainty experienced by multiple jurisdiction companies. This would decrease administrative burdens, increase efficiency and improve safety and health performance. Where there was need for industry-specific OHS legislation (i.e. for a particular hazard), consistent legislation with the general Act should be enacted. The NMSF was once again cited as needing to be maintained to address industry-specific harmonisation.

The broader recommendation by the national review to the Ministers was that a recommendation should be made to COAG that separate and specific OHS laws for particular hazards or high-risk industries should only continue where they have been objectively justified, that the separate legislation should be consistent with the nationally harmonised OHS laws and that there should be ongoing legislative and administrative inter-relationship between the laws and regulators.

# Appendix D: Survey

## Costs and Benefits of National Workplace Health and Safety Reforms – Mining

### 1. About the survey

**Error! Hyperlink reference not valid.**

## 2. About your business

We would like to begin by asking some questions about your business.

If you are a multinational company, could you please only include Australian operations in your answers.

1. **Please identify the sectors of the mining industry in which your business operates.** (tick all that apply)

- ☐ Coal Mining
- ☐ Metal Ore Mining
- ☐ Non-Metallic Mineral Mining and Quarrying
- ☐ Exploration and Other Mining Support Services

2. **In which of the following states and territories do you currently operate?** (tick all that apply)

- ☐ New South Wales
- ☐ Victoria
- ☐ Queensland
- ☐ South Australia
- ☐ Western Australia
- ☐ Tasmania
- ☐ Northern Territory
- ☐ Australian Capital Territory

3. **How many mine sites did your business operate in Australia on 30 June 2011?**

4. **Approximately how many persons were working for your business during the last pay period ending on 30 June 2011?** (Include casual and part-time workers, but not contractors).

5. **Approximately how many persons were working for contractors of your business during the last pay period ending on 30 June 2011?**

6. **For the financial year 2010/11 what was your approximate total income? ($)**

7. **For the financial year 2010/11 what was your total work health and safety budget? ($)**

8. **Approximately what percentage of your total current work health and safety budget is spent on the following areas?**

a. Identification, assessment, control and review of risks

b. Work health and safety management system

c. Principal mining hazard management plan

d. Management of alcohol, drugs and work fatigue

e. Health monitoring

9. **How many work health and safety staff (Full Time Equivalent) did your business have during the last pay period ending on 30 June 2011?**

10. **The proposed regulations will require mine operators to consult with workers and Health and Safety Representatives on work health and safety matters. How many days do you think this would require per year?**

Work health and safety staff (days)

Management staff (days)

Other staff (days)

11. **What do you estimate to be the cost to your business to implement the proposed work health and safety regulations for mining? ($)**

12. **Following implementation, what do you estimate the ongoing costs of work health and safety to your business will be in the 2012/13 financial year? ($)**

## 3. Managing Risks

This section examines perceived business impacts that will follow from the proposed work health and safety regulations for mining. It is expected all states and territories will experience some changes to current practices. Some of the changes may be substantial.

The changes may involve ongoing costs to comply with the proposed work health and safety requirements ("compliance costs"). These changes may lead to long term health and safety benefits ("safety benefits") such as reduced accidents, lower fines, smaller premiums and greater productivity. In our impact analysis, when estimating cost and benefits, we are considering the time once the changes

are fully implemented (say 5-10 years), for any such safety benefits to be realised. Please adopt this timeframe in responding to the questions.

1. **Identification, assessment, control and review of risks**
The mine operator must, so far as reasonably practicable, identify all risks, assess and minimise risks to health and safety, control and review risks.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

2. **Requirements for the work health and safety management system**
The mine operator must establish a comprehensive management system of for all aspects of risk control in relation to the mine to ensure health and safety.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

3. **Do you currently have a work health and safety management system in place?**

○ yes

○ no

4. **Principal mining hazard management plan requirements**

The mine operator must prepare a defined management plan in relation to principal mining hazards identified. Risk assessment must occur in line with the plan and the plan must be reviewed and revised as necessary.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

5. **Communication**

The mine operator must ensure that a system is provided that requires outgoing shift supervisors to report work health and safety matters to the supervisor of the incoming shift.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

6. **Progress of workings**

The mine operator must ensure adequate steps are taken for work health and safety regarding inrush hazards, underground workings and other inspections.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

