Queensland's Mine Safety Framework

Consultation Regulatory Impact Statement

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The National Mine Safety Framework (NMSF) started as an initiative of the Conference of Chief Inspectors of Mines to establish a more nationally consistent mining safety and health regulatory framework. This initiative of the Conference of Chief Inspectors was later endorsed by the Council of Australian Governments (COAG) as the medium through which greater consistency of mine safety legislation and regulation would continue to be developed. For Queensland, the focus has been on the 'non-core' NMSF for the major mining states of Queensland, New South Wales and Western Australia, as well as responding to any current Queensland based issues.

The non-core NMSF process will achieve more consistency in significant key areas across the major mining states, rather than uniformity of wording and structure of the Acts and Regulations due to the different legislative models to be used by each of the non-core states. The major mining states of Queensland, New South Wales and Western Australia require more extensive and flexible laws than the other states and territories. This is to address the broader range of mining operations in these three states which range from small gemstone mines to large, complex mining operations including underground coal mines. Consequently, these states have developed 'non-core' NMSF provisions additional to the 'core' provisions for all jurisdictions. This will ensure safety and health standards are maintained or, where possible, improved during the process of achieving greater consistency.

The Queensland Government position in enacting COAG national legislation and regulation is that Queensland must not be disadvantaged in any way through direct or indirect costs, standards of safety or service delivery, quality of training or outcomes for Queenslanders. Further, Queensland must agree with any proposed national legislation as an improvement to current standards or outcomes and benefit from its adoption.

The Model Work Health and Safety Act (the Model Act) was finalised in 2009 by SafeWork Australia so that it could form the basis of the work health and safety Acts to be enacted across Australia by state parliaments to harmonise work health and safety legislation for general workplaces. In Queensland, most of the Model Act provisions have been implemented for general workplaces, from 1 January 2012 as the *Work Health and Safety Act 2011.*

From 2011, the Commonwealth Government also encouraged the states and territories to use the Model Act as the basis for mine safety and health legislation even though the major mining states historically have had mining specific legislation due to the unique hazards of mining. In 2011, SafeWork Australia developed Model Work Health and Safety Regulations (the Model Regulations) which were to include a dedicated chapter for mines or 'core' mines Regulations. The Model Act and Model Regulations, thus became an option for adoption through the NMSF. Most of the work on the core mine Regulations was completed by the end of 2012. However, the core mines Regulations have not been endorsed by all jurisdictions.

Core mine Regulations are not sufficient to maintain current standards for Queensland, New South Wales and Western Australia. As a result non-core provisions additional to the core provisions were developed by Queensland, New South Wales and Western Australia.

Options

The Department of Natural Resources and Mines (DNRM) has considered the following four options to improve mining safety and health and develop greater regulatory consistency with other states:

Option 1 - Retain Queensland's two mine safety and health Acts - Coal Mining Safety and Health Act 1999 (CMSHA) and Mining and Quarrying Safety and Health Act 1999 (MQSHA) - for the coal and metalliferous sectors, plus amendments based on provisions from the Model Act and core or non-core NMSF that improve safety and health and consistency.

Option 2 - Build a new single Act by combining Queensland's two mine safety and health Acts into one piece of legislation covering both coal and metalliferous sectors, plus amendments based on provisions from the Model Act, core or non-core NMSF that improve safety and health and consistency.

Option 3 - Develop mine safety legislation primarily based on the Model Act, and core or non-core NMSF provisions that improve safety and health and consistency.

Option 4 – Do nothing/maintain status quo. Retain Queensland's two mine safety and health Acts, excluding amendments based on provisions from the Model Act and core or non-core NMSF that improve safety and health and consistency.

This regulatory impact statement (RIS) will focus on Option 1 and Option 3. Option 2 is not being considered in detail as it embodies the same benefits as Option 1. The difference would be that the current separate Acts for coal and metalliferous mines would be combined into a single longer Act that would be costly to enact and more difficult to quickly use. The coal and metalliferous sectors are also quite distinct with different hazards and risks. There is little movement of workers across the sectors, so a combined single Act would have few if any advantages, to counter the disadvantages.

Options 1 and 3 both include the Model Act but the difference is adoption of only certain parts of the Model Act compared to full adoption of the entire Model Act. Option 1 only includes adopting those parts of the Model Act containing greater rigour than comparable parts of the CMSHA and MQSHA.

Consultation

On 6 June 2012, DNRM released a consultation paper - *Nationally consistent mine safety legislation: Queensland's proposal for a nationally consistent legislative framework* - for comment. The paper gave an overview of Option 1 to Option 3 and indicated DNRM's preference for Option 1. Feedback on the consultation paper – indicated little support for Option 2 and instead the majority of responses strongly preferred Option 1.

Twenty eight responses to the consultation paper were received. Twenty two favoured Option 1, two favoured Option 2, and one response supported Option 3 but also expressed qualified support for Option 1. One response expressed qualified support for Option 1 and Option 2. Another response strongly supported Option 3 but this response also supported Option 2 whilst strongly opposing Option 1. The basis for the strong support of Option 3 was the expectation that DNRM's preference, Option 1, may only provide a marginal benefit to Queensland but would disadvantage the remainder of Australia and companies managing employees across states.

Among the total responses, there was no explicit support for the status quo. Option 4 is the baseline against which Option 1 and Option 3 have been assessed.

However, this consultation process did not include an assessment of costs associated with each option, and in June 2012, it was less apparent that the Model Act and core mines Regulations may not be adopted by all jurisdictions.

Industry and unions have been involved in the National Mine Safety Framework Steering Group (NMSF Steering Group) covering all states and territories since 2007. This process has supported the expectation of change rather than the status quo. They have also been involved in the Legislation Working Group for the development of more consistent mine safety provisions in Queensland, New South Wales and Western Australia since 2010.

During the consultation period for this RIS, DNRM will conduct information sessions in Brisbane and selected regional mining centres. The information sessions will provide the opportunity for mine workers, companies, unions and others to gain information and speak with inspectorate staff about the proposed amendments.

Key changes proposed under Option 1

Key initiatives from the non-core NMSF arrangements include:

- improved contractor management
- existing critical safety positions becoming statutory positions
- improved risk management planning for high risk activities
- safety and health management systems for small opal and gem mines
- improved stonedusting and use of explosion barriers.

Technical content of codes of practice for all states and for non-core states will, where relevant, replace Queensland's recognised standards and guidance material.

Proposed provisions from the Model WHS Act that would add additional rigour and consistency include:

- changes applying to executive officers
- penalties, offences and imprisonment provisions
- rights to appeal through the court system (identified options are subject to further consultation)
- additional possible court orders following a prosecution
- longer limitation period for prosecutions
- obligations of designers, constructors, erectors and demolishers
- protection from reprisal provisions (identified options are subject to further consultation)
- entry to any workplace for inspectors.

Other proposals not related to the NMSF are included as they were identified by Queensland based stakeholders as local issues through the June 2012 consultation process or they were identified by DNRM through other consultation processes separate to the NMSF. These local proposals include:

- clarifying the directive to suspend operations given by industry safety representatives for an unacceptable level of risk or the alternative proposal that industry safety representatives will have a role in the notification of potential risks but will not be able to issue a directive to suspend operations

- streamlining the election process for site safety and health representatives
- fitness for work (coal mines)
- issues related to mine plans for abandoned mines
- removing the requirement for coal mines to submit mine plans at the end of each calendar year
- refocusing the Coal Mine Workers' Health Scheme
- increasing the number of industry safety and health representatives (coal mines)
- requiring manufacturers and suppliers to inform the Mines Inspectorate in the event of a hazardous aspect or defect in equipment supplied
- implementing Ombudsman recommendations about a confidential complaints system.

An outline of key differences at Act level between Option 1 and Option 3 is included in **Appendix G**.

Description of key changes proposed under Option 1

What are the main suggested changes - based on consultation with the other major mining states?

Key initiatives included in the proposed reforms:

- improved contractor management
- existing critical safety positions becoming statutory positions
- improved risk management planning for high risk activities
- safety and health management systems for small opal and gem mines
- improved stonedusting and use of explosion barriers.

Improved contractor management

The proposed amendments will clarify what site senior executives (SSEs) and contractors are required to do to ensure everyone is part of and following a single safety and health management system at a mine site. The amendments will require everyone onsite to follow the same critical safety procedures.

The effective management of contractors is a continuing concern of the Queensland Mines Inspectorate. Alarming incidents and near misses involving contractors continue to occur. Coronial findings have emphasised the importance of there being only one safety and health management system for all persons at a mine and this needs to be followed by all workers whether employees or contractors. Eight of the nine deaths in Queensland coal mines and ten of the twenty deaths in Queensland metalliferous mines and quarries have been contractors since the current mining safety and health legislation came into force in 2001.

Existing critical safety positions becoming statutory positions

The proposed amendments will ensure there are people with sufficient experience, expertise, status and understanding of statutory obligations working at the operational level, in the complex and hazardous mining process. It will improve labour mobility and significantly increase consistency in relation to competency requirements across the major mining states of Queensland, New South Wales and Western Australia. It also will enable the Mines Inspectorate to more comprehensively audit and respond to concerns about competency and registered training organisations. This will enable the Mines Inspectorate's regulatory intervention to occur at the earliest stage possible. It is a more proactive approach to take action at the training level and assist industry to ensure competency rather than continually issuing directives, while a mine continues to be exposed to risks if competent persons are not in safety critical positions.

There are significant problems with the competency of people appointed to roles that have a major influence on the safety of a mine. Industry has had 14 years to properly implement its own competency standards and ensure safety critical roles are filled by competent people, but have failed despite numerous warnings from the Mines Inspectorate.

A brief review of the Mines Inspectorate's compliance databases has indicated at least 200 occurrences over the last five years of compliance action relating to deficiencies in competency and training. The chief inspectors and Commissioner for Mine Safety and Health have brought the concerns about competency to the attention of the leaders of industry for the past five years at the Annual Briefing to Mining and Quarrying Leaders. The same concerns have been relayed repeatedly at the Annual Queensland Mining Industry Health and Safety Conference and in various other seminars and forums. A special meeting on 5 October 2012 was called by the Commissioner for Mine Safety and Health and the Chief Inspector of Coal Mines with chief executive officers to discuss concerns about the increasing number of serious incidents in both open cut and underground coal mines.

The competency and training regime underpinning effective mine site competency standards needs to be strengthened. There are 16 key roles proposed to be covered by the requirement whereby a person cannot be in the role unless they have a statutory certificate of competency issued by the Board of Examiners. All of the 16 roles proposed currently exist at Queensland mines and 14 of these roles are named in the existing mine safety and health legislation; however, only five currently require statutory certificates of competency issued by the Board of Examiners. The strengthening will be achieved through the remaining 11 safety critical roles requiring the person undertaking the role to achieve a statutory certificate of competency. These are referred to as Section 1 statutory positions in this RIS.

Not all of the 16 roles will be required at each mine. Underground coal mining being the highest risk mining activity will require the most statutory positions. Three existing statutory positions plus four new ones will make seven in total at an underground coal mine. Surface metalliferous mines will require two statutory positions and, in some cases, these will be undertaken by the same person.

The requirement for a certificate of competency for quarry managers has strong support from the Institute of Quarrying Australia (IQA).

Some other important safety roles will have the minimum competencies prescribed but won't require a Board of Examiners certificate. There are 25 which already exist at Queensland mines. The exceptions are Radiation Safety Officer and Ventilation Auditor. Nineteen are already named in the existing mine safety and health legislation and 18 already require specified competencies. These are referred to in this RIS as Section 2 and Section 3 statutory positions. A summary of the changes is provided in the table on page 549.

The requirement to have statutory certificates of competency will be phased in to allow people and the industry, time to make the necessary arrangements.

Improved risk management planning for high risk activities

The amendments will result in greater consistency with the major mining states of New South Wales and Western Australia, and an enhanced structured approach to risk management of high risk activities with the inclusion of principal control plans and principal hazard plans. It will also provide chief inspectors with a specific discretionary power where they 'may' request notification of high risk activities. For guidance and consistency with the other major mining states, the high risk activities will be noted in a schedule to the Coal Mining Safety and Health Regulation 2001 and the Mining and Quarrying Safety and Health Regulation 2001 (Queensland's Regulations). If a mine is competently risk managing they will already be routinely undertaking planning for high risk activities.

These amendments will emphasise the importance of risk management for high risk activities, without placing any additional regulatory burden on operators other than what could potentially be applied now. The Chief Inspector already has a power to require production of documents related to risk management planning under general powers. In contrast, New South Wales and Western Australia propose requiring operators to submit risk management plans prior to conducting high risk activities.

Safety and health management systems for small opal and gem mines

It is proposed that safety and health management systems be introduced for opal and gemstone mines to enable operators to meet their existing obligations under the legislation. It is recognised that operators of opal and gemstone mines do not have the tools to effectively and prudently discharge their obligations, however, the system proposed will be a simple template model and Mines Inspectorate resources and industry associations will be used to implement the requirement.

Safety and health management systems have been mandatory for mines with 10 or more employees since the late 1990s and mandatory for mines, other than opal and gemstone mines, with fewer than 10 employees since September 2010 following two years of site visits and training by mines inspectors under the Small Mines Program. The program was very successful and well received by industry.

The same model was extended to opal and gemstone miners in 2011 to assist them to develop basic safety and health management systems. The training sessions have been popular and well attended.

Improved stonedusting and use of explosion barriers

It is proposed that underground coal mines will be required to install explosion barriers and to stonedust roadways after each 30 metres that the roadway advances during coal production to reduce safety risks and deliver better protection for workers and mine assets. These are current practices in underground coal mines in New South Wales. Queensland mines are currently required to stonedust roadways every 50 metres of production rather than every 30 metres and are not required to install explosion barriers.

In an underground coal mine, highly flammable methane gas can be present in large quantities. An ignition of methane can result in an explosion which can lead to a much higher intensity and longer duration explosion if coal dust is kicked up from the underground roadways by the methane explosion and the coal dust ignites. The resulting more intense coal dust explosion could lead to the loss of many lives as the explosion travels throughout the mine. Recently in the United States of America (USA) at the Upper Big Branch mine, an explosion of this type resulted in the loss of 29 lives.

Because stonedust is incombustible, it is spread on the roadways so that if a methane explosion occurs it mixes with the coal dust to quench any further more intense coal dust explosions.

Stonedust must be applied at a rate that prevents the buildup of too much coal float dust in the roadways. Internationally accepted research conducted by recognised experts in the area of mine explosions has found that stonedust must be applied every 30 metres of production to adequately mitigate the risk of a coal dust explosion. In the high production environments of modern underground coal mines it is often difficult to keep pace with this requirement. Explosion barriers provide a second line of defence in this event.

Stonedust explosion barriers are created by suspending stonedust in bags or spreading it on trays hanging from the roof of a mine so that in the event of an explosion, the stonedust bags

burst or stonedust is blown from the trays and is dispersed to mix with the coal dust and stonedust from the roadway to quench any further more intense explosions.

This amendment is proposed in response to a significant number of compliance actions by the Mines Inspectorate resulting from underground mines failing to comply with the current Queensland standard for stonedusting.

While this measure is estimated to cost the industry approximately $3 million per year (less than nine cents per tonne of coal), it has the potential to greatly reduce the risk of a catastrophic incident.

What are the main suggested changes – based on Queensland's general workplace safety and health legislation?

Greater consistency with safety and health standards and practices which apply to all workers in the general workplace will be achieved by adopting the following provisions or policy from Queensland's general workplace safety and health legislation into the mining safety and health legislation. These aspects from the general workplace provide for improved safety and health standards and outcomes for mine workers compared to current provisions in the mining safety and health legislation:

- changes applying to an executive officers
- penalties, offences and imprisonment provisions
- rights to appeal through the court system (identified options are subject to further consultation)
- additional possible court orders following a prosecution
- longer limitation period for prosecutions
- obligations of designers, constructors, erectors and demolishers
- protection from reprisal provisions (identified options are subject to further consultation)
- entry to any workplace for inspectors
- incident notification (and the national database).

Changes applying to executive officers

Three of the 16 recommendations coming from the Royal Commission of Inquiry into the Pike River mine disaster were about safety and health responsibilities of executive officers of mining companies.

In the current mine safety and health legislation, executive officers are liable if their corporation has committed an offence. If the Mines Inspectorate also prosecutes executive officers as a result of an offence committed by the corporation, executive officers have the onus of proving in their defence that they were reasonably diligent in ensuring the corporation complied with the legislation or that they were not in a position to influence the corporation in relation to the offence.

However, there is the need to review the blanket liability imposed on executive officers for corporate offending under current mine safety and health legislation. This is in light of the new approach to executive officer liability under Queensland's general workplace safety and health legislation and in the context of the Directors' Liability Reform Amendment Bill 2012 (DLRA Bill).

The DLRA Bill also provides in some instances for liability where an executive officer has authorised or permitted the corporation's conduct constituting the offence or was, directly or indirectly, knowingly concerned in the corporation's conduct.

The relative merits of the alternative approach to executive officer liability under the Work Health and Safety Act 2011 (Qld) or Model Act under which an executive officer may be liable for a breach of stated duties independently of corporate offending has also been considered.

Under either approach, consideration will also be given to providing examples of due diligence required of executive officers to provide guidance as to what is required for compliance with the requirements of the legislation. The inclusion of examples of due diligence expected of officers in the general workplace safety and health legislation has led to industry directors and officers in general industry being more proactive about monitoring, auditing and reviewing at board reporting level to verify they are meeting their safety and health obligations. Directors are recognising it is problematic if they do not have knowledge of safety and health risks and if the corporate office is not also responding to incident reports and other safety and health concerns.

Consideration will also be given to using the definition of 'officer' for consistency with the general workplace safety and health legislation which is based on the Corporations Act 2001 (Commonwealth) definition rather than the current definition of 'executive officer' in the mine safety and health legislation.

The preferred option for mining safety and health is the Work Health and Safety Act 2011 (Qld) or Model Act approach to the stated duties of officers which does not have a reverse onus of proof.

Penalties, offences and imprisonment provisions

The greater rigour in relation to penalties and categorisation of offences now applying to offences at general workplaces in Queensland should also be introduced for Queensland mines. This can be achieved by adopting the general workplace safety and health legislative categorisation of offences, maximum imprisonment penalties and maximum financial penalties and subcategories for officers compared to other individuals.

Rights to appeal through the court system

It is proposed to introduce appeal rights either through the mainstream court hierarchy with appeal rights from the District Court to Court of Appeal to be more consistent with the general workplace health and safety legislation, or within the current hierarchy from the Industrial Court to the Court of Appeal, for prosecutions under the mine safety and health legislation. There will also be a right of appeal from the Court of Appeal to the High Court through either alternative. The RIS will enable stakeholders to indicate their preference. Currently, s.349 of the Industrial Relations Act 1999 states a decision of the Industrial Court is final and conclusive and cannot be appealed except in limited cases, in any court.

Additional possible court orders following a prosecution

Additional court orders from the general workplace safety and health legislation will be added to the mine safety and health legislation. This will allow court orders to be made in addition to conviction and financial penalties or imprisonment.

The general workplace safety and health legislation includes a number of orders that can be made by a court in addition to a conviction for an offence including: adverse publicity orders, orders for restoration, work health and safety project orders and training orders. There is also an offence for failing to comply with an order. The mine safety and health legislation does not have comparable court order provisions. A greater range of possible court orders will motivate better safety standards than only imposing financial penalties or imprisonment after a serious breach of the legislation.

Longer limitation period for prosecutions

The mine safety and health legislation will be amended to adopt the general workplace safety and health legislation limitation period where it is longer, for prosecutions.

This amendment will provide the Mines Inspectorate with the same period of time as the general workplace regulator to investigate and gather evidence in relation to potential prosecutions for offences against the mine safety and health legislation.

Obligations of designers, constructors, erectors and demolishers

There have been instances of non-compliance with contemporary building standards which have resulted in unsafe situations and damage to property on mine sites.