7. **Shafts and winding**

The mine operator must ensure that every winding system at the mine meets the specified requirements in the proposed regulations.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

8. **Movement of mobile plant**

The mine operator must consider issues such as the design and construction of roads and interactions between pedestrians and mobile plant.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

9. **Dust explosion in an underground mine**

The mine operator must minimise the risks and associated risks of a dust explosion occurring in an underground mine with specified control measures which must be implemented.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

10. **Air and ventilation requirements**

The mine operator must ensure that air monitoring, oxygen level, temperature and moisture levels, atmospheric hazards and ventilation at the mine meet the specified requirements in the proposed regulations.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

11. **Signs and Notice to Workers and Others**

The mine operator must notify the affected persons, if the air monitoring shows results that are higher than those specified in the regulations.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

12. **Prohibited uses**

The mine operator must ensure that items of plant or substances specified in the regulation schedule are not used in a place or for a purpose that is prohibited under that schedule.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

13. **Closure, suspension or abandonment of mine**

The mine operator or mine holder must ensure, in the closure/suspension of a mine, that the mine is safe and secure.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

14. **What would be the anticipated change in costs for your mining operations of the proposed requirements in relation to mine closure?** (Ranges are acceptable e.g. $5000 - $10 000)

15. **Emergency planning**

The mine operator must prepare and implement an emergency plan, including provision of emergency equipment and escapes, and consult with the emergency services that would be used if required.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

16. **Information, training and instruction**

The mine operator must ensure that adequate and relevant information is provided to both workers and visitors, that relevant training is given to workers and updated courses are given when needed. Records of training are to be kept.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

17. **Management of alcohol, drugs and worker fatigue**

The mine operator must ensure adequate strategies are used for the health and safety of workers regarding fatigue. The mine operator must also ensure that any person affected by alcohol or drugs do not enter the mine, and must manage any risks on the mine site from the use of alcohol or drugs.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

18. **Health monitoring requirements**

The mine operator must ensure that, when a worker is exposed to a risk, health monitoring is carried out and supervised by a registered medical practitioner with relevant competencies. The health monitoring must be recorded and a summary given to the worker and the regulator as soon as practicable.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

19. **Consultation and workers' safety role**

The mine operator must, in consultation with workers, implement a safety role for workers that allows them to contribute to the identification of hazards and risk control measures.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

20. **Mine survey plan**

The mine operator must ensure that survey plans are prepared, reviewed, revised, and readily available for inspection by workers.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

21. **Incident notification**

The mine operator must ensure high potential incidents (including dangerous incidents) are notified to the regulator, even if no one was in the vicinity at the time.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

22. **Mine record**

The mine operator will be required to keep a mine record as specified in the proposed regulations.

What impact will this have on compliance costs and safety benefits for your business over current practice?

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Compliance costs | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Safety benefits | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Comments?

23. **Are there any other requirements in the proposed work health and safety regulations for mining that would require changes to the way you manage risks that may have a significant effect on your business and that are not covered above?** (If yes, please explain)

## 4. Training and Education

1. **In the financial year 2010-11 approximately how much did your business spend on staff training related to the current mining work health and safety regulations?** (Ranges are acceptable e.g. $5000-$10 000). Note: if 2010-11 was not a typical year, please enter what you would generally expect to spend in one year.

External training programs

Internal training programs

2. **Please provide an estimate of the cost to your business for training workers on the proposed work health and safety regulations for mining?** (Ranges are acceptable e.g. $5000 - $10 000). (Costs should reflect both training costs and time away from work.)

3. **What ongoing change in training costs and safety benefits do you expect from the proposed work health and safety regulations for mining?**

| | Significant increase (5% or more) | Minor increase (less than 5%) | No change | Minor decrease(by less than 5%) | Significant decrease (by 5% or more) | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Training costs | | | | | | | |
| Safety benefits | | | | | | | |

Comments?

4. **Please provide any other comments regarding training and education**.

## 5. Overall impact

1. **What effect will the introduction across Australia of the proposed work health and safety regulations for mining have on your business?**

| | Significantly better | Minor benefit | No change | Slightly worse | Significantly worse | Don't know | Not applicable |
|---|---|---|---|---|---|---|---|
| Understanding of legal requirements | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Compliance | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Productivity | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Health and safety | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Business opportunities | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

## 6. Further Comments

Thank you for taking the time to complete this survey.

1. **You are welcome to make any further comments here**

2. **Please supply the following details about your company**.

This information is optional and will only be used by Deloitte Access Economics to follow up with you to clarify any responses given. This information will not be used for any other purpose or provided to any other organisation.

| | |
|---|---|
| **Contact person who completed this survey:** | |
| **Company:** | |
| **Email Address:** | |
| **Phone Number:** | |

3. **Is your business a member of a mining related industry association?**

- Yes
- No

# Appendix E: Consultation notes

A summary of the questions asked during initial consultation with stakeholders is provided below:

1. What changes do you see as being most significant in terms of regulatory burden for mine operators?
2. What changes do you see, if any, as having significant impacts on the safety of mine workers?
3. What impact will harmonisation have on regulators?
4. Do you see the overall regulatory burden increasing or decreasing for companies that only operate in your jurisdiction?
5. What do you dislike about the new regulations?
6. Is there anything you like about them?
7. Do you think the regulations get the balance right between matters that are tightly prescribed and matters where mine operators can determine the best way to meet required safety outcomes?
8. Should some matters be moved from regulations to codes – or vice versa?
9. Is there anything that is really unclear?
10. Do you think there are there are gaps in the regulations (for example, should some non-core regulations become core regulations)?
11. Are there any unnecessary overlaps with general work health and safety regulations?
12. Any further comments?

Consultations invitations were sent to and responded by:

Safe Work SA, NT WorkSafe, WorkSafe Victoria, Workplace Standards Tasmania, ACT Work Safety Policy and the Commonwealth OHS Act Team (Comcare).

Consultation invitations were sent but declined or not responded to by:

Australian Council of Trade Unions, Australian Chamber of Commerce and Industry and Australian Industry Group.

# Appendix F: Prohibited items schedule

Note: Other items or substances may be prohibited absolutely or for particular uses under a work health and safety management system. This schedule should be read together with the other requirements of the model WHS Act and model WHS Regulations. It does not limit the requirements specified elsewhere for example requirements relating to methane.

**A) All mines - including underground mines**

| Column 1—Item | Column 2—Prohibited use |
|---|---|
| Ignition sources<br>For example—cigarettes, matches, lighters, naked flame, naked light | While carrying, handling or using any explosive or initiating system and within 8 metres of any explosive or initiating system<br>At a mine or work area at a mine where there is or is likely to be a risk to health and safety from:<br>—contaminants including airborne gases, vapours and dusts that may cause injury from fire or explosion<br>Example: flammable gases or industrial solvents with a low flashpoint<br>In a shaft conveyance<br>In a refuge chamber during an emergency |
| Items containing uncoated or unprotected aluminium or light metal alloys | In an area of the mine where the atmosphere contains more than 1.25% methane |
| Explosives, detonators and exploders | All uses at the mine—unless designed for shotfiring |
| Firearms | All uses at the mine |

**B) Underground mines**

| Column 1—Item | Column 2—Prohibited uses in underground mines or specified underground mines |
|---|---|
| Internal combustion engine (other than a compression ignition engine) | All uses underground |
| Unlicensed polymeric chemical products—in jurisdictions that license these products | All uses underground |
| Compressed natural gas | In an internal or external combustion engine underground |
| Hydrogen | In an internal or external combustion engine underground |

| | |
|---|---|
| Liquid petroleum gas | In an internal or external combustion engine underground |
| Petrol and Fuel | In an internal or external combustion engine underground unless the engine is designed for use underground |
| Ignition sources<br><br>For example—cigarettes, matches, lighters, naked flame, naked light | [*Comment sought*] |
| Items containing uncoated or unprotected aluminium or light metal alloys | In an underground coal mine—anywhere on the inbye side of:<br><br>—the first cut-through outbye, a longwall face or the last line of open cut-throughs in a panel, or<br><br>—a distance of 100 metres outbye, a longwall face or last line of open cut-throughs in a panel, whichever is the larger area<br><br>In an area of the mine where the atmosphere contains more than 1.25% methane |
| Non-fire resistant and antistatic products | In an underground coal mine—all uses underground |
| Explosives, detonators and exploders | All uses at the mine—unless designed for shotfiring |
| Firearms | All uses at the mine |