The mine safety and health legislation will be amended to include similar obligations to general workplaces for designers, constructors, erectors and demolishers of surface structures to address this.

Protection from reprisal provisions

An identified option which is subject to further consultation is that the mining industry will have the same protection from reprisals for mine workers as workers in general workplaces in Queensland. The comparable reprisal provisions that apply to the general workplace in Queensland are broader and more comprehensive than the comparable reprisal provisions in the current mine safety and health legislation.

Stakeholders can comment about whether these provisions will provide greater protection to persons who report unsafe or illegal practices at mine sites but are fearful to do so because of possible retribution or victimization by the employer or colleagues.

Entry to any workplace for inspectors

It is proposed to adopt the general workplace approach to broaden the provisions in the mine safety and health legislation for entering and conducting workplace inspections so 'an inspector may at any time enter a place that is or an inspector reasonably suspects is a workplace.'

This will provide mines inspectors with the same broad entry rights as any general workplace inspector to enter a workplace. Currently inspectors can enter mines but there are restrictions on entering some off-minesite workplaces. Entry to off-minesite workplaces is sometimes required when the activities at that workplace are relevant to mining. An example is an electrical overhaul workshop conducting maintenance on explosion protected electrical equipment to be reinstalled in an underground coal mine following maintenance.

Incident notification (and the national database)

Amendments are proposed to the mine safety and health legislation in relation to terminology, definitions and other changes around incident reporting to allow recording of incidents in a national mining incident database.

A national mining incident database has been developed as part of the National Mine Safety Framework process and the Commonwealth Government advised that it has been ready from July 2013. These amendments are required to enable Queensland to participate in the central database collection and sharing system with other jurisdictions and to allow direct comparison of safety and health statistics across jurisdictions. Queensland's implementation is planned to commence in 1 July 2014.

Availability of a national mine safety incident dataset with standard terminology and definitions will allow each state to benchmark its safety and health performance against other jurisdictions, nationally and internationally. Benchmarking is a key tool used to drive improvements in safety and health performance.

What are the main suggested changes – responding to local issues?

Proposed amendments responding to local Queensland issues relate to:

- clarifying the directive to suspend operations given by industry safety representatives for an unacceptable level of risk or the alternative proposal that industry safety representatives will have a role in the notification of potential risks but will not be able to issue a directive to suspend operations
- streamlining the election process for site safety and health representatives
- fitness for work (coal mines)
- issues related to mine plans for abandoned mines
- removing the requirement for coal mines to submit mine plans at the end of each calendar year
- refocusing the Coal Mine Workers' Health Scheme
- increasing the number of industry safety and health representatives (coal mines)
- requiring manufacturers and suppliers to inform the Mines Inspectorate in the event of a hazardous aspect or defect in equipment supplied
- implementing Ombudsman recommendations about a confidential complaints system .

Directive to suspend operations for an unacceptable level of risk

Proposed amendments will either:

- clarify the directive that can be given by industry safety and health representatives (ISHRs) and district worker representatives (DWRs) related to suspending operations for an unacceptable level of risk; or
- provide that ISHRs and DWRs will have a role in the notification of potential risks but will not be able to issue a directive to suspend operations.

Under the first alternative, it is proposed that a directive to suspend operations will only be allowed when danger is imminent or immediate. ISHRs and DWRs will be encouraged to notify inspectors of more routine safety issues under existing processes outlined in the mine safety and health legislation.

If an ISHR or DWR issues a directive to suspend operations when risk is imminent or immediate, they must be on the mine site to do so and the directive will be subject to a Mines Inspector's review and ratification within 12 hours or it will lapse.

Under the second alternative, ISHRs and DWRs will retain a role in the notification of potential risks but will not be able to issue a directive to suspend operations under any circumstances. ISHRs and DWRs retain all other powers and can still proactively advise SSEs and inspectors of inadequate or ineffective safety and health management systems. If an ISHR or DWR is on site at the time of an imminent or immediate danger, they should advise workers under existing provisions in the CMSHA or MQSHA to withdraw to a place of safety, if the workers are not competent or able to eliminate the danger. Any worker, including an ISHR or DWR, can also advise site safety and health representatives at the mine who may stop operations under existing provisions in the CMSHA or MQSHA, if there is an imminent or immediate danger.

Election process for site safety and health representatives

It is proposed to amend the mine safety and health legislation for coal mines so the SSE can run the election of site safety and health representatives. If there is an objection to the SSE running the election, the election will be run by the Australian Electoral Commission.

A previous amendment to the mine safety and health legislation, following a Supreme Court ruling in 2011, resulted in an overly prescriptive election process. This proposed amendment will resolve this issue.

The roles of the site safety and health representatives elected for each mine are an important aspect of mine safety as they have powers to assess and reduce risks, investigate complaints and stop mining operations if there is an immediate danger to workers.

Fitness for work (coal mines)

It is proposed that fitness for work provisions in the mine safety and health legislation for coal mines be amended to allow the SSE to manage risks associated with the fitness of workers in the same way as all other hazards on a mine site.

Management at a mine site should be allowed to address fitness for work matters in the same way they would address any other on site hazard, that is, through an assessment of the risks and the application of appropriate controls.

Fitness for work includes general health, obesity, insufficient sleep, fatigue, excessive work demands, injury or illness, medications, influence of alcohol or drugs, psychological or psychiatric issues.

Issues related to mine plans for abandoned mines

Amendments will require operators to submit mine plans when a mine becomes non-operational temporarily or if it goes into receivership, as well as when it is abandoned. In the case of receivership, if the operator has not supplied the plans within seven days of receivership commencing, it is proposed the receiver will be obliged to supply the plans within seven days.

This amendment is required to allow proper assessment of the post use risks.

Others local issues identified in previous consultations to inform proposed amendments include:

- Removing the requirement for coal mines to submit mine plans at the end of each calendar year. This will cut red tape and is no longer necessary as the Inspectorate will continue to have the power to request mine plans at any time but only when specifically needed.
- Refocusing the Coal Mine Workers' Health Scheme to address the hazards such as dust and noise. This will enable the Mines Inspectorate to focus its efforts towards health surveillance activities to determine whether the work or the work environment at particular mines is harming the health of coal mine workers. In this way measures can be taken to address a hazard harming workers' health before it results in chronic illness.
- Increasing the number of industry safety and health representatives from three to four in recognition of the growth of the resources sector in recent years.
- Requiring manufacturers and suppliers to inform the Mines Inspectorate as well as customers in the event of a hazardous aspect or defect in equipment supplied to a mining operation or known hazardous incident related to the equipment.

- Implementing Ombudsman recommendations about a confidential complaints system.
- Seeking feedback from stakeholders on the Queensland Coal Mining Safety and Health Advisory Committee's recommendation that all statutory officials at a coal mine must be directly engaged by the operator so that they are employees of the operator and are not hired as contractors.

Other minor amendments based on consultation with the other major mining states

Minor amendments based on consultation with New South Wales and Western Australia are:

- boards of inquiry
- release of information regarding incidents by regulators
- the mine record.

Boards of inquiry

Queensland, New South Wales and Western Australia are proposing to adopt the approach from the current provisions in the Queensland and New South Wales mining safety and health legislation to develop a consistent stronger approach for all three states.

Release of information regarding incidents by regulators

This proposed amendment is mostly based on New South Wales and Western Australia adopting Queensland's current approach to the proactive release of information by the regulator. Only minor additions to current Queensland provisions are proposed to give statutory backing to the release of safety alerts and information about disciplinary proceedings in relation to practising certificates.

The Mine Record

Minor additions are proposed for consistency as Queensland already has most of the provisions. Additional requirements will include records in relation to reviews of control measures, reports by shift supervisors, making available a summary of the record in relation to each incident and not providing personal information without consent.

Summary of qualitative benefits and costs and quantitative costs of Option 1 compared to Option 3

Expected safety and health and/or consistency benefits are described qualitatively and modelled quantitatively, while the benefits of individual options have not been quantified explicitly.

The impact assessment notes how each underground coal mining disaster has had its own tragic figures and losses and provides examples from the last Moura mine disaster in Queensland, the Pike River mine disaster in New Zealand and the Upper Big Branch mine disaster in the USA.

The benefits of the amendments are expected to be improved safety and health at Queensland mines and greater consistency of laws with the other large mining states of New South Wales and Western Australia which may provide productivity gains. Some of the non-core initiatives also reflect current strategic priorities of the Queensland Mines Inspectorate detailed in the Commissioner for Mine Safety and Health Annual Report 2011–12.

Option 3 would provide a higher level of consistency with other jurisdictions, primarily at the legislative level. However, the Model Act and core mines Regulations under the NMSF have not been adopted uniformly across all jurisdictions, if at all. This strongly reduces any benefits to industry or government from consistency under Option 3. Consistency at legislative level is considered less beneficial than consistency in relation to technical and competency requirements where there may be productivity gains, and should not come at the cost of diminishing existing mining safety and health standards. Replacing Queensland's existing mine safety and health legislation with the Model Act under Option 3 would lead to a less clear and precise legislative framework and in some parts could reduce safety and health standards because of less specificity to the unique hazards of mining.

However, aspects of the Model Act that are considered stronger than comparable aspects of the current Queensland mining safety and health Acts are included in Option 1 to increase legislative consistency and rigour while providing for improved safety and health outcomes. Many of the non-core initiatives that are expected to further improve safety and health standards and fine tune existing requirements, such as improved contractor management and existing critical safety roles becoming statutory positions, can also be more clearly and precisely implemented under Option 1 compared to Option 3.

Existing critical safety roles becoming statutory positions will increase the calibre and status, of critical safety position holders at mines. This is extremely important at a time when there has been a large influx of new and potentially inexperienced workers into a rapidly expanding industry. For example, the coal sector has gone from 9,000 workers in 2000 to 39,000 in 2012 with the majority of the increase over the last four years.

Through the years in Australia there have been many commissions of inquiry, mining warden's and coronial inquiries following mining disasters and fatalities. Unfortunately, recommendations related to increasing knowledge and the strengthening of the competency of statutory position holders continue to recur through inquiries and coronials, too frequently. This was particularly so for inquiries following major coal mining disasters such as New South Wales's Mount Kembla Royal Commission (1903), the inquiry following the last Moura disaster (1994) and the Pike River Royal Commission (which concluded in 2012), which all recommended emphasising the importance of knowledge and competency for statutory safety and health roles. This recurring theme suggests, for some, the lessons still have not been sufficiently implemented or maintained and there is room for further improvement, as knowledge and competency are crucial.

The Queensland Mines Inspectorate has found and continues to find, persons who are being appointed to positions do not meet the competency standards required by the respective Acts and some mines have been failing to implement the industry competency standards set by the mining industry. Mines are currently obliged for example, to comply with CMSHA s. 55 'Management structure for safe operations at coal mines' and s. 56 'Competencies of supervisors'.

It is DNRM's contention that safety standards are slowly eroding due to persons being appointed who do not adequately comprehend the task at hand. A process cannot be managed effectively without comprehending the process. This is demonstrated, not only in the increasing number of concerning incidents, but also in the declining safety standards and reduced productivity being observed.

The non-core initiatives of improved stonedusting requirements and converting existing critical safety positions to statutory positions account for additional quantified costs, but will provide benefits to Queensland by improving in these areas of safety regulation and becoming consistent with New South Wales and Western Australia. For the underground coal sector, improved stonedusting requirements and explosion barriers reduce the risks of

tragic and costly disasters that are always present if principal hazards are not consistently and effectively controlled. Previous underground coal mining disasters have caused substantial loss of life, devastation to families and communities, as well as sterilisation of significant coal resources.

The following figures are from the quantified cost analysis (**Appendix I**). One of Queensland's 13 underground coal mines is already installing stonedust bags as explosion barriers to reduce risk. The additional stonedusting costs are therefore, only quantified for the remaining 12 underground coal mines. These figures indicate that there are significantly lower costs associated with Option 1 compared to Option 3. Option 1 is clearly preferred to Option 3 on the basis of cost.

Costs for Option 1

The total equivalent annual value of costs for Option 1 (based on a present value of costs over a 10 year period[1]) is $5.6 million per year across the entire mining industry. Of this, stonedusting requirements represent $3 million per year (less than nine cents/tonne of coal[2]), and the cost associated with converting existing critical safety positions to statutory positions is $2.6 million.

The annual breakdown of the costs by mining sector is as follows:

- for underground coal mining the estimated equivalent annual value is $3.2 million per year. Underground coal mining bears the bulk of the costs due to the new stonedusting requirements. However, the benefits of disaster risk reduction also accrue to underground coal mine operators, their employees and coal mining communities.
- surface coal mining - $274 000
- underground metalliferous mining - $1.5 million
- surface metalliferous mining - $298 000
- quarries - $342 000.

Costs for Option 3

Option 3 is significantly more expensive with an equivalent annual cost across government and industry of $27.8 million per year (based on present value of costs over a 10 year period). This is driven by the initial high transition costs, as it is assumed personnel and miners will need to spend time learning and adapting to the new legislation. There are higher cost increases for some sectors under Option 3 due to the respective numbers of personnel in the sectors who would require retraining. There are also concerns about potential reductions in safety and health standards under the Model Act.

The breakdown of the costs per year by mining sector is as follows:

- underground coal mining - $6.2 million
- surface coal mining - $13.1 million
- underground metalliferous mining - $3.7 million
- surface metalliferous mining - $3.5 million
- quarries - $1 million.

[1] Present value is the total value of the future benefit stream (10 years) in present day terms - this allows costs and benefits to be compared more easily.
[2] This is calculated based on 35,369,302 tonne of raw coal produced by underground coal mines in 2011-12 - http://mines.industry.qld.gov.au/assets/coal-stats-pdf/fyr_1112.pdf.

Combined with these higher costs, replacing Queensland's existing mine safety and health legislation entirely with the Model Act would weaken key aspects of the current mining safety and health legislative framework developed after a series of mining disasters and introduce a less clear and precise legislative framework. Clear and precise legislation is a fundamental legislative principle and is covered in **Appendix J.**

In summary, the financial impacts of the four options covered in the RIS are:

Option 1	Option 2	Option 3	Option 4 (status quo)
Estimated equivalent annual value of costs of $5.6 million based on present value of costs over a 10 year period. This cost is offset by the illustrative quantification of benefits of a fall in injuries and reduced risk of a coal mining disaster which is $8.3 million in equivalent annual value. If this is compared to the annual value of costs above there is a positive result of an estimated equivalent annual value of $2.7 million.	The same as Option 1 however the one resulting Act from combining the CMSHA and MQSHA would be longer than each of the separate Acts. Information would be more difficult to read and find for the different mining industry sectors, as users would have to filter out provisions not relevant to their industry sector.	Estimated equivalent annual value of costs of $27.8 million based on present value of costs over a 10 year period.	Maintaining the status quo has not been costed. A number of safety and health concerns would remain and there would be no consistency improvements in key technical and competency areas with New South Wales and Western Australia.

Preferred option

The preferred option is Option 1 as it will build on the framework that has helped to improve safety and health at mines and quarries significantly since 2001 (please see **Appendix A** for historical context and safety and health statistics) while still developing greater consistency with New South Wales and Western Australia in key areas, at a significantly lower cost than Option 3.

An outline of the key differences at Act level between Option 1 and Option 3 is included in **Appendix G**. The differences can have an impact on how clearly important non-core policy such as improved contractor management can be implemented. However, there are also a number of other features of the current Queensland mining safety and health legislative framework strongly preferred to the comparable approach under the Model Act due to effectiveness noted in **Appendix G**.

The Queensland Acts are based on a risk management model that requires the anticipation and control of problems before they arise. This is evidenced by:

- the safety and health management system

- proactive inspector's powers
- safety-oriented management structure
- a duty by all persons to ensure an acceptable level of risk.

Features of the Queensland framework that are superior to the Model Act framework include:

- focus on a systems approach
- vertical control of all activities on site
- acceptable level of risk—a proactive approach
- cooperation requirements
- workers' duties

The quantified costs for Option 1 relate almost totally to costs for improved stonedusting requirements and existing critical safety positions becoming statutory positions. The majority of costs relate to improved stonedusting requirements for the underground coal sector. Costs range from negligible to minimal for the other mining sectors.

The proposed requirements for stonedusting and explosion barriers will lower the risk of another underground coal mining disaster. Installing explosion barriers will mitigate residual risks when stone dusting at coal mines falls below prescribed concentration levels. Mines have, at times, been failing to meet prescribed concentration levels due to the pace of production and compliance action by the Mines Inspectorate has been required.

Existing critical safety positions becoming statutory positions will ensure there are persons with sufficient experience, expertise, status and understanding of statutory obligations working at the operational level in complex and potentially hazardous mining processes. Making existing safety critical positions statutory positions will help counter balance the increased volume of new entrants into mining occupations in recent years which has reduced the overall level of awareness of hazards, proficiency in hazard identification and knowledge needed to address risk.

The changes to statutory position requirements will also result in Queensland having consistent positions and competency requirements, functions and responsibilities with New South Wales and Western Australia. This will improve labour mobility and reduce the cost for mines employing workers from New South Wales and Western Australia.

The amendments proposed will lead to mine safety legislation and Regulations more consistent with those of New South Wales and Western Australia. Consistency on key provisions proposed under Option 1 draws on the strengths of current legislation in the three major mining states and does not require Queensland to forego sovereignty on matters important to Queensland. The Productivity Commission has acknowledged that national approaches to regulation, even if limited to specific key components related to technical and/or competency requirements, can deliver benefits to all jurisdictions (please see **Appendix C**). Although there is no data to robustly quantify these benefits, there are expected to be consistency benefits compared to the status quo.

Maintaining the status quo would mean that current concerns including in relation to stonedusting and competency would not be addressed.

Implementing Option 1 will mean the safety and health approach that has been well established across Queensland mining operations under the current Acts and Regulations over the last 12 years will be maintained and improved in strategic areas of current concern.

As the improved stonedusting requirements and existing critical safety positions becoming statutory positions (non-core initiatives) also apply under Option 3, these quantified costs are also included under Option 3. However, Option 3 is significantly more expensive due to the cost of transitioning from a well-established, clear and precise approach to mining safety and health to a general industry Model Act approach that would involve significant retraining across the mining industry. In some ways, it could also potentially lower safety and health standards. This was covered in the Consultation Paper in June 2012 and relevant extracts from this paper are in **Appendix G.**

The potential compliance cost benefits from harmonisation under Option 3 have been reduced due to some jurisdictions not adopting the Model Act or only adopting parts of it or changing parts of it or currently addressing issues associated with its effectiveness. Further information is provided in **Appendix F.**

1. Issues statement

The National Mine Safety Framework (NMSF)

The NMSF started as an initiative of the Conference of the Chief Inspectors of Mines to establish a more nationally consistent health and safety regime in the mining industry. The NMSF is based on seven strategies, focussed on key areas where greater consistency across jurisdictions would be most beneficial to the mining industry:

- nationally consistent legislation and Regulations
- competency support
- compliance support
- a nationally coordinated protocol on enforcement
- consistent and reliable data collection and analysis
- effective consultation mechanisms
- a collaborative approach to research.

The NMSF became one of 27 COAG reforms under the National Partnership Agreement to Deliver a Seamless National Economy. The NMSF will, therefore, be assessed according to the overall aims of the National Partnership Agreement to Deliver a Seamless National Economy which include:

- more consistent regulation across jurisdictions
- addressing unnecessary or poorly designed regulation and
- reducing the costs of regulation and enhancing productivity and workforce mobility.

There is no known COAG measurement for 'consistency' and timelines for delivery have to date been key to meeting the Commonwealth Government's expectations.

Core compared to non-core NMSF

Since 2010, the NMSF has been split through 'core' policy and 'non-core' policy differences. Queensland, New South Wales and Western Australia, who collectively account for approximately 90 per cent of mining activity in Australia, confirmed that to maintain their current safety and health standards for their relatively complex, high hazard and large scale mining operations including remote area operations, additional legislative and regulatory provisions (non-core provisions) would be required in addition to those core provisions required by Victoria, South Australia, Northern Territory and Tasmania.

The core policy was the extent of consensus achieved by May 2010 across all states and territories and mining industry stakeholders.

The additional non-core provisions should ensure greater regulatory consistency across the three major mining states and productivity gains including enhanced worker mobility through more consistent technical and competency requirements.

Therefore, on 28 May 2010, the COAG Ministerial Council endorsed the recommendations of the NMSF Steering Group for core NMSF drafting instructions for all jurisdictions with additional non-core NMSF drafting instructions for

Queensland, New South Wales and Western Australia for those states' proposed complementary or stand-alone mine safety legislation and Regulations.

Throughout the non-core NMSF process, Queensland, New South Wales and Western Australia intended having their own state specific Parliamentary drafters rather than one drafter for all three states. The resulting provisions were to be as consistent as possible. The non-core policy, where necessary, will prevail to the extent of any inconsistency over any core policy.

The *Draft Model Work Health and Safety Regulations and Codes of Practice for Mines Issues Paper* released by Safe Work Australia in July 2011, noted there would be for Queensland, New South Wales and Western Australia, '… *supplementary 'non-core' provisions to be made as appropriate. This hybrid approach largely reflects the current situation but is intended to ensure a greater degree of consistency across jurisdictions than is currently the case.'*

The importance of maintaining safety and health standards has also been consistently acknowledged during the NMSF process. For example, in both the NMSF Implementation Report dated October 2008 and in the Updated Implementation Report dated June 2009 the following is stated:

> *'In some jurisdictions, there is a strong historical context for mining industry specific OHS legislation. This legislation has been shaped by imperatives in particular jurisdictions and influenced by the development of the industry, resulting in variations between jurisdictions… The aim of the NMSF is to put in place a consistent approach for a full range of safety issues, as stated in the seven strategies, without losing the provisions that remain relevant, some of which are the result of hard won lessons from the past and must be retained to ensure the safety of mineworkers.'*

Queensland has therefore participated in the NMSF based on the position of having existing mine safety and health legislation and Regulations considered by many stakeholders to be, in many respects, world class and ensuring that existing safety and health standards are not diminished, while developing greater consistency with the other non-core states of Western Australia and New South Wales where possible, and introducing further improvements to ensure best practice in all respects.

Objectives of the non-core process

The primary objectives of the non-core process for Queensland, New South Wales and Western Australia are to:

a) provide equitable, clear and effective safety standards and protections for mining workers, while ensuring that no party will be required to reduce existing health and safety standards
b) ensure effective risk management and work health and safety systems including the identification and control of principal and other mine hazards
c) increase business efficiency by reducing any unnecessary compliance and regulatory burdens for employers, including those with operations in more than one jurisdiction, and for workers who travel across jurisdictions
d) create efficiencies for governments in the provision of mine-specific work health and safety regulatory and support services

e) enable effective consultation and the timely sharing and understanding of safety information
f) support innovation and development of best practice safety systems that focus on prevention and continuous improvement to maintain safety standards and achieve significant ongoing reductions in the risk and incidence of death, injury and disease in mining industry workplaces
g) as far as possible, agree the competencies required for each statutory position set out in the non-core drafting instructions or otherwise required
h) improve the consistency of assessment procedures for determined statutory competencies
i) develop and improve arrangements for the maintenance of standards for statutory competence across the three jurisdictions (e.g. through continuing professional development arrangements to retain practicing certificates)
j) ensure the assessment of competence remains a technically robust system, with standards set and assessments undertaken by qualified, experienced and technically competent persons.

Interaction of the NMSF with the COAG reform for work health and safety for general workplaces

Although a high level of uniformity was COAG's objective for the general WHS jurisdiction for general workplaces through the Model WHS Act, greater consistency rather than high levels of uniformity was the main objective of the NMSF for much of its history.

The Model Act was finalised in 2009 by SafeWork Australia so that it could form the basis of the work health and safety Acts to be enacted across Australia by state parliaments, to harmonise work health and safety legislation for general workplaces. In Queensland's case the Work Health and Safety Act 2011 commenced on 1 January 2012. However, from 2011, the Commonwealth Government increasingly raised the expectation that the Model Act should also become the legislative architecture for mining, as well as general workplaces including retail, commercial, government and construction. In 2011, SafeWork Australia developed Model Work Health and Safety Regulations which were to include a specific chapter for mines or 'core' mines regulations. Most of the work on the core mine Regulations was completed by the end of 2012. However, the core mines Regulations have not been endorsed by all jurisdictions.

The Model Act and Model Regulations, thus became an option for adoption through the NMSF compared to improving Queensland's current CMSHA and MQSHA. Core mines Regulations are not sufficient to maintain current standards for Queensland, New South Wales and Western Australia. As a result non-core provisions additional to the core provisions were developed by Queensland, New South Wales and Western Australia.

Consequences of maintaining the status quo

If the NMSF reforms are not implemented and the status quo is maintained, progress towards achieving the objectives of the non-core NMSF outlined above will not be achieved in any way for Queensland. Opportunities for further improvements to the current legislative and regulatory framework would also be lost, despite the years of intense consultation with stakeholders and with the non-core states of New South Wales and Western Australia.

Queensland will not have met the COAG criterion of developing greater consistency with other jurisdictions.

Under the COAG National Partnership Agreement to Deliver a Seamless National Economy, Queensland received its full share of reward payments for 2011–12 on 7 June 2012. Assessment regarding receipt of the remaining reward payments will be based upon meeting milestones for the remaining reforms. The Commonwealth Government has the final discretion in regard to the reward payments.

In the case of the mining safety reform, reward payments have been linked to the achievement of milestones and there is no known measure for the objective of the reform of 'greater consistency'. The remaining milestones for mining safety have not been met by any jurisdiction because of delays in finalising core provisions by SafeWork Australia, due to a lack of national agreement on the content of the provisions.

It is not yet clear how the Commonwealth Government will take into account that a milestone could not be achieved by states, due to SafeWork Australia not achieving an earlier 'building block' milestone by finalising core Regulations across all jurisdictions. The Commonwealth Government has also been advised on numerous occasions that Queensland will not reduce mining safety and health standards through COAG harmonisation processes, in order to achieve greater consistency.

While good overall progress has been made across the 27 COAG deregulation priorities, there are also a number of other reforms where milestones have not been completed or not completed by the times required. The Commonwealth Government has not provided a specific indication of how the remaining reward payments may be apportioned according to milestones that have been achieved across the reforms, although it is expected that remaining payments will be weighted based upon their relative significance and the amount of work involved in completing them.

Many of the non-core NMSF initiatives are not only the result of intense consultation and collaboration with New South Wales and Western Australia, but are also sound and prudent responses to many of the current strategic priorities of the Queensland Mines Inspectorate outlined in the *Commissioner for Mine Safety and Health Annual Performance Report 2011–2012* to the Minister for Natural Resources and Mines.

The report outlines the challenges facing the Queensland mining industry including a reversal in the trend of the last 12 years and more of a consistently decreasing lost time injury frequency rate (LTIFR). **Appendix A** includes a state comparison of mine safety and health performance based on lost time injury frequency data collected by the Minerals Council of Australia from 1994–95 to 2008–09. Since then there have been no reliable comparison statistics across jurisdictions but Queensland's statistics are also provided from 1994-95 to 2011-2012 in **Appendix A.**

The *Commissioner for Mine Safety and Health Annual Performance Report 2011–2012* noted there was an increase in LTIFR in underground coal mines from 4.2 in 2010–11 to 6.8 in 2011–12. This is a large increase and a cause for concern. LTIFR in the other mining areas, with the exception of quarries, also increased by 15 to 20 per cent based on the preliminary figures.

The *Commissioner for Mine Safety and Health Annual Performance Report 2011–2012* also suggested that the reversal of the almost consistent improvement trend over the preceding decade is a lag indicator that is causing concern.

Figures for 2011–12 were confirmed in the Queensland Mines and Quarries – Safety Performance and Health Report 2011–12. The LTIFR in underground coal mines moved from 4.4 in 2010–11 to 6.8 in 2011–12 (an increase of approximately 55 per cent). The LTFIR in underground metalliferous moved from 2.6 to 3.4 (an increase of approximately 31 per cent) and in surface metalliferous from 2.9 to 3.6 (an increase of approximately 24 per cent). Across all operations, the average deterioration was approximately 14 percent although surface coal only moved from 3 to 3.1 and quarries improved significantly from 14.2 to 6.9.

The *Commissioner for Mine Safety and Health Annual Performance Report 2011–2012* stated that the strategic priorities for the Queensland Mines Inspectorate include:

- effective management of contractors;
- statutory position holders competently discharging their obligations;
- auditing persons appointed to the management structure at coal mines and the competencies of persons appointed as supervisors to ensure these senior positions are held by people with competencies to effectively manage the risks associated with various hazards on mine sites;
- effective safety and health management systems; and
- the small mines initiative.

Some of the proposed important fine tuning based on non-core NMSF policy including improved contractor management, existing critical safety positions becoming statutory positions, improved stonedusting and risk management planning for high risk activities will respond to some of the emerging safety and health issues especially for the underground coal mining industry. This emphasises the importance of adding additional rigour to the current legislative and regulatory framework rather than just maintaining the status quo. Otherwise there will be a risk that the current concerning reversal in performance (compared to the previous consistent impressive safety and health improvements) will continue or perhaps worsen and the Queensland Government will not have implemented any regulatory initiatives to address emerging safety and health issues.

2. Policy objectives

Background policy considerations for Queensland's participation

Queensland's mining safety and health performance was consistently in the top group, if not the best, in Australia based on statistics collected by the Minerals Council of Australia since the implementation of the CMSHA and the MQSHA and their Regulations from 2001 and the preparatory years leading up to the introduction of the CMSHA and MQSHA (see **Appendix A**).

Safety and health management systems started to be introduced in the years after the last Moura mine disaster in 1994, prior to more comprehensive implementation through the CMSHA and MQSHA.

The consistent improvements were almost across the board for underground and open cut mining in both coal and metalliferous sectors, and also for many of the years for quarries.

However, this remarkably consistent improvement in mine safety and health followed a series of tragic mining disasters in underground coal mines in Queensland.

The impact of the series of mining disasters in Queensland has been profound and lasting, with the CMSHA and MQSHA and their Regulations containing many of the lessons learned from, at times, horrific circumstances.

It is therefore, of considerable concern that over the last reporting period, there was a reversal of the previous consistent LTIFR improvements, particularly so in the underground coal mining sector.

The Queensland Mines and Quarries – Safety Performance and Health Report 2011–12 has suggested based on investigations and audits that there are several factors contributing to this worrying reversal in safety performance. These factors include lack of training or ineffective training and assessment, people being promoted to supervisor level who do not understand legislative requirements, hazard identification or the risk management process. The mining industry until recently grew exponentially and possibly too quickly to effectively transfer skills and knowledge.

Queensland has participated in the NMSF based on the position that existing safety and health standards will not be diminished. During the NMSF, Queensland has repeatedly raised concerns with the Commonwealth Government that consistency must not come at the expense of reducing existing mining safety and health standards and that optimisation or consistency in relation to best practice from the major mining states, in order to improve mine safety and health should be a guiding consideration.

Queensland Government policy position

The general position in relation to enacting COAG national legislation or regulation is that Queensland must not be disadvantaged in any way either through direct or indirect costs or standards of safety or service delivery, quality of training or outcomes for Queenslanders. Further, Queensland must agree with any proposed national legislation as an improvement to current standards or outcomes and Queensland must benefit from its adoption.

The Queensland Government has also endorsed principles to guide involvement in Commonwealth-State intergovernmental activities. The key objective is to participate in those activities which deliver a benefit to Queensland and align with Queensland's policy priorities and agenda. A copy of these principles is in **Appendix B**.

Policy objectives

The policy objectives are to gain benefits from the NMSF and address strategic priorities by:

- further improving and fine tuning the CMSHA and MQSHA and ensuring Queensland's mine safety and health Acts and Regulations are second to none in all aspects of best practice including stonedusting and statutory positions; and
- increasing consistency in mine safety and health legislation and Regulations with the other major mining states of New South Wales and Western Australia while ensuring there will be no reduction in Queensland's current safety and health standards.

Greater consistency with New South Wales and Western Australia will include developing the technical content of codes of practice together with the other states, industry and unions. Where relevant, Queensland's existing recognised standards and other guidance material will be replaced by codes of practice.

Productivity Commission comments

The non-core NMSF process will achieve more consistency in significant key areas across the major mining states, rather than uniformity of wording and structure of the Acts and Regulations due to the different legislative models to be used by each of the non-core States.

The Productivity Commission Report – *Lessons for National Approaches to Regulation* – noted that substantial value can still be gained from the achievement of significant levels of consistency in key areas such as technical and competency requirements, when high levels of uniformity are not possible.

This Productivity Commission Report also acknowledges that uniformity may not always be desirable. A more state specific approach may be based on considerations such as circumstances prevailing in the individual jurisdictions, the public interest and safety.

There are a broad range of approaches to harmonisation to achieve benefits. This Productivity Commission Report acknowledged that there may be different regulatory architecture across jurisdictions and different communities may have different attitudes to risk.

Therefore, productivity achievement can be measured in terms of developing significant levels of consistency in key areas including Regulations, standards of competency and technical standards that will achieve material net benefits while not lowering safety standards. There may continue to be inconsistency in some policy relevant areas.

Some relevant extracts from this Productivity Commission report are included in **Appendix C**.

3. Options and alternatives

Options

The following four options were identified.

Option 1 - Retain Queensland's two mine safety and health Acts for the coal and metalliferous sectors, plus amendments based on provisions from the Model Act and core or non-core NMSF that improve safety and health and consistency.

Option 2 - Build a new single Act by combining Queensland's two mine safety and health Acts into one piece of legislation covering both coal and metalliferous sectors, plus amendments based on provisions from the Model Act, core or non-core NMSF that improve safety and health and consistency.

Option 3 - Develop mine safety legislation primarily based on the Model Act, and core or non-core NMSF provisions that improve safety and health and consistency.

Option 4 – Do nothing/maintain status quo. Retain Queensland's two mine safety and health Acts, excluding amendments based on provisions from the Model Act and core or non-core NMSF that improve safety and health and consistency.

Alternatives to achieving the policy objectives

The NMSF aims to achieve greater consistency across legislation and Regulations as well as through codes of practice and guidance material.

The proposed changes covered in this RIS are to the Queensland Acts, the CMSHA and the MQSHA and Regulations in order to achieve greater consistency with the Acts and especially Regulations applying to mines of the other large mining jurisdictions of New South Wales and Western Australia, as well as improve safety and health outcomes. For this reason it is not feasible to explore self-regulatory, co-regulatory or non-regulatory, voluntary approaches to achieve the policy objectives of greater consistency in legislation and regulation.

However, the design of the current Queensland framework in the CMSHA and MQSHA is strongly risk management based and enables a high degree of self-regulation or co-regulation by industry. This is primarily through flexibility in how industry may satisfy the overarching legislative and regulatory requirements for effective safety and health management systems based on risks, hazards, complexity and size of operations relevant to particular mines. For example, a SSE at a mine is required under the legislation to develop and implement a safety and health management system for all persons at a mine but there is a degree of self-regulation in relation to how a system is developed and implemented for a particular mine. Many of the proposed amendments will further refine this overall risk management approach.

Hazardous industries such as mining and especially underground coal mining require an effective legislative and regulatory compliance and enforcement framework. The

current framework enables effective auditing and other actions based on risk by the Inspectorate while enabling appropriate flexibility for industry in managing hazards and risks.

The proposed amendments are to the current Queensland Acts and Regulations which are already well understood and accepted by Queensland mining stakeholders.

Some sections of the Queensland Regulations may require a way to achieve an acceptable level of risk where there is only one acceptable way to manage the risk.

In contrast, codes and guidance material will cover non-mandatory ways of discharging statutory duties or obligations. If a mine decides not to follow a code to achieve compliance, a mine can follow another method that provides an equivalent or higher standard of health and safety.

Summary of key features of each option

3.1 Option 1

Option 1 involves retaining Queensland's two mine safety and health Acts for the coal and metalliferous sectors, plus amendments based on provisions from the Model Act and core or non-core NMSF that improve safety and health and consistency.

Amendments based on non-core policy

Some of the proposed important fine tuning to the CMSHA and MQSHA and their Regulations will be based on non-core policy in relation to improved contractor management, turning existing critical safety positions into statutory positions, stonedusting and notification of high risk activities. These proposals will address some of the emerging safety and health issues especially for the coal mining industry.

There will be some differences across the non-core states in relation to notifications. The approach to notification of high risk activities will differ to what is proposed in the non-core policy to be adopted by New South Wales and Western Australia, as Queensland will have the discretion to require notifications, whereas New South Wales and Western Australia will, in all cases, require notifications.

The non-core policy reflects much that Queensland has already enacted under the current Queensland legislative and regulatory framework. Health assessment and health monitoring will continue to be subject to intra-state differences due to states having different existing schemes, and large numbers of external providers, although there is expected to be more consistency of some requirements based on core and non-core policy.

Amendments based on the Model Act

Provisions from the Model Act that will be adopted to increase consistency and which may strengthen the current framework include:

- changes applying to executive officers
- penalties and offences and imprisonment provisions

- rights to appeal through the court system (subject to consultation on options)
- additional possible court orders following a prosecution
- longer limitation period for prosecutions
- obligations of designers, constructors, erectors and demolishers
- protection from reprisal provisions (subject to consultation on options)
- entry to any workplace for inspectors
- provisions related to the national data base and incident notification issues.

Amendments based on core Model Mines Regulations

Throughout 2011 and 2012, Safe Work Australia developed core Model Work Health and Safety (Mines) Regulations in consultation with the NNMSF Steering Group. However, these Regulations have not been finalised as they have not been endorsed by all jurisdictions.

The non-endorsed core Model Work Health and Safety (Mines) Regulations developed by SafeWork Australia for all jurisdictions mostly contain requirements covering specific risk control measures, technical standards and topics already covered in the current Queensland Acts or Regulations. Where there are differences only minimal changes are proposed. Further explanation about changes related to the core Model Work Health and Safety (Mines) Regulations is in **Appendix D**.

The core Model Work Health and Safety (Mines) Regulations recognise that different jurisdictions will have variations in relation to the meaning of mine, mining operations, mineral, principal mining hazard and mine holder due to differences in other local Acts and Regulations. Consequently, the existing key definitions in the CMSHA and MQSHA in relation to coal mine, mine, on-site activities, mine operator, notification requirements and so on are being retained.

The Core Model Work Health and Safety (Mines) Regulations will however, introduce greater consistency in relation to safety and health management system requirements across jurisdictions and there will be some fine tuning of existing Queensland provisions related to safety and health management systems. **Appendix E** contains a qualitative description of the Option 1 changes.

3.2 Option 2

Option 2 is the same as Option 1 except the CMSHA and MQSHA would be combined into one piece of legislation covering both coal and metalliferous sectors, instead of retaining separate Acts for the different mining sectors.

Option 2 proved unpopular during consultation based upon the consultation paper in June 2012. Stakeholders instead supported amendments to the CMSHA and the MQSHA rather than amendments to one consolidated mining safety and health Act that would apply across all mining sectors.

This option of one Act would not result in any significant practical benefit compared to Option 1 to retain the current separate Acts. Only a minimal number of workers move between the different mining sectors and having one Act would mean users of the Act would have to filter out provisions from a significantly longer Act not relevant to their industry sector.

Although this option would reduce the number of pages on Queensland's statute books as the two very similar Acts would be combined as one Act with a total page

saving, the remaining single Act would be significantly longer because respective sectors, due to different hazards and other significant sector differences would still have to be differentiated through various parts of the longer Act.