# Appendix G: Content for national data set

**A) INCIDENT REPORTING**

A mine operator would be required to provide the following prescribed information as appropriate in relation to an incident:

| |
|---|
| names of the mine holder, mine operator, employer of injured person, if the person is self-employed, the name of the person's business or undertaking |
| the main industry of the person's employer |
| the location of the mine |
| *An indication of whether the incident has resulted, or is likely to result in:*<br>• a fatality, permanent incapacity, lost-time injury, restricted or alternative duties, medical treatment, or the potential for fatality, permanent incapacity, a lost-time injury or medical treatment. |
| *If an injury or 'occupational disease' has occurred:*<br>• the name of the person or persons injured<br>• the gender of each injured person<br>• the date of birth of each injured person<br>• the injured person or persons shift start time, shift finish time, and number of hours worked prior to the incident<br>• the person or persons' occupation<br>• the date of the incident or the date on which the occurrence of the occupational disease was first reported to the mine operator<br>• the time at which the incident occurred<br>• a description of the incident or the circumstance leading to the occupational disease which details:<br>  ○ what the injured person or persons were doing at the time of the disease exposure or just before the occurrence of the incident<br>  ○ a description of any particular substance, product, process or equipment involved in the incident<br>  ○ how the injury was sustained<br>• a classification of:<br>  ○ the mechanism of the incident and the agency of the injury<br>  ○ the bodily location of the injury or disease<br>  ○ the nature of the injury or disease, and<br>• the employment arrangements of the person or persons at the time of the incident. |

**B) QUARTERLY REPORTING**

A mine operator would be required to report on the following on a quarterly basis:

| |
|---|
| • the commodity produced at the mine |
| • the number of people who worked at the mine in the period |
| • the total number of hours worked at the mine in the period |
| For each incident at the mine during the period which resulted in a fatality, lost time, medical treatment or restricted duties:<br>• the total number of days lost from work as a result of an incident during the period<br>• the total number of days spent on restricted duties in the period<br>• the total number of incidents during the period which occurred that resulted in lost time or an inability of a person to work for a day or longer<br>• the number of persons who were placed on restricted duties as a result of an incident during the period<br>• the number of medical treatment injuries in the period which did not result in a lost time injury, and<br>the number of fatalities that occurred in the period. |

**C) DEFINITIONS**

**Individual's employer**

*Definition.* The name of the organisation that directly employs the injured worker/s.

*Purpose.* To identify the organisation that directly employs the injured worker. This may be the mine operator, or it may be a (sub)contractor, or labour hire suppliers.

**Industry of the employer**

*Definition.* The main activity of the employer at the mine site where the incident occurred.

*Purpose.* To enable comparison of aggregate data within specific sectors of the industry.

**Location**

*Definition.* The name and physical address of the mine site where the incident occurred.

*Purpose.* To enable identification of the geographic location of injury/disease occurrences.

**Severity indicator**

*Definition.* Identification of the incident as either a fatality, lost-time injury, medical treatment injury or high potential incident.

*Purpose.* To enable identification of the category of incident for comparison of aggregate data.

*Classification/coding.* Fatality, permanent incapacity, lost-time injury, medical treatment injury high potential incident.

**Name of injured worker**

**Gender**

*Definition.* The gender of the worker.

*Purpose.* To facilitate analysis of injury and disease experience by gender.

**Date of birth**

*Definition.* The date of birth of the worker.

*Purpose.* To enable analysis of occurrences by age to determine any links between types of occurrences and specific age groups. To assist in the unique identification of workers.

*Classification/coding.* To be recorded in day, month, year format.

**Working and Travel Hours**

*Definition.* The worker's shift start time, shift finish time, and number of hours worked in their roster prior to the time of the incident.

*Purpose.* To identify any possible links between specific types of shift arrangements and injury/disease experience so that preventive action can be targeted more effectively.

**Occupation**

*Definition.* The worker's occupation at the time of the injury or reporting of the disease.

*Purpose.* To identify the occupation of injured workers, allowing analysis of occupationally related injury/disease experience. To assist in targeting high-risk occupation groups for priority prevention activity and to enable the comparison of employers' experiences with aggregate statistics.

**Date of injury occurrence or report of disease**

*Definition.* The date of the injury occurrence or the date the disease was first reported.

*Purpose.* To enable comparison of data over time, to monitor performance and to indicate seasonal trends.

*Classification/coding.* To be recorded in day, month, year format.