A longer Act would be more difficult and less efficient to use due to its length and it may be difficult to clearly differentiate where some parts only apply to particular sectors. In contrast a segmented approach with two Acts is tailored to the specific needs of stakeholders and results in simplicity and a smaller regulatory burden for stakeholders. The majority of stakeholders favour maintaining two separate Acts largely because the coal and metalliferous sectors are essentially very different. Coal mining and metalliferous forms of mining have quite distinct characteristics including:

- each sector has its own distinct language to describe seemingly similar things e.g. support for unstable geological conditions in coal is 'strata control' whereas in metalliferous it is 'ground control'.
- mining methods and processes are quite distinct.
- ventilation design and operation is different.
- different industrial organisations represent the majority of workers in each sector.
- there is very little movement of labour between sectors.
- typical management structures are different.
- statutory positions and competencies are linked to their respective sectors.
- underground coal has stringent requirements for electrical designs, testing and certification against Australian and International Standards whereas metalliferous has no similar requirements.
- underground coal has requirements to manage the risks associated with explosive gas and coal dust.

Different industrial situations prevail in the coal and metalliferous sectors with different unions representing the majority of workers in each sector. Coal mining has a long tradition of proactive involvement in safety matters through its industry safety and health representatives, formerly known as industry check inspectors (a term still in use in New South Wales).

The difference between the two sectors is the reason for having separate advisory committees, with each committee focused on the issues and hazards pertaining to its specific sector. There is a possibility of an increase in underground coal mining when easily accessible coal resources are depleted. There may be a requirement for a greater focus on high hazard underground coal mining issues in the future. Separate legislation for specific sectors will facilitate timely legislative responses to emerging issues.

The CMSHA and MQSHA already have a majority of identical provisions and there is further opportunity to develop greater uniformity or consistency across the two Queensland mining sector specific Acts through amendments to each Act. Government consultation has confirmed that this can be completed.

It is proposed that where there is no significant policy reason for differences, (i.e. with the difference one of drafting or wording), a number of minor amendments to either or both Acts can develop greater uniformity or consistency of wording across the CMSHA and MQSHA. For example, there are some slight differences across s. 27 of the MQSHA and s.30 of the CMSHA and the sections can be made more consistent and comprehensive in references to management and operating systems and risk management.

3.3 Option 3

Option 3 involves developing a single mine safety Act primarily based on the Model Act, plus NMSF provisions that improve safety and health and consistency. Adopting Option 3 may achieve the highest levels of consistency but it would result in few safety and health improvements (other than the parts of the Model WHS Act proposed for adoption under Option 1) and in relation to some legislative aspects covered in **Appendix G** would diminish Queensland's current mining safety and health standards.

Option 3 was originally based on the possibility that uniformity would be achieved through the Model Act as the overarching legislative architecture. However, this objective has not been achieved across all jurisdictions and is now unlikely to be achieved. This reduces the earlier expected benefits for industry working in more than one jurisdiction from high levels of legislative uniformity.

The potential gains expected from high levels of uniformity analysed in the Commonwealth Government's RIS for the Model Act with relevant extracts in **Appendix H** are now unlikely to result. Further information about the COAG reform for general work health and safety and implementation across Australia to date and issues with the Model Act identified through the Workplace Health and Safety Queensland Industry Round Table is in **Appendix F**.

Based on an Industry Round Table consultation process in August 2012, Workplace Health and Safety Queensland are currently addressing opportunities for improvement associated with the Model Act, including some of the issues raised against the Model Act in DNRM's June 2012 Consultation Paper. Key issues that favour Option 1 over Option 3 were discussed in the June 2012 Consultation Paper and are summarised in **Appendix G** along with other aspects identified by the Queensland Mines Inspectorate. .

The issues that have come to light in Queensland from the Industry Round Table consultations are not relevant to the mining industry, as none of the aspects of the Model Act that stakeholders noted as issues for general workplaces, including workers in some cases also being persons conducting a business or undertaking (PCBUs), what is meant by reasonably practicable and how control is relevant are aspects of the Model Act proposed for adoption within the mining safety and health legislative frameworks under Option 1.

Only certain parts of the Model Act that will add rigour or consistency without reducing safety and health standards are proposed for adoption under Option 1.

4. Impact assessment

4.1 Summary

Benefits

This RIS does not include an explicit quantitative assessment of the benefits that offset the costs of the proposals. Several examples of recent regulatory impact analysis conducted by the Commonwealth have all noted the difficulty in undertaking cost benefit analysis for safety and health in general, and the lack of robust data. Even when surveys of stakeholders are conducted, the survey results are still only a rough estimate of the value of future benefits. These difficulties with quantifying safety and health benefits are further noted in **Appendix H**.

However, the expected benefits are to improve safety and health in Queensland mines. In particular it is expected that:

- there would be a fall in injuries due to amendments such as an increase in the positions that require statutory certificates and clarification of contractor management requirements.
- there would be a reduction in the risk of an underground coal mining disaster due to the package of options, particularly improved stonedusting requirements and installation of stonedust explosion barriers. This reduction in disaster risk would not only help avoid fatalities that carry high social costs, but also reduce the risk of mine closure and sterilisation (permanent loss) of coal resources as a result of an explosion.

It is possible to qualitatively describe the initiatives and expected safety and health benefits.

To develop quantitative estimates of safety and health benefits, it would be necessary to undertake hypothetical scenarios about risk reduction or reducing the likelihood of potential losses. As well as improvements in safety and health, this would also include in the case of the underground coal mining proposals, a lowering of the risk of a hypothetical underground coal mining disaster occurring and the hypothetical losses that could result. Modelled benefits are included in **Appendix I.**

For example, the improved stonedusting that involves costs for underground coal mines is designed to further lower the risk of any underground coal mining disaster occurring in Queensland.

It is not possible to robustly model the financial benefits of further lowering the risks of injuries and fatalities and potential catastrophic events in an industry such as underground coal mining with the nature of its principal hazards which must be consistently, effectively controlled.

Each past tragic underground coal mining disaster has had its own set of figures along with the losses to families and communities. For example, the last Moura disaster in 1994 cost 11 lives and approximately 30 million tonnes of coal was sterilized.

The Pike River disaster in 2010 cost 29 lives and the New Zealand Government responded with a Royal Commission into the disaster and a pledge to implement recommendations to improve its mining safety and health regulatory framework. Pike

River Coal Limited went into receivership with uncertainties remaining about preserving the value of the asset and any future for the mine.

More than $200 million had been invested in the development of Pike River Mine prior to the explosion. Further capital raising of $70 million was in progress when the explosion occurred. The mine is closed. The New Zealand Government has spent more than $20 million on its response and Royal Commission into the disaster. It is likely that the costs to implement the Royal Commission's recommendations will significantly surpass this figure. Costs of $80 million are being quoted to recover the bodies of the miners who lost their lives.

In April 2010, a coal dust explosion occurred at Massey Energy's Upper Big Branch Mine in West Virginia, USA killing 29 mine workers. The explosion was triggered by a frictional ignition of methane on the longwall face that then set off a massive coal dust explosion due to inadequate stonedusting. Massey shares lost more than half their value, hitting a low of $25.87 in July 2010. Alpha Natural Resources acquired Massey in June 2011 and outlaid $209.5 million on fines, victim restitution and mine safety improvements to resolve enforcement actions and some criminal matters arising from the Upper Big Branch Mine disaster.

Stonedusting in Queensland

There were a number of frictional ignitions and incidents of excessive gas levels in Queensland in the last 12 months. At the same time, there were a number of compliance actions by the Mines Inspectorate resulting from underground mines failing to comply with the current Queensland standard for stonedusting.

Ten men survived in the vicinity of the last Moura explosion because of effective stonedusting which contained the propagation of the explosion. Other system breakdowns occurred and led to the disaster but additional lives would have been lost without the effective stonedusting.

Although stonedusting to a high standard is required currently under the CMSH Regulation, it must be applied at a rate that prevents the buildup of too much coal float dust in the underground roadways. In the high production environments of modern underground coal mines it is often difficult to keep pace with this requirement. Explosion barriers provide a second line of defence in this event.

One of Queensland's 13 underground coal mines is installing stonedust bags as explosion barriers to reduce risk. The additional stonedusting costs are therefore, only quantified for the remaining 12 underground coal mines.

The proposed changes to stonedusting requirements to align with New South Wales will not stifle any future innovations and will still allow flexibility for the industry to utilise any new, effective methods of reducing the risk of coal dust explosion to the required standard. This is because the requirements will not be in the Act but will be in the Regulations which can be amended relatively quickly if there is strong support amongst stakeholders for any new proven technology as it emerges.

Further, it should also be possible to include in the Regulations that, should new technology be developed, the new technology can alternatively be used if it is demonstrated that the new technology achieves the required stonedusting or other relevant standard. The Chief Inspector may rely upon any scientific or engineering studies demonstrating the viability of the innovation in a similar way to how the Chief

Inspector is able to require an independent engineering study in relation to any risk arising out of mining operations.

Currently, there are no other viable alternatives to the stonedusting and explosion barrier proposals to reduce the risk of a coal dust explosion. In relation to explosion barriers, wet dusting has proven in the past to be non-effective as the dust congeals and cannot be raised into the mine atmosphere in the event of a gas explosion. A new product based on the 'wet dusting' technique, known as Airodust is currently under trial but has, as yet, not proven to be at an equivalent level of safety to current stone dusting techniques.

Water barriers are available currently for use and it is a matter of concentrated barriers as opposed to distributed barriers. Distributed barriers are preferable as the distances set for concentred barriers were establish at Bergbau Forschung at Essen in Germany in the late 50's to early 60's and are based on the explosive characteristics of German coals which are significantly different to Australian coals.

Water barriers are not precluded as explosion barriers from the proposal but most operators prefer distributed stonedust bags as water barriers are less efficient to use. The decision (water, stonedust, concentrated, distributed) in relation to explosion barriers under the proposals are at the discretion of the operator.

Active explosion devices are not new as they were trialled both in Poland and the USA in the past. The problem in the past and we have still not seen proof that any new system has solved the issue is related to the power source to activate the barrier. These devices are still unproven technology.

It is essential that mines stonedust to the required standard and mines should be correctly testing to ensure they are dusting to the required standard. If stonedusting falls below prescribed levels and an ignition of methane occurs, having stonedust bags as explosion inhibitors, reduces the risk of the ignition developing into a coal dust explosion, a much higher intensity explosion than a methane explosion, and propagating the explosion to other parts of the mine.

Mines are currently required to stonedust to a high standard and correctly test that they are maintaining the standard. There were a number of compliance actions by the Mines Inspectorate resulting from underground coal mines failing to comply with the standard for stonedusting. The Mines Inspectorate can shut down a mine if it fails to comply with the current standard or is not correctly testing. This could cost a mine more than $1 million day in revenue due to lost production. (The formula used for this very conservative estimate of one day's lost production revenue is annual production of saleable coal in tonnes over 363 days - excluding Christmas Day and Good Friday - multiplied by a coal price per tonne of $140. If annual production of coal at a particular mine is 2.8 million tonnes, a day of lost production costs $1 million in lost revenue. Coal production at some Queensland underground mines has exceeded 7 million tonnes per year and the coal price has gone higher than $300 per tonne for metallurgical coal)

Mines could still be shut temporarily even after the installation of stonedust bags, if they are still failing to stonedust to the required standard and correctly test, however, stonedust bags would minimise the seriousness of any explosions and are necessary to lower risk.

The stonedusting proposals are the only option for reducing risk.

The cost of the stonedusting proposals (stonedusting an underground roadway each 30 metres it advances, as it is developed rather than each 50 metres, as well as the explosion barriers) for all underground coal mines is estimated to be approximately $3 million per year, yet this cost or more could be realised in just two to three days, if a mine is required to suspend operations.

It is also not possible to predict with certainty how initiatives may lead to further improvements in lost time safety and health statistics. DNRM has also been addressing a number of other emerging safety and health concerns. Many will be addressed through the proposed amendments which are designed to further improve or fine tune the current requirements. The mining industry has been notified of these concerns, for example, through safety alerts and in the *Commissioner for Mine Safety and Health Annual Performance Report 2011–2012*.

Statutory certification

Audits by the Mines Inspectorate have shown that some mines are failing in their current statutory obligations to appoint competent persons to senior positions or not appointing people with the right competencies to the right positions in the management structure based upon industry's own established competency standards. Mines are already obliged, for example, to comply with CMSHA s. 55 'Management structure for safe operations at coal mines' and CMSHA s. 56 'Competencies of supervisors'.

There are significant problems with the competency of people appointed to roles having a major influence on the safety of a mine. Industry has had 14 years to properly implement its own competency standards and ensure safety critical roles are filled by competent people, but have failed despite repeated warnings from the inspectorate.

A brief review of the Mines Inspectorate's compliance databases has indicated at least 200 occurrences over the last five years of compliance action relating to deficiencies in competency and training. The Chief Inspectors and Commissioner for Mine Safety and Health have brought the concerns about competency to the attention of the leaders of industry for the past five years at the Annual Briefing to Mining and Quarrying Leaders. The same concerns were relayed repeatedly at the Annual Queensland Mining Industry Health and Safety Conference and in various other seminars and forums including a special meeting on 5 October 2012 called by the Commissioner for Mine Safety and Health and the Chef Inspector of Coal Mines with chief executive officers about concerns with an increasing number of serious incidents in both open cut and underground coal mines.

It is crucial that competent persons are appointed and that regulatory intervention occur at the earliest stage possible so that risks arising from lack of competency of people in roles having a major influence on safety are not present at a mine. It is a more proactive and effective approach to take action at the training and certification level and assist industry to ensure competency rather than continually issue directives to comply with the legislation whilst a mine continues to be exposed to risk without key competent persons, or in extreme cases require that a mine suspend production which can cost a mine $1 million or more per day.

Ensuring persons in statutory positions have the appropriate competencies and understand the critical mining principles and procedures will assist in ensuring safety and health standards are upheld, as well as achieving improved productivity at mines.

Appropriate transitional periods will apply for existing critical safety positions becoming statutory positions, and feedback from stakeholders about appropriate transitional periods is encouraged.

However, in relation to current statutory position requirements, mines may receive an increasing number of directives to ensure coal mine workers are competent, if those holding positions in the management structure do not have the industry's own established competency standards.

Inquiries and Coronial recommendations have consistently noted the need for more competency standards in the mining industry, not less.

Competency of those in existing safety critical positions is already required by the Acts and Regulations. Making existing safety critical positions statutory position holder positions is essentially related to additional training and certification requirements which is a form of auditing and greater assurance of competency.

It will not only provide greater assurance to the Regulator, but it will also provide greater assurance to operators and SSEs who are directly responsible for ensuring appointees have appropriate competencies. The Regulator has not been able to influence the quality of content of training being delivered by some Registered Training Organisations. Mines have not been training and/or testing their own people before appointments, so the assurance is provided by statutory certification which is a form of auditing by the Regulator.

Quantified costs

The complete cost analysis is at **Appendix I**.

Costs for Option 1

The total equivalent annual value of costs for Option 1 (based on a present value of costs over a 10 year period[3]) is $5.6 million per year. Of this, stonedusting requirements represent $3 million per year (less than nine cents/tonne of coal[4]), and the cost associated with certification of statutory positions is $2.6 million.

The breakdown of the costs for different types of mines is as follows:

- for underground coal mining the estimated equivalent annual value is $3.2 million per year. Underground coal mines bear the bulk of the costs due to the new stonedusting requirements. However, the benefits of disaster risk reduction also accrue to underground coal mine operators, their employees and coal mining communities.
- surface coal mining - $274 000
- underground metalliferous mining - $1.5 million
- surface metalliferous mining - $298 000

[3] Present value is the total value of the future benefit stream (ten years) in present day terms - this allows costs and benefits to be compared more easily.
[4] This is calculated based on 35,369,302 tonne of raw coal produced by underground coal mines in 2011-12 - http://mines.industry.qld.gov.au/assets/coal-stats-pdf/fyr_1112.pdf.

- quarries - $342 000.

Costs for Option 3

Option 3 is significantly more expensive with an equivalent annual value of $27.8 million per year (based on present value of costs over a 10 year period). This is driven by the high transition costs, as it is assumed miners will need to spend time learning the new legislation. There are also concerns about potential reductions in safety and health standards under the Model Act.

The breakdown of the costs per year for different types of mines is as follows:

- underground coal mining - $6.2 million
- surface coal mining - $13.1 million
- underground metalliferous mining - $3.7 million
- surface metalliferous mining - $3.5 million
- quarries - $1 million

Combined with these higher costs, replacing Queensland's existing mine safety and health legislation entirely with the Model Act would weaken key aspects of the current mining safety and health legislative framework developed after a series of mining disasters (as outlined in **Appendix G**) and introduce a less clear and precise legislative framework. Clear and precise legislation is a fundamental legislative principle and is covered in **Appendix J.**

In summary, the financial impacts of the four options covered in the RIS are:

Option 1	**Option 2**	**Option 3**	**Option 4 (status quo)**
Estimated equivalent annual value of costs of $5.6 million based on present value of costs over a 10 year period. This cost is offset by the illustrative quantification of benefits of a fall in injuries and reduced risk of a coal mining disaster which is $8.3 million in equivalent annual value. If this is compared to the annual value of costs above there is a positive result of an estimated equivalent annual value of $2.7 million).	The same as Option 1 however the one resulting Act from combining the CMSHA and MQSHA would be longer than each of the separate Acts. Information would be more difficult to read and find for the different mining industry sectors, as users would have to filter out provisions not relevant to their industry sector.	Estimated equivalent annual value of costs of $27.8 million based on present value of costs over a 10 year period.	The status quo has not been costed. A number of safety and health concerns would remain and there would be no consistency improvements in key technical and competency areas with New South Wales and Western Australia.

5. Consultation

5.1 Consultation to date

Industry and union representatives were involved for several years throughout the NMSF process through the NMSF Steering Group and non-core legislation working groups. DNRM has worked closely with the Queensland Resources Council (QRC), CCAA and the Construction Forestry Mining Energy Union (CFMEU) through the non-core Legislation Working Group. The codes of practice are being developed with input from QRC and CFMEU representatives.

DNRM has also provided updates and discussed proposed changes with industry and union representatives through the Advisory Committees, the Board of Examiners and other local meetings.

Consultation paper – Nationally consistent mine safety legislation June 2012

On 6 June 2012, DNRM released a consultation paper for comment. The paper gave an overview of Option 1 to Option 3 and indicated DNRM's preference for Option 1. Feedback on the consultation paper – indicated little support for Option 2 and instead the majority of responses strongly preferred Option 1.

Twenty eight responses to the consultation paper were received. Twenty two favoured Option 1, two favoured Option 2, and one response supported Option 3 but also expressed qualified support for option 1. One response expressed qualified support for Option 1 and Option 2. Another response strongly supported Option 3 but this response also supported Option 2 whilst strongly opposing Option 1. The basis for the strong support of Option 3 was the expectation that DNRM's preferred Option 1 may only provide a marginal benefit to Queensland but would disadvantage the remainder of Australia and companies managing employees across states.

Among the total responses, there was no explicit support for the status quo. Option 4 is the baseline against which Option 1 and Option 3 were assessed.

However, this consultation process did not include an assessment of costs associated with each option, and in June 2012, it was less apparent that the Model Act and core mine regulations may not be adopted by all jurisdictions.

Some of the issues raised in the responses related to: statutory positions; the approach to requiring mines to notify the regulator of additional high risk activities; and ISHR powers.

5.2 Upcoming consultation

Road shows

DNRM will conduct information sessions in Brisbane and at mining centres throughout Queensland during the consultation period of the RIS. The information sessions will provide the opportunity for mine workers, companies and others to gain information and speak with Inspectorate staff about the proposed amendments.

Locations for the information sessions include Emerald, Moranbah, Dysart, Mackay, Rockhampton, Blackwater, Moura, Mt Isa, Townsville, Brisbane and Toowoomba. Details of the information sessions including how to register can be found on DNRM's website <www.mines.industry.qld.gov.au>.

Other consultation

In addition, notice of release of the Consultation RIS will occur through existing media and communication channels including:

- ministerial media release;
- established email contacts for news and alerts including regional offices and SSEs at mines; and
- where possible, Industry magazines and publications.

Industry and union representatives previously involved in consultation processes will be notified by email and will be encouraged to circulate the Consultation RIS to their members.

There will be a consultation period of approximately two months. This is considered sufficient due to the large amount of consultation that has occurred to date through the NMSF Steering Group and legislative working group meetings and June 2012 Consultation Paper process.

The mechanism for stakeholder feedback will be advertised as follows:

RIS consultation

The Consultation RIS will be available for public submissions for a period of approximately two months.

DNRM will be holding information sessions in regional mining centres of Moranbah, Dysart, Mackay, Mount Isa, Emerald, Rockhampton, Blackwater, and Moura and in Townsville, Toowoomba and Brisbane to discuss the Consultation RIS and seek feedback. Information will be published on DNRM's website outlining the RIS process.

The Consultation RIS will be published and freely available on the DNRM website and Consult Queensland website <www.getinvolved.qld.gov.au>. Electronic copies will also be provided via email on request.

A public notice of the release of the Consultation RIS will be published in the Queensland Government Gazette.

Publishing submissions

Those written submissions not marked confidential will be published on DNRM's website or Consult Queensland website.

Writing submissions

You should use the template starting with the cover sheet with your details or your organisation's details and the name of a contact person. Reference the page number of the Consultation RIS and insert your comments adjacent to the page number.

Where possible, submissions should be lodged electronically, preferably in Microsoft Word or other text based formats.

Send submissions

The closing date for submissions to this Consultation RIS should be forwarded by mail, fax or e-mail to be received by DNRM by no later than 5pm on **11 November 2013**.

On line

Via the <www.getinvolved.qld.gov.au> Consult Queensland website

By e-mail:

nmsf@dnrm.qld.gov.au

E-mailed responses should include the words 'Mine Safety RIS' in the subject line.

By mail:

Mine Safety Consultation RIS

Safety and Health

Department of Natural Resources and Mines

PO Box 15126

City East Queensland 4002

By fax:

(07) 3237 1242

Following the consultation process, a Decision RIS will be prepared. The Decision RIS will be published on the <www.getinvolved.qld.gov.au> Consult Queensland website.

All respondents to the Consultation RIS will be notified via email when the Decision RIS is published.

6. Preferred option

Although there are costs associated with Option 1, primarily for the underground coal sector, these costs are offset by qualitative safety and health and/or consistency benefits. The preferred option is Option 1.

Expected safety and health and/or consistency benefits are described qualitatively in this RIS. The benefits have not been explicitly quantified. However, the benefits of the amendments are expected to be improved safety and health at Queensland mines, particularly underground coal mines, and greater consistency of laws with the other large mining States of New South Wales and Western Australia under the non-core NMSF COAG initiative.

Some of the non-core initiatives also respond to current strategic priorities of the Queensland Mines Inspectorate noted in the *Commissioner for Mine Safety and*

Health Annual Report 2011–12. The current Queensland mining safety and health legislation was developed in the aftermath of the 1994 Moura mining disaster that killed 11 workers. This disaster was the fourth disaster in 22 years, which killed a total of 53 workers. After the 1994 disaster, government, industry and unions worked closely to develop the current risk management based legislation.

Since the enactment of the CMSHA and the MQSHA Queensland's mining industry's safety and health performance has been among the best in the world. Consistent improvements were achieved other than for the last reporting period. This recent reversal in performance from the previous decade or more is of considerable concern. Implementing the changes outlined under Option 1 will ensure that the CMSHA and MQSHA continue to be fine-tuned and where possible improved with added rigour.

An outline of the key differences at Act level between Option 1 and Option 3 is included in **Appendix G**. The differences can have an impact on how clearly important non-core policy such as improved contractor management can be implemented. However, there are also a number of other features of the current Queensland mining safety and health legislative framework strongly preferred to the comparable approach under the Model Act due to effectiveness noted in **Appendix G**.

The Queensland Acts are based on a risk management model that requires the anticipation and control of problems before they arise. This is evidenced by:

- the safety and health management system
- proactive inspector's powers
- safety-oriented management structure
- a duty by all persons to ensure an acceptable level of risk.

Features of the Queensland framework that are superior to the Model Act framework include:

- focus on a systems approach
- vertical control of all activities on site
- acceptable level of risk—a proactive approach
- cooperation requirements
- workers' duties.

The proposed requirements for stonedusting and explosion barriers will lower the risk of another underground coal mining disaster. Installing explosion barriers will mitigate residual risks when stonedusting at coal mines falls below prescribed concentration levels. Some mines have failed to consistently meet prescribed concentration levels due to the pace of production. This has resulted in a number of compliance actions by the Mines Inspectorate.

Greater consistency reduces the regulatory burden and complexity of compliance for businesses with mining or quarrying operations in Queensland and in other states.

Consistency on key provisions proposed under Option 1 draws on the strengths of current legislation in the three major mining states and does not require Queensland to forego sovereignty on matters important to Queensland. National approaches to

regulation, even if limited to specific key components, can deliver benefits to all jurisdictions.

The Productivity Commission has acknowledged that national approaches to regulation, even if limited to specific key components related to technical and/or competency requirements, can deliver benefits to all jurisdictions (please see **Appendix C**). Although there is no data to robustly quantify these benefits, there are expected to be consistency benefits in key technical and competency areas compared to the status quo.

Maintaining the status quo would mean that current concerns including in relation to stonedusting and competency would not be addressed.

As detailed in Section 3.3 of this RIS and **Appendix G**, adopting the Model Act framework in its entirety would result in few improvements (other than those parts proposed to be adopted under Option 1) and in relation to some legislative aspects would diminish Queensland's current mining safety and health standards.

As the improved stonedusting requirements and existing critical safety positions becoming statutory positions (non-core initiatives) also apply under Option 3, these quantified costs are also included under Option 3. However, Option 3 is significantly more expensive due to the cost of transitioning from a well-established, clear and precise approach to mining safety and health to a general industry, generic Model Act approach that would involve significant retraining across the mining industry.

Option 1 will provide the clearest legislative approach (as discussed in **Appendix E)** to further reducing risks to safety and health through non-core initiatives such as improved contractor management, converting existing critical safety positions to statutory positions, and other initiatives that relate to non-core NMSF arrangements and current Queensland based strategic priorities.

The potential compliance cost benefits from harmonisation under Option 3 have been reduced due to some jurisdictions not adopting the Model Act or only adopting parts of it or changing parts of it or currently addressing issues associated with its effectiveness. Further information is provided in **Appendix F.**

The quantified costs for Option 1 relate almost totally to costs for improved stonedusting and existing critical safety positions becoming statutory positions. The majority of costs relate to improved stonedusting for the underground coal sector. Costs range from negligible to minimal for the other mining sectors. Option 1 is the best approach to addressing important priorities based on emerging mining safety and health concerns, at minimal cost compared to Option 3. Option 1 potentially provides significant safety and health benefits compared to the status quo.

7. Consistency with other policies and regulation

Competition Principles Agreement

The proposals under Option 1 do not restrict competition and are consistent with the Competition Principles Agreement.

Consistency with Fundamental Legislative Principles

Justification for potential inconsistency with Fundamental Legislative Principles is provided in **Appendix K** in relation to:

- clear and precise legislation
- whether legislation has sufficient regard to the rights and liberties of individuals
- whether legislation reverses the onus of proof without adequate justification
- institution of proceedings for offences
- immunity related to release of information regarding incidents by regulators
- delegation of legislative power.

8. Implementation, evaluation and compliance support strategy

8.1 Implementing the changes

Legislation

Following the consultation period, DNRM will analyse the submissions and prepare a Decision RIS based upon the analysis. DNRM is working towards introducing the legislative amendments into Parliament by early 2014. The timeframe for passage of the legislation will depend on how long the relevant Parliamentary Committee will need to examine the proposed legislation. The Parliamentary Committee may also conduct public and private hearings and invite interested parties to provide written submissions.

Not all of the approved amendments will take effect from the date Parliament passes the legislation. DNRM will discuss appropriate commencement dates with stakeholders so that impacts can be minimised and to allow time for industry and workers to transition to the new requirements.

Regulations

Once the proposed amendments are tabled in Parliament, DNRM will work with stakeholders to finalise changes to the Queensland Regulations. The commencement of the regulatory changes will coincide with changes to the CMSHA and MQSHA.

Codes of practice

In addition to the legislative and regulatory changes there will be codes of practice for specific matters such as winding systems, ventilation, ground control, vehicles and roads, and inrush hazards. These documents will provide guidance about technical matters. DNRM supports the development of codes of practice for mine safety that are as consistent as possible in relation to technical standards across all jurisdictions. It is expected that codes of practice will ultimately replace mine Recognised Standards (coal) and Guidelines (metalliferous). Codes recommended for adoption in Queensland will be submitted to the Advisory Committees formed under the CMSHA and MQSHA for endorsement.

Potential implementation issues and mitigation strategies

The most significant proposed changes relate to the additional stonedusting requirements and existing critical safety positions becoming statutory positions. The Mines Inspectorate is particularly interested in stakeholder responses about appropriate transitional periods for implementing these changes.

DNRM will ensure that there is sufficient lead up time to enable underground coal mines to install stonedust bags and that suppliers will be able to respond to the increased demand for the stonedust bags prior to any regulatory change.

It is unlikely that any of the Act or Regulation changes will commence before 1 September 2014 due to the requirement that legislative changes be referred to the relevant Parliamentary Committee prior to debate in Parliament.

It is expected there will be a transitioning of competency requirements for those positions which are already certified statutory positions other than for existing SSEs in the metalliferous sector who will complete a legislation examination, in a similar manner to SSEs in the coal sector who completed this requirement several years ago.

The reintroduction of statutory certification for those positions not currently certified statutory positions will take a period of time and it is proposed that a transition period be established to permit persons to prepare for an examination. If a candidate was appointed in line with legislative requirements it should not be too onerous to successfully pass the statutory qualification. Statutory certification will be obtained on the successful submission of a written examination in legislative knowledge and understanding and also a panel interview with three peers (two of whom are from industry, the third being an Inspector) who will question the candidate only on the competency modules required to hold the desired position.

The major mining states of Queensland, New South Wales and Western Australia (non-core states) intend to establish a new Tri-State Competency Advisory Council (TCAC) by administrative means to assist with ongoing implementation details and issues. TCAC would comprise a Chief Inspector from each state and three other members per state drawn from each State's Board of Examiners and a chair agreed by the Ministers of the mining portfolio for the three major mining states.

TCAC will provide advice on the competencies and positions requiring practising certificates and on maintenance of competencies and continuing professional development and recommend adoption by the state Boards of Examiners. TCAC will use specialist input for particular competencies.

Guidance and compliance support during the transition stages

The Mines Inspectorate will be able to provide guidance and compliance support during their inspections and audits at mine sites.

DNRM will also conduct compliance support forums in Brisbane and at mining centres throughout Queensland during the early stages of the transition period to provide guidance, compliance support and explain the changes to mine workers, companies and other stakeholders.

Locations for the compliance support forums will include Emerald, Moranbah, Dysart, Mackay, Rockhampton, Mt Isa, Townsville, Brisbane and Toowoomba.

DNRM will also provide guidance and compliance support through information on DNRM's website and via email to stakeholders who are currently registered to receive safety alerts and other material electronically.

8.2 Reviewing and evaluating the effectiveness of the changes

DNRM's role

DNRM will evaluate the effectiveness of the changes by continuing to monitor the safety performance of industry through inspections and audits; reviewing high potential incidents and other safety statistics; and discussions with stakeholders.

The Advisory Committees' role

Both the CMSHA and MQSHA have embedded review mechanisms requiring the respective Advisory Committees to periodically review the effectiveness of the Act, Regulations and guidelines. The Advisory Committees give advice and recommend to the Minister any changes needed to the Acts and/or Regulations.

Under the CMSHA and the MQSHA, the Advisory Committees are to meet at least twice a year.

Appendix A – Statistics

Queensland's mine safety and health performance analysis of lost time injury rates including tables and graphs

The very notable improvement in mining safety and health performance is reflected in the lost time injury frequency rate (LTIFR) tables and graphs from data collected across jurisdictions by the Minerals Council of Australia which was available up to 2008–09. The information is disaggregated into sub-categories such as open-cut coal and metals, underground coal and metals and quarries. Tables providing data from 1994–05 to 2008–09 and graphs for 2004-05 to 2008–09 are included below.

This is the most reliable data available for the years 2000–01 to 2008–09 and prior. Please note that New South Wales' data are collected based on a slightly different lost time injury frequency rate method.

Sub-categories are significant due to different hazards in different mining industry sectors and different types of mining in the largest mining states. New South Wales has predominately coal mining. Western Australia is almost exclusively metalliferous with numerous large scale remote iron ore operations and a couple of small open-cut coal mines. Queensland's mining industry is a combination of coal and metalliferous, with coal mining being Queensland's most valuable export industry.

There are substantially higher LTIFRs in the period 1994–95 to 1999–2000 in Queensland across all sub-categories. Based on these statistics, since 2000–01 to 2008–09 Queensland's LTIFR has trended downwards without any marked exception for underground coal, underground metalliferous, open cut coal or surface metalliferous mining

The trends within a particular state can be compared despite slightly different LTIFR definitions in each state during the data collection periods. Queensland's LTIFR for underground coal was 27 in 1999–2000 compared to 7.9 in 2008–09. This contrasts with New South Wales's LTIFR of 43 in 1999–2000 compared to 21 in 2008–09. Queensland's LTIFR for open cut coal was seven in 1999-2000 compared to 2.7 in 2008–09. New South Wales's LTIFR for open-cut coal was 21 in 1999–2000 compared to 8 in 2008–09.

Queensland has had zero fatalities from underground coal mining over the last five years.

The LTIFR for Queensland's underground metalliferous mines was 14 in 1999–2000 compared to 2.1 in 2008-09. For most of the years between 2003–04 to 2008–09, the Queensland LTIFR for underground metalliferous mines was better than that of Western Australia. For surface metalliferous mines, the Queensland improvement was a trend from 10 in 1999-2000 down to 3.1 in 2008-09. For surface metalliferous mines, Western Australia has dropped the rate from 7 in 1999-2000 to 3 in 2008–09. New South Wales has consistently lagged behind both Queensland and Western Australia in relation to underground metalliferous LTIFRs but has performed better in relation to surface metalliferous LTIFRs.

Although the trend downwards was less consistent for quarries, there has still been an improvement overall in Queensland since 2000-01 compared to the period 1994-2000. Queensland had the lowest LTIFR for quarries in Australia in 2008-09 at 5.6 compared to 16 in New South Wales and 7 in Western Australia. Queensland's

2008-09 improvement coincided with the extension of the more systematic approach through safety and health management systems to smaller Queensland mines and quarries**.**

Queensland only statistics for all mining sectors have been compiled from DNRM statistics and are also included below, after the comparison tables and graphs prepared from statistics collected by the Minerals Council of Australia.

State comparison of safety performance through 'lost time injury frequency' tables and graphs

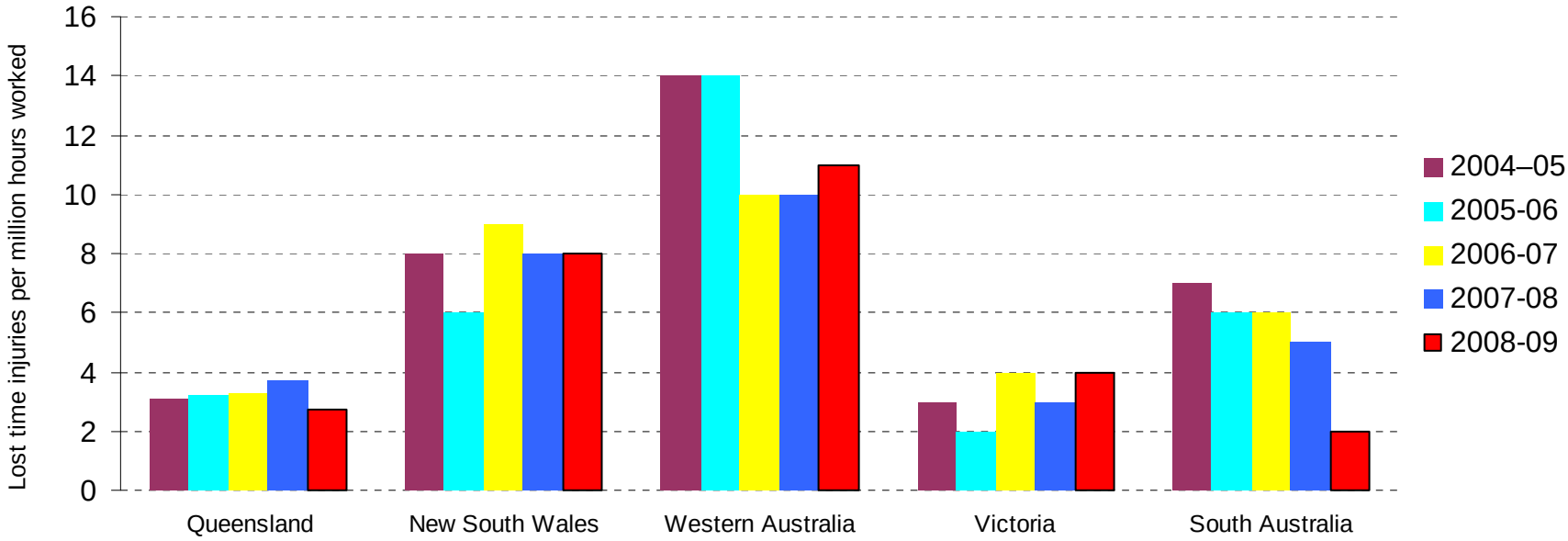
(Data collected by the Minerals Council of Australia, available up to 2008/09)

Open cut coal mining sector

State comparison of safety performance in open cut coal – table of lost time injury frequency rate

	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005-06	2006-07	2007-08	2008-09
Queensland	22	17	13	8	7	7	6	5	4	5	3.1	3.2	3.3	3.7	2.7
New South Wales	43	31	29	31	27	21	22	14	14	9	8	6	9	8	8
Western Australia	91	61	41	32	29	16	28	17	15	15	14	14	10	10	11
Victoria	7	4	3	5	8	9	11	4	6	3	3	2	4	3	4
South Australia	24	14	11	0	5	0	8	8	5	2	7	6	6	5	2
Tasmania	23	52	19	14	0	0	10	34	0	0	0	0	0	0	0
Australia	31	23	19	15	15	12	8	8	7	6	5	4	5	5	4

Graph of lost time injury frequency rates for open cut coal - financial years 2004 – 2009