**Time of occurrence**

*Definition.* The time of the injury occurrence. Not relevant for disease occurrences.

*Purpose.* To enable analysis of occurrence by time of day.

**Place on mine site where incident occurred**

*Definition.* Identification of where the injury occurrence or disease exposure occurred.

*Purpose.* To enable analysis by place on mine site, and identify links between other factors such as bodily location of injury or disease.

**Description of occurrence**

*Definition.* Description of the processes and circumstances leading to the injury/disease occurrence.

*Purpose.* Fundamental to identifying the nature of the occurrence.

**Bodily location of injury or disease**

*Definition.* The bodily location of the most serious original injury or part of the body affected by disease.

*Purpose.* To enable analysis of injuries or diseases affecting specific bodily locations to assist in the development of programs to counteract such injuries, for example, eye injuries via an eye protection program. To enable a more detailed analysis of the nature of the work injury/disease.

**Nature of injury or disease**

*Definition.* The most serious injury or disease sustained or suffered by the worker.

*Purpose.* To provide additional information essential to the assessment of each injury or disease occurrence for use in determining corrective action and rehabilitation requirements and in monitoring the employer's injury and disease experience.

**Employment arrangements**

*Definition.* The employment arrangements of the worker at the time of the injury occurrence or reporting of the disease.

*Purpose.* To identify any possible links between employment arrangements and injury and disease experience so that preventive action, in particular the development of training programs, can be targeted more effectively.

**Quarterly Statistics**

**Commodity Processed**

*Definition.* The primary commodity produced at the mine site where the injury occurred or disease identified.

*Purpose.* To identify any possible links between commodity processed and injury and disease experience so that preventative action can be targeted more effectively.

**Number of employees**

*Definition.* The average number of workers who worked in the recording unit during the recording period.

*Purpose.* To enable the calculation of incidence rates for the recording unit, for identifying high risk groups and for monitoring the success of preventive strategies over time.

**Number of hours worked**

*Definition.* The total number of hours worked by employees in the recording unit during the recording period.

*Purpose.* To enable the calculation of frequency rates for the recording unit and the enterprise as a whole, for identifying high risk groups and for monitoring the success of preventive strategies over time.

*Classification/coding* Employees, contractors.

**Number of incidents**

*Definition.* The total number of incidents (including lost time injuries, medical treatment injuries, restricted duties injuries and high potential incidents) recorded in the reporting period.

*Purpose.* To enable the calculation of incidence rates for the recording period.

**Number of lost time injuries**

*Definition.* Total number of injuries/disease occurrences that resulted in lost time, i.e. the inability to work the next day or longer (whether they are rostered on or not).

*Purpose.* To enable the calculation of lost time rates for the recording period.

**Days lost from work**

*Definition.* The total number of days lost from work as a result of the injuries/disease.

*Purpose.* To provide an indication of the severity of lost-time injuries and diseases in terms of lost working time and to enable the calculation of average time lost rates.

**Number of restricted duties injuries (employee/contractor)**

*Definition.* Total number of injuries/disease occurrences that resulted in restricted duties.

*Purpose.* To enable the calculation of incidence rates for the recording period.

**Number of days on restricted duties**

*Definition.* The total number of days where employees/contractors have to work on restricted duties.

*Purpose.* To enable the calculation of incidence rates for the recording period.

**Number of medical treatment injuries**

*Definition.* An MTI is a work-related injury resulting in the management and care of a patient, which does not result in lost time or restricted work.

An MTI includes suturing of any wound, treatment of fractures, treatment of bruises by drainage of blood, treatment of second and third degree burns.

MTIs do not include:

- visits to physicians or other licensed health care professionals for observation or counselling*
- conduct of diagnostic procedures, such as X-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes (e.g. eye drops to dilate pupils)
- visits to physicians or other licensed health care professionals solely for therapy as a preventative measure (e.g. physiotherapy, massage, tetanus or flu shots)
- first aid injuries

[* This is intended to refer to diagnostic counselling, used to determine if treatment is required. If treatment is given, or further treatment is required, then it is considered an MTI]

*Purpose.* To enable the calculation of incidence rates for the recording period.

**Fatalities**

*Definition.* Total number of fatalities that occurred as a result of an injury or disease occurrence.

*Purpose.* To identify number of fatalities.

# Appendix H: References

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