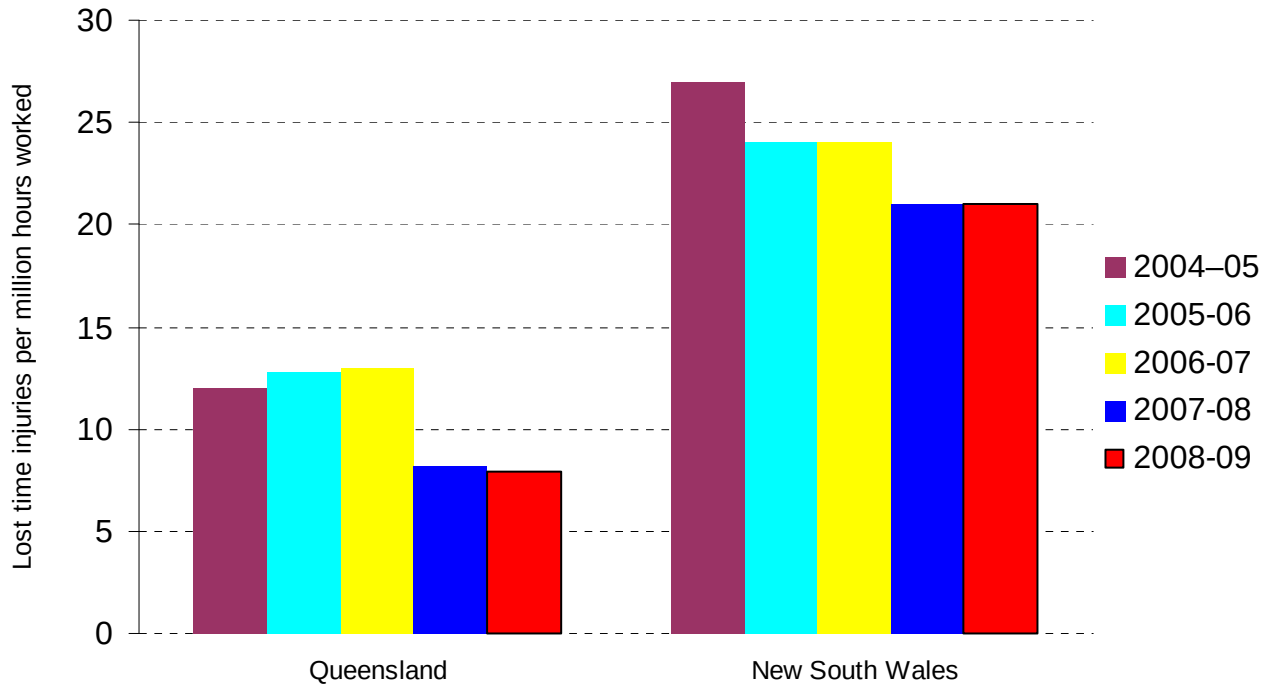


Underground coal mining sector

State comparison of safety performance in underground coal mines – lost time injury frequency rate

	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005-06	2006-07	2007-08	2008-09
Queensland	68	60	62	39	29	27	22	18	13.6	13.9	12	12.8	13	8.2	7.9
New South Wales	90	71	61	65	48	43	42	38	36	33	27	24	24	21	21

Graph of lost time injury frequency rates for underground coal mines in Queensland & New South Wales - financial years 2004 - 2009

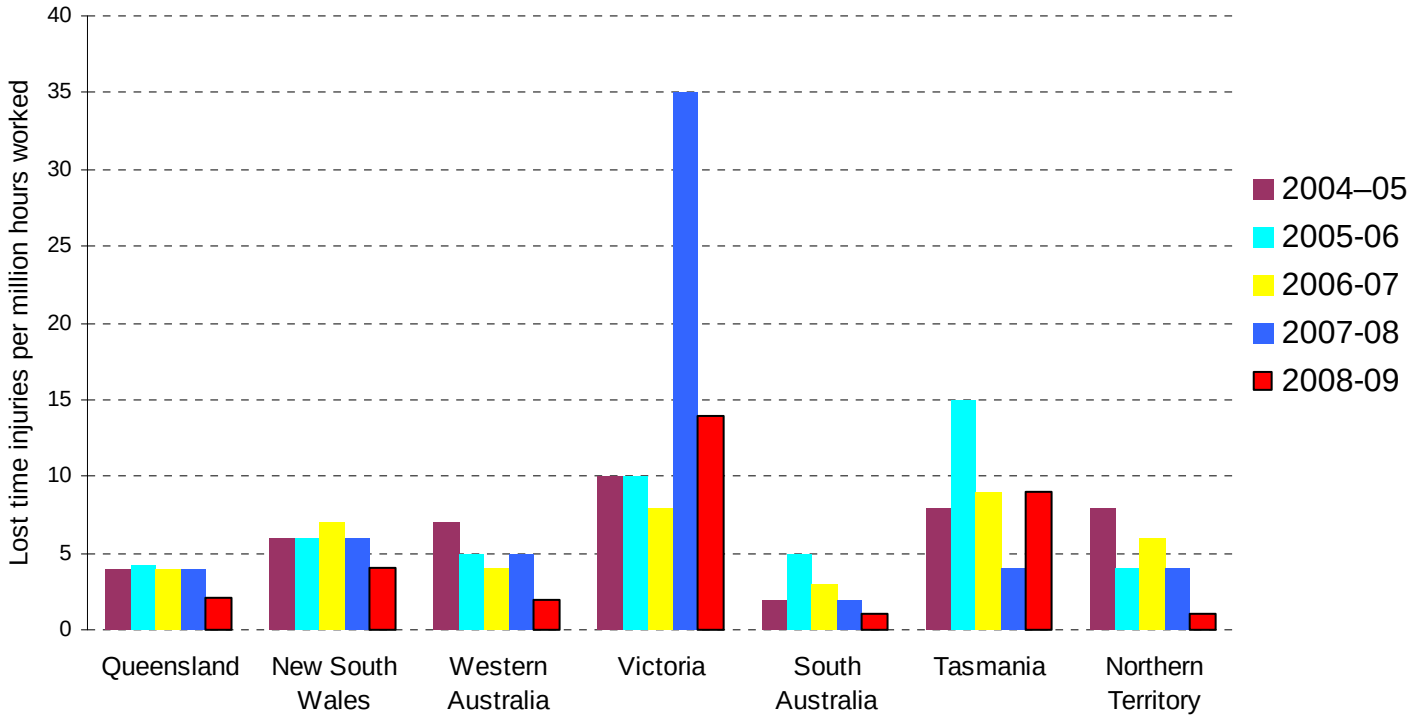


Underground metalliferous mining sector

State comparison of safety performance in underground metalliferous mines – lost time injury frequency rate

	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005-06	2006-07	2007-08	2008-09
Queensland	18	20	22	19	16	14	10	9	8.6	6.9	3.9	4.2	3.9	3.9	2.1
New South Wales	10	9	30	32	22	16	23	13	14	8	6	6	7	6	4
Western Australia	24	18	14	9	7	7	7	6	6	7	7	5	4	5	2
Victoria	18	20	45	30	14	11	9	10	16	9	10	10	8	35	14
South Australia	11	4	4	2	3	2	3	2	5	6	2	5	3	2	1
Tasmania	16	20	17	18	19	27	27	16	16	10	8	15	9	4	9
Northern Territory	12	14	14	8	8	11	7	9	12	12	8	4	6	4	1
Australia	17	16	19	16	12	12	13	9	9	8	6	6	5	4	2

Graph of lost time injury frequency rates for underground metalliferous mines – financial years 2004 – 2009

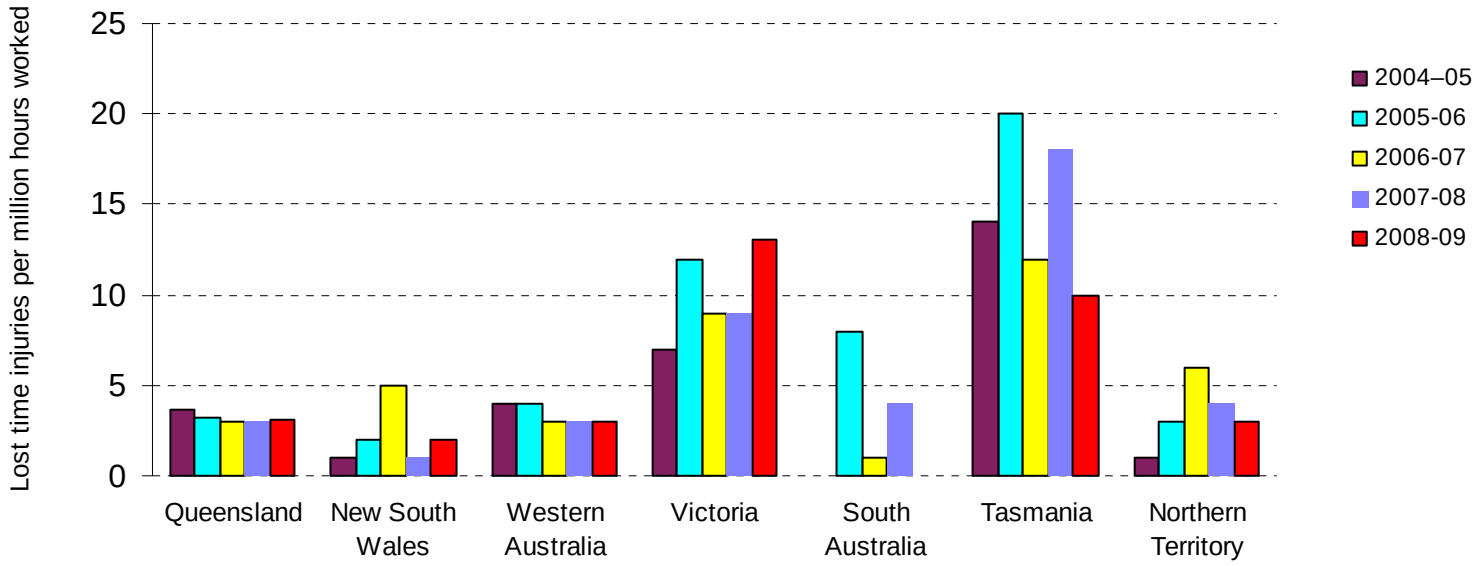


Surface metalliferous mining sector

State comparison of safety performance in surface metalliferous mines – lost time injury frequency rate

	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005-06	2006-07	2007-08	2008-09
Queensland	16	11	13	12	8	10	9	8	5.4	4.5	3.7	3.2	3	3	3.1
New South Wales	38	18	17	11	10	10	4	1	1	2	1	2	5	1	2
Western Australia	12	12	9	8	7	7	5	4	4	4	4	4	3	3	3
Victoria	20	22	10	24	18	7	0	22	7	13	7	12	9	9	13
South Australia	17	4	19	6	6	12	11	19	3	0	0	8	1	4	0
Tasmania	68	68	57	18	16	17	33	15	18	20	14	20	12	18	10
Northern Territory	11	7	5	7	7	9	11	7	5	6	1	3	6	4	3
Australia	13	12	10	9	7	8	6	5	4	4	4	4	4	3	3

Graph of lost time injury frequency rates for surface metalliferous mines – financial years 2004 – 2009

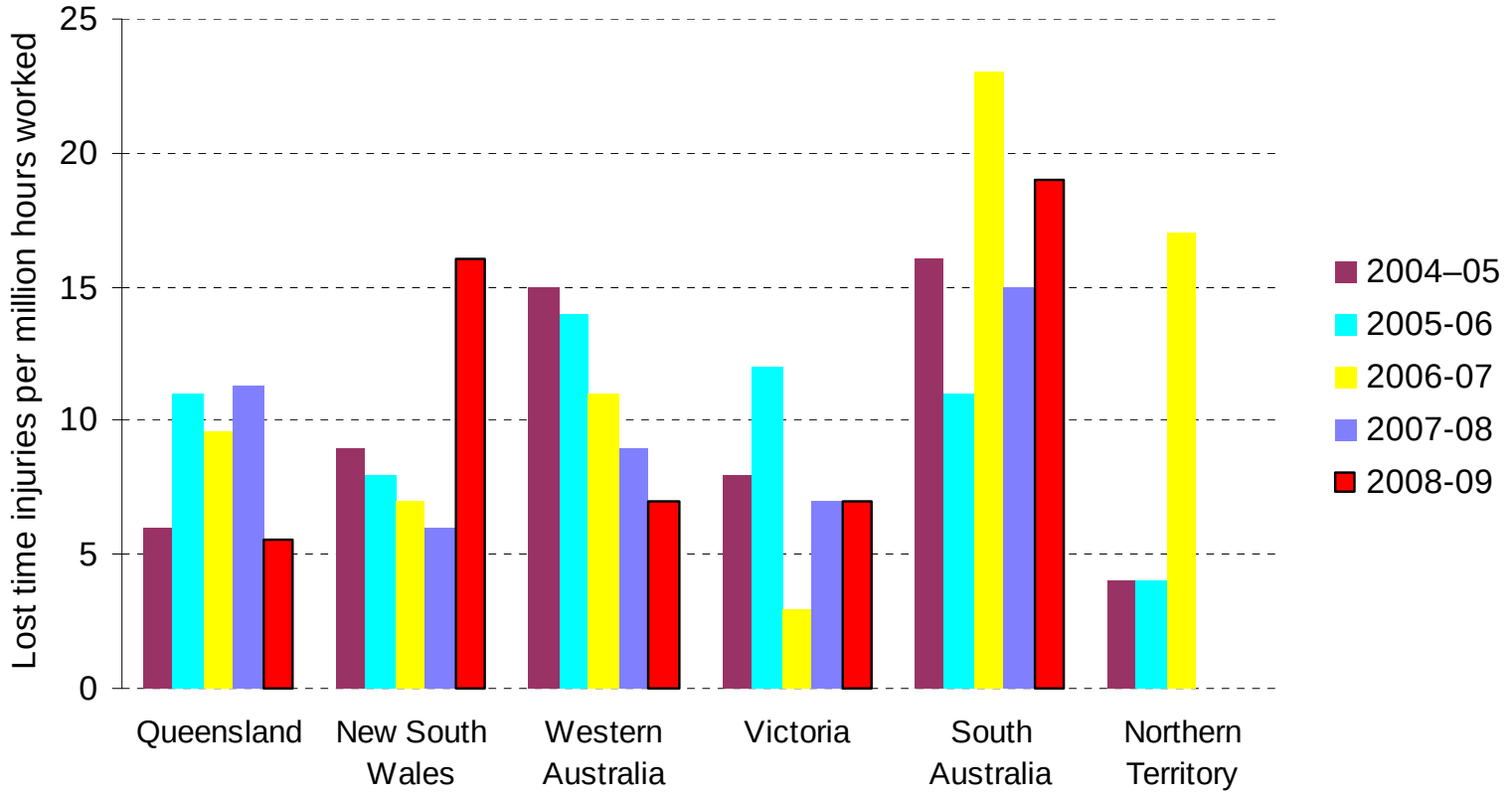


Quarries

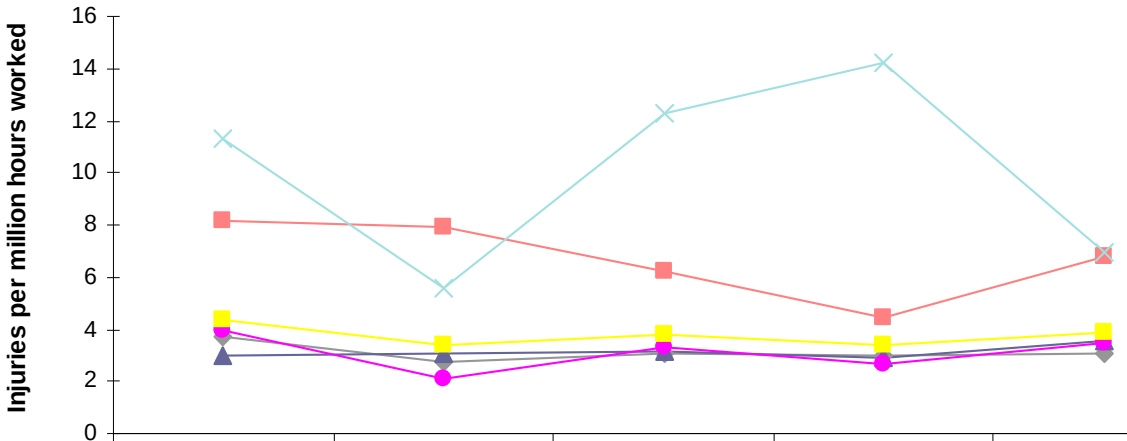
State comparison of safety performance in quarries – lost time injury frequency rate

	1994–95	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04	2004–05	2005-06	2006-07	2007-08	2008-09
Queensland	20	11	10	14	15	12	8	11	8	7	6	11	9.6	11.3	5.6
New South Wales	25	17	8	4	10	3	6	20	27	20	9	8	7	6	16
Western Australia	15	5	10	11	3	16	12	10	7	8	15	14	11	9	7
Victoria	18	16	21	17	18	19	15	14	9	8	8	12	3	7	7
South Australia	38	27	11	20	20	18	15	21	19	17	16	11	23	15	19
Northern Territory	29	12	3	12	17	12	0	16	3	6	4	4	17	0	0
Tasmania	24	17	18	14	3	4	0	4	23	3	0	0	0	0	0

Graph of lost time injury frequency rates for quarries - financial years 2004 – 2009



Graph of lost time injury frequency rates for Queensland (based on data provided to DNRM) - financial years 2007–12



	2007-08	2008-09	2009-10	2010-11	2011-12
Coal - surface	3.7	2.7	3.1	3.0	3.1
Coal - underground	8.2	7.9	6.2	4.4	6.8
Metalliferous - surface	3.0	3.1	3.1	2.9	3.6
Metalliferous - underground	3.9	2.1	3.3	2.6	3.4
Quarries	11.3	5.6	12.3	14.2	6.9
All operations	4.3	3.4	3.8	3.4	3.9

Lost time injuries frequency rate from 1994–1995 to 2011–12 (based on data provided to DNRM)

	1994 –95	1995 –96	1996 –97	1997 –98	1998 –99	1999– 2000	2000 –01	2001 –02	2002 –03	2003 –04	2004 –05	2005 –06	2006 –07	2007 –08	2008 –09	2009 –10	2010 –11	2011 –12
Coal surface	22.1	17.8	13.6	8.2	7.2	6.8	7.1	5.0	4.1	5.2	3.4	3.2	3.3	3.7	2.7	3.1	3.0	3.1
Coal underground	65.1	62.3	61.3	37.6	27.8	28.4	21.1	19.0	14.9	15.4	13.5	12.8	13.0	8.2	7.9	6.2	4.4	6.8
Coal subtotal	**30.9**	**27.4**	**24.7**	**16.3**	**13.4**	**13.1**	**11.2**	**8.3**	**6.4**	**7.4**	**5.5**	**4.9**	**5.1**	**4.6**	**3.7**	**3.7**	**3.3**	**3.9**
Metalliferous surface	17.8	16.1	13.3	12.1	8.3	9.2	9.5	8.3	6.0	4.7	4.0	3.2	3.0	3.0	3.1	3.1	2.9	3.6
Metalliferous underground	15.7	20.3	21.8	19.4	15.1	15.5	12.2	10.7	9.1	6.7	4.1	4.2	3.9	3.9	2.1	3.3	2.6	3.4
Metalliferous subtotal	**16.8**	**17.7**	**16.7**	**15.3**	**10.5**	**11.3**	**10.5**	**9.2**	**7.2**	**5.5**	**4.0**	**3.6**	**3.3**	**3.3**	**2.7**	**3.2**	**2.8**	**3.5**
Quarries	19.4	10.9	9.5	14.7	15.4	13.2	8.6	11.7	8.4	7.2	7.1	11.0	9.6	11.3	5.6	12.3	14.2	6.9
All operations	**24.6**	**22.6**	**20.9**	**15.7**	**11.9**	**12.2**	**10.8**	**8.8**	**6.8**	**6.6**	**5.0**	**4.7**	**4.6**	**4.3**	**3.4**	**3.8**	**3.4**	**3.9**

Appendix B - Principles underpinning Queensland involvement in Commonwealth-State/Territory Intergovernmental Activities

The Queensland Government has endorsed the following principles to guide involvement in Commonwealth-State intergovernmental activities. The key objective is to participate in those activities which deliver a benefit to Queensland and that align with Queensland's policy priorities and agenda.

Principle 1: Net benefit to Queensland that aligns to Queensland's policy priorities and agenda.
Principle 2: Decisions are made within the context of Queensland's whole-of-government priorities and policy agenda.
Principle 3: Costs imposed are not greater than benefits and reform does not cost more to administer than it delivers.
Principle 4: Commonwealth funding or co-contribution required from Queensland, is materially significant to both the Department's budget and to the Queensland budget.
Principle 5: Clear role for Queensland government leadership and does not represent an unnecessary intrusion into the private sector.
Principle 6: Improve outcomes for Queenslanders, and achieve the Queensland Government's priorities and policy agenda.
Principle 7: Cabinet Budget Review Committee to carefully consider participating in National Partnership Arrangements (NPA).
Principle 8: Cabinet Budget Review Committee to carefully consider participating in any National Partnership Agreements on the basis of the extent to which participation is likely to impact on Queensland's share of the goods and services tax.
Principle 9: Risk management strategy to ensure that implications of withdrawing our participation are clear.

Appendix C

Productivity Commission conclusions

The non-core NMSF process will achieve greater consistency in significant key areas across the major mining states, rather than uniformity of wording and structure of the Acts and Regulations due to the different legislative models to be used.

This can still be a significant achievement as the Productivity Commission Report – *Lessons for National Approaches to Regulation* has noted that substantial value can still be gained from the achievement of significant levels of consistency, when high levels of uniformity are not possible.

At page 5, the Productivity Commission takes a realistic approach.

> *'In practice, the process of developing and implementing national approaches to regulation can be costly and drawn out. There is much that must be negotiated, and even with the best of intentions, no guarantee that the agreed approach will be implemented consistently and hence lead to an improvement over existing arrangements. For these reasons, the likely net benefits need to be material, to warrant proceeding in the first place.'*

At page 6, the Productivity Commission noted there are a broad range of approaches to 'harmonisation' between uniformity and mutual recognition.

> *'Between uniformity and mutual recognition is a broad range of approaches to harmonisation — the various processes of aligning common elements of the regulatory systems of two or more jurisdictions. They can have some of the benefits of uniform regulation, while being more easily achieved.*
>
> *Harmonisation can provide a common basis for regulation through the adoption of consistent definitions, standards, certification requirements, conformance assessment procedures and other technical measures that underpin regulatory regimes.*
>
> *Furthermore, harmonisation can simplify mutual recognition. However, the compliance and administration costs associated with differing regimes are not fully eliminated under a harmonisation approach.*
>
> *All of these approaches can reduce the burden of regulation. A decision to pursue uniformity, harmonisation or mutual recognition fundamentally depends on the states and territories recognising that doing so will achieve material net benefits that warrant a national approach at the expense of some reduction in their exercise of sovereignty.'*

At page 7, the Productivity Commission noted it is common that there are barriers to consistency due to different regulatory architecture across State jurisdictions.

> *'The harmonisation of regulation is an important first step to greater national uniformity, but even this can be complicated by the fact that each*

jurisdiction has its own legislative drafting conventions, and its own institutional structure. For example:

- jurisdictions may have Acts that do not exist in other jurisdictions
- the scope of legislation can vary
- penalties for non-compliance and appeal mechanisms may differ
- interpretation Acts vary across jurisdictions
- terms used in legislation may have different definitions in different jurisdictions
- sections of Acts are numbered differently.'

At page 8, the Productivity Commission notes that governments and the communities they represent can have different attitudes to risk.

'Governments (and the communities they represent) can have different attitudes to risk, and these attitudes can result in different approaches to regulation. Generally, the more risk-averse the approach of a jurisdiction, the greater the costs of complying with its Regulations, and the more difficult it would be to align its Regulations with those of other, less risk-averse jurisdictions.'

At Page 15, the Productivity Commission distinguished between 'policy-relevant' standards and 'technical' standards.

At page 24, in relation to Model legislation, the Commission noted that jurisdictions may decide that there are core provisions and non-core provisions.

'The 'model' approach to legislation, regulations, standards and codes of practice involves the drafting of a model document that each participating jurisdiction draws on in drafting its own legislative instruments. The model may be drafted in various ways: as a bill of a particular jurisdiction, or as an attachment to an agreement or an act. The jurisdictions might also decide that there are core provisions that need to be adopted consistently and non-core provisions that don't.

This approach allows jurisdictions to adapt the model to suit their circumstances (including their regulatory architecture), drafting styles and political priorities, without necessarily creating inconsistencies between jurisdictions. It tends to be favoured by the states because, relative to the template model, it retains a greater degree of autonomy over the regulatory instruments concerned, both in terms of their introduction and their subsequent amendment.

The flexibility of the model approach can, however, result in inconsistencies. These can arise in the first instance when adapting the model, and over time as each jurisdiction sees fit to amend its own legislation, and do so in its own timeframe.'

At page 25, the Productivity Commission Report covered harmonising subordinate law and how significant levels of consistency can be achieved that way.

'Although differences in the regulatory architecture of the states and territories can make it difficult to enact nationally uniform legislation, significant levels of national consistency can be achieved through harmonising subordinate legislation.

This approach has been widely used in chemicals and plastics regulation.

Harmonising subordinate legislation is particularly appropriate for technical standards. While jurisdictions may have different regulatory architectures and different attitudes to risk, regulation is often underpinned by uncontroversial technical standards that can have universal application. With less institutional constraints at work, national consistency can be more readily achieved.'

The following are among the conclusions at pages 36-38.

'Whether a decentralised state-by-state approach or a more consistent national approach is in the public interest must be considered on a case-by-case basis. A variety of factors, such as the degree to which regulatory differences impact on administration and compliance costs, interjurisdictional spillovers, institutional constraints, and the need for tailoring the regulatory response to the circumstances prevailing in individual jurisdictions, must be considered.

Regulatory uniformity may not always be desirable or achievable, meaning that national approaches might need to draw on common regulatory elements (harmonisation), or be achieved through mutual recognition.

With a national focus, but limited constitutional powers, the Australian Government is largely restricted to playing a policy coordinating role.'

Appendix D – Changes related to the core mining Regulations and non-core policy

Core Mines Regulations

In addition to the general Model Regulations, throughout 2011 and 2012, Safe Work Australia developed Core Model Work Health and Safety (Mines) Regulations (Core Mines Regulations) in consultation with the NMSF Steering Group. However, the Core Mines Regulations have not been finalised as they have not been endorsed by all jurisdictions.

Queensland advised Safe Work Australia it will only adopt any Core Mines Regulations, or parts thereof, where there will be improvements to safety and health standards and/or to achieve greater consistency of provisions primarily with the other large mining states of New South Wales and Western Australia.

The Core Mines Regulations recognise that different jurisdictions will have jurisdictional note variations in relation to the meaning of mine, mining operations, mineral, principal mining hazard and mine holder due to differences in other local Acts and Regulations. Consequently, the existing key definitions in the CMSHA and MQSHA in relation to coal mine, mine, on-site activities, mine operator, notification requirements and so on are being retained.

The Core Mines Regulations will however, introduce greater consistency in relation to safety and health management system requirements across jurisdictions.

Developing greater consistency with New South Wales and Western Australia in relation to safety and health management systems including principal hazard management plans and principal control plans was a feature of the non-core consultations. Where possible the additional non-core policy will be built around the relevant core provisions however, the non-core will take precedence if there is inconsistency.

The CMSHA and the MQSHA already include comprehensive safety health management system requirements. Queensland led the nation in the introduction of this systematic approach at mines for all but the smaller mines in the metalliferous sector, after the last tragic Moura mine disaster. Currently, the only Queensland mines not required to have a single safety and health management system are opal or gem mines with no more than 10 workers (under s. 39(2)-(3) of the MQSHA). The Queensland Mines Inspectorate is working with these small mines to prepare them for the requirement to have a single safety and health management system. The current CMSHA and MQSHA provisions are already similar to the majority of the core and non-core policy relating to safety health management systems but will be fine-tuned with any additional core and non-core policy not already reflected in the current provisions. Any minor changes or additions are not expected to have any significant costs associated with them.

The Core Mines Regulations otherwise mostly contain regulations covering specific control measures, technical standards and topics otherwise already covered in the current Queensland Acts or Regulations. These remaining core provisions will be compared to current Queensland provisions and any relevant additional non-core policy. Again, the non-core policy and any existing higher standards will prevail if there is any inconsistency. Through the remaking of the Coal Mining Safety and

Health Regulation 2001 and Mining and Quarrying Safety and Health Regulation 2001 greater consistency of technical standards with other jurisdictions is expected to be achieved.

Non-core policy

The non-core policy Queensland developed with New South Wales and Western Australia includes greater consistency in relation to the structure and content of safety health management systems including principal hazard management plans and principal control plans.

This refocusing on principal hazard management plans and principal control plans is not expected to entail significant costs. The review that will be entailed is consistent with current statutory requirements to review and ensure the effectiveness of the safety and health management system.

The non-core policy otherwise reflects much that Queensland has already enacted under the current Queensland framework including: site senior executives; proactive inspector powers; explosion risk zones and gas monitoring for underground coal mines; incident investigation by the mine following a high potential incident or notifiable incident; release of information by the regulator regarding incidents; mine rescue requirements; and mine record requirements.

However, significant changes based upon non-core policy include: converting existing critical safety roles to statutory positions; the introduction of the Tri-State Competency Advisory Council as an administrative body ; fine tuning of requirements related to safety and health management systems and risk management; introduction of principal hazard management plans for metalliferous mines; requirements in relation to the national mine safety data base and notifiable incidents; a strengthening of provisions related to Boards of Inquiry; standardising a range of technical approaches through codes of practice.

Queensland does not propose adopting the full approach to notification of high risk activities and adopts a different approach for Queensland compared to New South Wales and Western Australia.

Health assessment and health monitoring will continue to be subject to intra-State differences due to States having different existing schemes although there is expected to be more consistency of some requirements based on core and non-core policy.

Appendix E – Description of proposed changes

Statutory positions

Rationale for statutory positions and key points

The concept of statutory certification was introduced in to the United Kingdom in the mid to late 1800's and was designed to ensure that persons in charge of key operations which could affect the safety and health of mine workers at an underground coal mine were trained and competent to hold the position. The testing of competency was in the purview of the Regulator. Over the years and as a consequence of many disasters and incidents the scope and range of competencies grew and in Queensland eventually encompassed not only underground coal but underground metalliferous mining and surface mining operations.

Through the years in Australia there were many commissions of inquiry, mining warden's and coronial inquiries following mining disasters and fatalities. Unfortunately, some recommendations related to increasing knowledge and the strengthening of the competency of statutory position holders continue to recur. This was particularly so for inquiries following major coal mining disasters such as New South Wales's Mount Kembla Royal Commission, the Inquiry following the last Moura disaster and New Zealand's Pike River Royal Commission which have all recommended emphasising the importance of the knowledge and competency of those in statutory roles. The recurring theme suggests that for some, the lessons still have not been sufficiently learned or maintained across the years. There is room for further improvement, as knowledge and competency are crucial.

With the advent of the new risk based legislation in Queensland in the late 1990's Queensland departed somewhat from the tried and tested system of a Board of Examiners made up of statutory qualified persons and examination panels made up of practising mine managers or mechanical or electrical engineers, (depending on the competency being examined), and moved toward industry based competencies established within the Australian Qualifications Framework. This was true for all but a few positions that were considered too critical to test by the new methodology including mine managers of underground operations, underground coal mine deputies and surface coal open cut examiners.

Neither New South Wales nor Western Australia elected to adopt that new method of competency assessment believing the existing model was sacrosanct and could not be amended, as historical data cautioned against any drastic departure from tried and proven methodology of competency assessment for safety critical roles. During the NMSF discussion, New South Wales and Western Australia held fast to that tenet and will not alter their position on either their testing regimes or the positions subjected to that test authority.

In Queensland, a gradual erosion of the competency system outside that controlled by the Regulator through the Board of Examiners (BOE) has been observed. The SSE at a mine is obligated under the mine safety and health Acts to ensure, under s.56 of the CMSHA and s.51 of the MQSHA, that all persons assigned to perform a task must be competent to do so. As a minimum the person so appointed must hold any competencies decreed by the respective Ministerial Advisory Committees. Additionally, a person in a senior position at the mine should be qualified to Australian Qualifications Framework 5 level and above, middle management level to at least Australian Qualifications Framework 4 and all other supervisory positions to

Australian Qualifications Framework 3. The competencies must also align with those developed by SkillsDMC, the National Industry Skills Centre for the Resources and Infrastructure Industry.

What the Queensland Mines Inspectorate has found and continues to find, for coal mining in particular, is that persons are being appointed to positions who do not meet the competency standards required by the respective Acts. Further evidence suggests that the standard of competency training and assessment provided by some registered training organisations is highly questionable. All too often the Queensland Mines Inspectorate hears of registered training organisations significantly reducing training course durations, not training on mine sites in realistic conditions or shortcutting assessments.

Thus to ensure competency standards are being met it is proposed that certain key safety positions have their competencies assessed and they all align with New South Wales and Western Australia. The critical safety positions were historically assessed by the Board of Examiners except for the underground coal mechanical engineer in charge position. This position has not previously been subject to Board of Examiner requirements in Queensland but as with all underground coal positions is strongly supported by those currently in post.

It is DNRM's contention that safety standards are slowly eroding due to persons being appointed who do not adequately comprehend the task at hand. A process cannot be managed effectively without comprehending the process. This is being demonstrated, not only in the increasing number of concerning incidents, but also in the declining safety standards and reduced productivity being observed. People are being promoted to supervisor level and above who do not understand legislative requirements, hazard identification or the risk management process. The Queensland Mines Inspectorate, continually through investigations or audits, uncover a poor basic understanding of the processes these people are required to be managing or supervising.

Productivity numbers for 2000 to 2012 (sourced from data collected by DNRM)

Year	Employees	Tonnes per annum (raw)
2000	8457	20 457
2005	16 786	13 500
2010	28 048	9812
2012	39 975	6230

The reintroduction of statutory certification for some existing critical safety positions will require a reasonable period of time and it is proposed that a transition period be established to permit people to prepare for an examination. If the candidate was appointed in line with legislative requirements, it should not be too onerous to successfully pass the statutory qualification. All that is required is the successful submission of a written examination in legislative knowledge and understanding and an interview with a panel of three peers (two of whom are from industry, the third being an inspector) who will question the candidate only on the competency modules required to hold the desired position.

The following table sets out where statutory certification is currently required and proposed future certification.

COAL UNDERGROUND Comparison of current and proposed statutory positions				
Coal Underground Mine Safety Positions	**Function currently exists at a Qld Mine**	**Position named in current Qld legislation**	**Certificate of competency or qualification required currently**	**Certificate of competency or qualification required under proposed amendments**
Section 1. Safety-critical positions, roles and functions which must be undertaken at the mine by holders of BOE-issued practising certificates				
Site Senior Executive	✓	✓	*	✓#
Underground Mine Manager	✓	✓	✓	✓
Deputy	✓	✓	✓	✓
Electrical Engineering Manager	✓	✓		✓
Mechanical Engineering Manager	✓	✓		✓
Ventilation Officer	✓	✓		✓
Undermanager (can be more than one)	✓	✓	✓	✓
Section 2. Important safety positions, roles and functions which must be undertaken at the mine by holders of prescribed and published qualifications or competencies (but not a BOE practising certificate)				
Mine Surveyor	✓	✓	✓	✓
Fire Officer	✓	✓	✓	✓
Roadway Dust Sampler	✓			✓
Section 3. Important safety positions, roles and functions which, if required to be undertaken at the mine, must be undertaken by a person with specified qualifications or competencies				
Supervisor	✓	✓	✓	✓
Shot Firer (person handling explosives)	✓	✓	✓	✓
Ventilation Auditor**				✓

* While they do not require BOE statutory certificates the SSE positions currently have to pass a legislation examination which is administered by the BOE Secretariat on behalf of the mine safety advisory committees.

An SSE for an underground coal mine will be required to have a First Class Mine Manager's Certificate of Competency

**The Ventilation Auditor name for the position is based on recent consultation with New South Wales (previously referred to as Ventilation Engineer).

COAL SURFACE Comparison of current and proposed statutory positions				
Coal Surface Mine Safety Positions	**Function currently exists at a Qld Mine**	**Position named in current Qld legislation**	**Certificate of competency or qualification required currently**	**Certificate of competency or qualification required under proposed amendments**
Section 1. Safety-critical positions, roles and functions which must be undertaken at the mine by holders of BOE-issued practising certificates				
Site Senior Executive	✓	✓	*	✓
Surface Mine Manager	✓			✓
Open Cut Examiner	✓	✓	✓	✓
Section 2. Important safety positions, roles and functions which must be undertaken at the mine by holders of prescribed and published qualifications or competencies (but not a BOE practising certificate)				
Mine Surveyor	✓	✓	✓	✓
Electrical Engineering Manager	✓	✓	✓	✓
Mechanical Engineering Manager	✓	✓		✓
Section 3. Important safety positions, roles and functions which, if required to be undertaken at the mine, must be undertaken by a person with specified qualifications or competencies				
Supervisor	✓	✓	✓	✓
Shot Firer	✓	✓	✓	✓

* While they do not require BOE statutory certificates the SSE positions have to pass a legislation examination which is administered by the BOE Secretariat on behalf of the mine safety advisory committees.

METALLIFEROUS UNDERGROUND Comparison of current and proposed statutory positions				
Metalliferous Underground Mine Safety Positions^	**Function currently exists at a Qld Mine**	**Position named in current Qld legislation**	**Certificate of competency or qualification required currently**	**Certificate of competency or qualification required under proposed amendments**
Section 1. Safety-critical positions, roles and functions which must be undertaken at the mine by holders of BOE-issued practising certificates				
Site Senior Executive*	✓	✓		✓
Underground Mine Manager	✓	✓	✓**	✓
Supervisor#	✓	✓		✓
Section 2. Important safety positions, roles and functions which must be undertaken at the mine by holders of prescribed and published qualifications or competencies (but not a BOE practising certificate)				
Mine Surveyor	✓	✓	✓	✓
Electrical Supervisor	✓	✓	✓	✓
Mechanical Supervisor	✓			✓
Section 3. Important safety positions, roles and functions which, if required to be undertaken at the mine, must be undertaken by a person with specified qualifications or competencies				
Ventilation Officer	✓			✓
Shot Firer (person handling explosives)	✓	✓	✓	✓
Radiation Safety Officer				✓
Supervisor	✓	✓	✓	✓

^ Not including opal or gemstone mines with fewer than five people
# The competency requirement will apply to the Underground Mine Supervisor in the proposed legislation. This specific position is not named in the current Queensland legislation; only the position of supervisor is named.
*NB Site Senior Executives of mines with fewer than five workers (small quarries, opal and gemstone mines) will be required to demonstrate a basic knowledge of their legislated obligations in order to obtain a practicing certificate.
** Metalliferous – Underground Mines (with more than 20 workers)

METALLIFEROUS SURFACE MINES AND QUARRIES Comparison of current and proposed statutory positions				
Metalliferous Surface Mines and Quarries Mine Safety Positions^	**Function currently exists at a Qld Mine**	**Position named in current Qld legislation**	**Certificate of competency or qualification required currently**	**Certificate of competency or qualification required under proposed amendments**
Section 1. Safety-critical positions, roles and functions which must be undertaken at the mine by holders of BOE-issued practicing certificates				
Site Senior Executive	✓	✓		✓
Surface Mine Manager / Quarry Manager	✓			✓***
Section 2. Important safety positions, roles and functions which must be undertaken at the mine by holders of prescribed and published qualifications or competencies (but not a BOE practising certificate)				
Mine Surveyor	✓	✓	✓#	✓
Electrical Supervisor	✓	✓	✓	✓
Mechanical Supervisor	✓			✓
Section 3. Important safety positions, roles and functions which, if required to be undertaken at the mine, must be undertaken by a person with specified qualifications or competencies				
Shot Firer (person handling explosives)	✓	✓	✓	✓

^ Not including opal or gemstone mines with fewer than five people

*** Metalliferous – Surface Mines and Quarries (with more than five workers)

not required for a surface mine where there are 10 or fewer workers unless directed otherwise by an inspector.

NB Site Senior Executives of mines with fewer than five workers (small quarries, opal and gemstone mines) will be required to demonstrate a basic knowledge of their legislated obligations in order to obtain a practicing certificate.

OPAL AND GEMSTONE MINES Comparison of current and proposed statutory positions				
Opal and Gemstone Mines with Fewer than Five Workers Mine Safety Positions	**Function currently exists at a Qld Mine**	**Position named in current Qld legislation**	**Certificate of competency or qualification required currently**	**Certificate of competency or qualification required under proposed amendments**
Section 1. Safety-critical positions, roles and functions which must be undertaken at the mine by holders of BOE-issued practicing certificates				
Site Senior Executive*	✓	✓		✓
Section 2. Important safety positions, roles and functions which must be undertaken at the mine by holders of prescribed and published qualifications or competencies (but not a BOE practicing certificate)				
Mine Surveyor	✓	✓	✓	
Electrical Supervisor	✓	✓	✓	
Section 3. Important safety positions, roles and functions which, if required to be undertaken at the mine, must be undertaken by a person with specified qualifications or competencies				
Shot Firer (person handling explosives)	✓	✓	✓	✓

*Site Senior Executives of mines with fewer than five workers (small quarries, opal and gemstone mines) will be required to demonstrate a basic knowledge of their legislated obligations in order to obtain a practicing certificate.

The NMSF has sought to create greater consistency through the Industry Competency Strategy which aims:

> *'to establish clear standards of competency for safety critical roles/functions within the mining industry; make it easier for companies to operate nationally; and remove artificial barriers to workforce movements between jurisdictions, thereby facilitating a national labour market.'*

Under this NMSF strategy, the 'non-core' Legislative Working Group has considered the roles within the mining industry that will have statutory requirements. This process has involved the three key steps of identifying:

- functions considered to be critical to the safe operation of a mine site;
- competencies required to carry out those functions; and
- evidence of those competencies (i.e. recognised courses of study; industry experience).

There will be three types of statutory roles for persons working at mines.

- Safety-critical positions, roles and functions – must have Board of Examiners-issued practising certificates.

- Safety-critical positions, roles and functions - must be undertaken at the mine by holders of Board of Examiners (or in Queensland's case Advisory Committee) prescribed competencies (but not a Board of Examiners practising certificate).
- Safety positions - qualifications or competencies set by the Board of Examiners or in Queensland's case the Advisory Committee.

Safety expertise at the operating level

Professor James Reason contends that 'commitment, competence and cognisance' fuel the safety engine. According to Reason commitment has two components; motivation and resources.

> *'High levels of commitment are comparatively rare and hard to sustain. This is why the organization's safety culture is so important. Top management come and go. More organizational leaders are appointed to revive sagging commercial fortunes than to improve indifferent safety records. A good safety culture, on the other hand, is something that endures beyond these palace revolutions and so provides the necessary driving force irrespective of the inclinations of the latest CEO. The second issue concerns the resources allocated to the achievement of safety goals. This is not just a matter of money. It concerns quality as well as quantity, and has with the calibre and status of the people assigned to direct the management of system safety'.*

Reason further states with respect to safety measures…'Simply implementing them is not enough. They have to be watched, worried about, tuned and adjusted'.[5]

Mining statutes recognise calibre and status of the statutory position holder and create the platform for safety measures to be watched, worried about, tuned and adjusted.

It is impossible to measure the ongoing safety contribution of the expertise exercised by statutory officials on an ongoing basis across the mining industry. Certainly the placement of statutory safety specialists with personal knowledge of hazards as 'old hands' at an involved level in day to day operations provides a level of assurance in the absence of a superior alternative at the operational level.

> *'It is ironic that many industries seem to be reducing the investment in human expertise, at the very time when they claim that human performance is a dominant contributor to accidents.'*
>
> *'Trying to squeeze more yield from a shrinking investment in human expertise will not help prevent the kinds of incidents and accidents that we label as human error after the fact.'*[6]

The assignment of specific specialist safety roles to statutory position holders provides for an optimum level of safety responsibility and accountability at the operational level.

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[5] Reason J. (1997) *Managing the risks of organizational accidents*, Ashgate Publishing Ltd, Farnham UK.
[6] Woods Professor David D., Dekker Professor Sidney, Cook Richard, Johannesen Leila and Sarter Nadine (2010) *Behind Human Error*, Ashgate Publishing; 2 edition.

There has long been recognition in legislation that mining is a skilled occupation. There were instances in the post war history of mining in Queensland where it was an offence to employ inexperienced miners. The Queensland Government Mining Journal records several instances of mines being fined for such an offence. Miners were also fined for entering a mine prior to pre-shift inspections and managers were fined for allowing miners to enter prior to pre-shift inspections. This is further evidence of the established historical need for mining expertise and hazard identification capabilities.

Summary of non-core statutory positions

The June 2012 Consultation Paper *Nationally consistent mine safety legislation* provided an initial overview of proposals for three types of competency based on the following tables. The schedule material covers the three types of competency:

- Section 1 lists safety-critical positions, roles and functions which must be undertaken at the mine by holders of Board of Examiners-issued practising certificates
- Section 2 lists safety-critical positions, roles and functions which must be undertaken at the mine by holders of Advisory Committee-recognised and published qualifications or competencies (but not a Board of Examiners practising certificate)
- Section 3 lists identified safety positions, roles and functions which, if required to be undertaken at the mine, must be undertaken by a person with specified qualifications or competencies set by the Advisory Committee.

The positions listed need not be full time depending on the size, risk and complexity of the mining operations.

There may be more than one person appointed to these statutory positions depending on the size, risk and complexity of the mining operations.

Section 1. Each mine operator must appoint a person with a practising certificate issued by the Board of Examiners to the following positions:	
Coal—underground	SSE underground mine manager undermanager (can be more than one) electrical engineering manager mechanical engineering manager ventilation officer deputy (an appropriate number)
Coal—surface	SSE

	surface mine manager open-cut examiner (an appropriate number)
Metalliferous and extractive—underground mines *(not including opal or gemstone mines with fewer than five people)*	SSE underground mine manager underground mine supervisor
Metalliferous and extractive—surface mines *(not including opal or gemstone mines with fewer than five people)*	SSE surface mine manager/quarry manager
Opal mines and gemstone mines with fewer than five people	SSE

Section 2. Each mine operator must appoint a person with qualifications or competencies prescribed by the Advisory Committees to the following positions:	
Coal—underground	mine surveyor fire officer roadway dust sampler
Coal—surface	mine surveyor electrical engineering manager mechanical engineering manager
Metalliferous and extractive mines *(not including opal or gemstone mines with fewer than five people)*	mine surveyor (not required for quarries and small mines) electrical supervisor mechanical supervisor

Section 3—When a mine operator appoints a person to the following positions, they must have competencies as prescribed by the Advisory Committees:

Coal—underground	ventilation engineer (now to be referred to as a ventilation auditor based upon recent consultation with New South Wales) supervisor shot firer
Coal—surface	supervisor shot firer
Metalliferous and extractive mines	ventilation officer shot firer radiation safety officer supervisor

Information circulated to the non-core Legislative Working Group

The following information was compiled and used for initial consultation with the non-core Legislative Working Group in late 2012. It outlines agreed functions for the positions and how these functions may be reflected as consistently as possible as statutory obligations or responsibilities in the legislation or Regulations of Queensland, New South Wales and Western Australia. The ventilation auditor position (for underground coal) included in the earlier table comparing current and proposed statutory positions is included with this name rather than ventilation engineer based upon recent consultation with New South Wales.

Those entrusted to fulfil these statutory positions or roles are at the frontline of safety and health at a mine. Collectively, they form the safety and health management structure at the mine and they are accountable for providing oversight of the management of mining hazards and risks.

The safety and health management oversight is based on the safety critical statutory positions having demonstrated higher competency levels than those workers they safeguard. Others rely upon their competence to ensure safety and health for all at a mine.

Principal hazards and risks exist at mines and have to be effectively managed or controlled through the overall safety and health management system and its components (e.g. principal hazard management plans). The following is particularly evident under the CMSHA. Specific statutory position holders such as the SSE and the underground mine manager are the most senior safety and health officers in the management structure present at a mine and have greater overall control and management, than other statutory position holders.

In some cases, under the CMSHA and Regulations, technical competency/skill hierarchies are created. This ensures that those with greater technical skills (e.g. underground mine manager) will not be subject to the direction and control of other statutory position holders with lesser technical skills in relation to technical matters (e.g. the SSE who may be more senior in the management structure). It may also clarify who has direction and control when more than one statutory position holder may have the required technical skills but one may be confined to more specialised responsibilities (e.g. ventilation officer compared to underground mine manager - see s. 60 and s.61 CMSHA)

Other statutory position holders (e.g. ventilation officer, electrical engineering manager) may be held accountable for the effective management or control of particular hazards and risks within the overall safety and health management system due to the specialised nature of the responsibilities required in relation to particular hazards or controls (e.g. air quality hazards; ventilation controls; electrical engineering controls, etc.)

As safety critical statutory positions include responsibility for technically managing particular hazards safely, those performing these roles must have appropriate competencies. The competencies (e.g. training, experience) may be determined in either of the following three ways:

- Board of Examiners issued practising certificates
- Advisory Committee prescribed and published qualifications or competencies

or

- Advisory Committees set specified qualifications or competencies.

By requiring a specific level of competence (based on training and experience) as prescribed by the Advisory Committees, for particular positions attached to particular responsibilities, there is greater assurance there will be a sufficiently high level of skill or capability among those within the management structure, being applied to the management of safety and health and the control of hazards and risks.

With Queensland, New South Wales and Western Australia having independently determined the training and experience required in the past there are currently, in some cases, workers with slightly different qualifications or competencies performing differently named and defined statutory roles across the different states, even though particular types of mines must manage the same type of mining hazards and risks.

Therefore, in relation to coal mining especially, there is minor misalignment between Queensland and New South Wales in relation to how some positions are defined and named and how competency is assessed.

In relation to coal mining, New South Wales has noted that Queensland has statutory positions that are similar to New South Wales but have different requirements in relation to competencies e.g. undermanager or deputies ticket; mechanical and electrical; in Queensland the Deputy is the ERZ controller.

If Queensland, New South Wales and Western Australia achieve commonly agreed:

- names for statutory positions
- broad functions and responsibilities under the Acts and Regulations
- competencies.

This will enable equivalence across occupations, quality control and, where required, the lifting of skill levels equivalently across New South Wales, Queensland and Western Australia.

It will reduce inefficiencies and regulatory burdens including substantial paperwork being sent across the states, due to current differences between the states and *Mutual Recognition Act 1992* complexities. One of the principles of mutual recognition is that registration in one jurisdiction is grounds for registration in another jurisdiction. It is good policy for jurisdictions to develop common requirements to qualify for the occupation and to perform the duties of the occupation.

The eventual goal is to establish the same competency standards across states or equivalence of occupations and activities (i.e. mutual recognition issues) through the Tri-State Competency Advisory Council (TCAC) (established administratively through a memorandum of understanding) which will have productivity and labour mobility benefits. Other Australian jurisdictions and New Zealand may also participate via administrative arrangements through TCAC across the jurisdictions.

The statutory position of SSE will be established consistently across Western Australia, New South Wales and Queensland for all categories of mine. Queensland will be retaining the current Queensland approach to the role of SSEs.

The most senior executive for health and safety located at or near the mine is the SSE. The responsibilities reflect this overall authority and control, not only over the operator's own workers managed by the SSE, but also over any contractors and contractors' workers in relation to an integrated single safety and health management system to be followed by all at a mine.

At some mines, the SSE may also be the mine holder or the mine operator. The mine holder/operator must appoint a natural person, if the holder/operator is not a natural person to fulfil this role of SSE.

The SSE will:

- ensure that the health and safety duties of the operator are fulfilled at a mine (e.g. one safety and health management system for the mine, compliance with legislation/Regulations, contractor coordination and integration with the one safety and health management system, appropriate management structure and expertise, provision for absences, shifts deputies and appropriate resources including financial are available for health and safety etc)
- be the primary on-site point of contact for regulators.

An SSE must:

- pass a legislation examination set by the Board of Examiners
- have risk management competency to the current Queensland G3 level or equivalent which requires competency to manage the whole risk management system
- have any other competencies set by the Board of Examiners for carrying out the responsibilities of a SSE.

Other safety and health statutory managers report to the SSE in a hierarchical fashion however, for coal, some (e.g. the underground mine manager) do not report to the SSE in relation to technical matters.

Recent Queensland proposals

There are also proposals to amend some current provisions in relation to the qualifications required for SSEs of underground coal mines and to make minor changes in relation to how long an underground coal mine manager may not be in attendance at a mine before being replaced by someone with a first class certificate of competency. Similar changes are proposed in relation to how long an underground mine manager for a metalliferous mine may be absent before being replaced.

An underground coal mine manager should only be away for a maximum of five days before appointing a similarly qualified individual to maintain control and management of the mine.

An individual with a second class certificate of competency or a deputy's certificate of competency can fill in for a maximum of five days provided the absent underground coal mine manager is still contactable. To increase consistency across the CMSHA and MQSHA, an underground mine manager under the MQSHA should only be absent for a maximum of five days before the operator or SSE appoints, in writing, another person to act as the underground mine manager during the absence.

In relation to the qualifications of SSEs and underground mine managers, the SSE is required to appoint an underground mine manager to control and manage the mine, if the SSE is not a qualified underground mine manager with a certificate of competency as a first class mine manager. This is a safety critical position for underground coal mines.

It is a requirement recognised for over a century that the hazards associated with underground coal mining must be properly managed. This has proven to be best achieved by those trained and assessed in the recognition of hazards specifically associated with underground coal mining and the application of controls to manage those risks and have achieved statutory competency in those matters.

As a consequence of the disaster at Moura 2 in August 1994, the Mining Warden recommended a strengthening of the training and competency of mining officials and this was recognised in the CMSHA. While other individuals including the SSE may be responsible for the finance and resources to ensure risk was at acceptable levels, the CMSHA confirmed that if the SSE was not the holder of a first class ticket there must not be blurred responsibilities and the underground mine manager must always be in control of and managing the underground operation.

There have however, been increasing incidents of arguably blurred responsibilities at underground coal mines and underground mine managers have not been seen in practice to have management and control of the mine. Instead less qualified individuals have been seen to have control and management, with the underground mine manager relegated to a less influential subordinate compliance role.

There will be greater risks in future as Queensland's coal mines become deeper. Most of the easy open cut coal has been won, or is the process of being won. From here on open cut coal becomes more difficult; as depth increases so does overburden to coal ratios but more importantly, high wall stability becomes a problem as does gas make.

Eventually there will be more underground mines and again, due principally to depth, strata and gas issues will become more and more significant. It is therefore

incumbent on everyone involved to ensure standards are strict, maintained and from the regulator's perspective, enforced. To do otherwise will court disaster.

As a first step to address risks that will become more widespread over time, it is proposed to transition to a requirement from 1 January 2015 (or later if a longer transitional period is considered necessary), the mine operator can only appoint a new SSE for an underground coal mine who has a first class certificate of competency as an underground mine manager.

The Queensland Coal Mining Safety and Health Advisory Committee has recommended that all statutory officials at a coal mine must be directly engaged by the operator so that they are employees of the operator and are not hired as contractors. This recommendation is in response to some contract statutory officials tending to only do the minimum requirements and being less comprehensively involved in the safety and health management systems at a mine, compared to those directly employed at a mine.

This is a concern as statutory position holders with certification from the Board of Examiners are at the front line of safety and health at a mine as they form the safety and health management structure at the mine. They are accountable for the consistent, effective management of hazards and risks at a mine. Others rely on their commitment and competence to ensure safety and health for all at the mine. The necessary commitment and thoroughness are more likely to develop and be sustained, if they are employed directly as employees rather than through some form of independent contracting where many will have minimal ongoing or no regular commitment to a particular mine or handful of mines.

However, DNRM is not really concerned about how the engagement takes place only that the arrangement is between the operator and a natural person who is Board of Examiners certified and the arrangement is generally exclusive to the one mine. Under the provisions there will have to be allowance for the operator moving the statutory position holder between mines to cover leave and absences and maybe even for less regular contracted statutory position holders for a small portion of time to cover the same.

This would achieve the policy objective of optimising the commitment of statutory position holders to a mine and an individual's knowledge of a particular mine and its safety and health management system. An individual's ongoing competence and commitment in these crucial roles will not be compromised through irregular, intermittent work across a significant number of mines. The key requirement is these statutory position holders provide generally exclusive, ongoing services, with limited exceptions for the mine. If there is a contractual arrangement rather than direct employment, this requirement includes that he/she can not delegate the work to any of his/her similarly qualified employees or subcontractors. If an individual is appointed to a statutory position at a mine that person must personally and regularly perform the work.

To avoid the regulatory burden of the Chief Inspector approving short term arrangements other than the regular statutory position holders, a minimum percentage of time at the one mine by the same statutory position holder could be regulated. In any exceptional circumstances, the Chief Inspector might have to approve variations to the percentage.

Submissions are encouraged from stakeholders, in relation to what the minimum percentage of time at the one mine should be and any related practical

considerations. For example, would 85 per cent of time as the minimum percentage strike a reasonable, practical balance that could be easily audited?

The policy is not proposed to be applied to statutory position holders with certification from the Board of Examiners at metalliferous mines or exploration sites.

The policy will not extend to SSEs on coal exploration sites. SSEs on coal exploration sites tend to only manage short term projects and may work across companies due to the short term or intermittent nature of the exploration work.

The Coal Mining Safety and Health Advisory Committee has also specifically recommended that the ventilation officer position require a statutory certificate issued by the Board of Examiners.

It is also proposed to implement this recommendation of the Coal Mining Safety and Health Advisory Committee.

Other statutory position holders

In addition to the SSE, a range of other statutory position holder certifications will be retained or introduced for existing positions, in Queensland depending on the category of mine. The statutory mine safety position holders have particular obligations, responsibilities or accountabilities within the integrated system of safety and health management.

For example, a ventilation officer is to be retained as a statutory position and is required to control the ventilation activities and standards at an underground coal mine. The tragic number of incidents in Australia and around the world, including the Pike River mining disaster, demonstrate the necessity of having a competent ventilation officer to manage the risks associated with gases and other ventilation related hazards.

Mechanical engineering manager and electrical engineering manager certification is needed to ensure there are managers with these technical competencies critical for the control of mechanical or electrical hazards or risks. For example, the size and power of mechanical equipment at a mine and maintenance requirements highlight the importance of a mechanical engineering manager.

Statutory positions relate to the management of hazards and risks at mines and are therefore, to be covered in legislative and/or regulatory provisions as consistently as possible across the major mining states of Queensland, New South Wales and Western Australia.

Current situation

Under the CMSHA and Regulation there are 21 existing positions with recognised competencies set by the Coal Mining Safety and Health Advisory Committee. Only three of those positions require practising certificates and SSEs are required to pass a written examination on Queensland coal mining safety legislation before appointment to an SSE position. The second class mine manager's certificate of competency is also issued by the Board of Examiners although it is not a prerequisite for any position.

Under the MQSHA and Regulation there are eight existing positions with competencies set by the Mining Safety and Health Advisory Committee. Only one of those positions requires a practising certificate.

Proposed changes

For coal mining the majority of the statutory positions proposed under the NMSF already exist in Queensland although the competency requirements may be different. For example, an electrical engineering manager for an underground coal mine does not require a practising certificate under the CMSHA at present but will under the NMSF proposals. Any statutory positions in Queensland that are not included in the NMSF framework will remain.

Under the proposed changes there will be 16 statutory positions for which practicing certificates will be required, 10 for coal mines and six for metalliferous mines and quarries, including opal and gem mines. The number of positions currently requiring a practicing certificate is five. The proposal to extend the number of statutory certificates from five to 16 will ensure a greater knowledge of the legislation and Regulations and consequently lift the safety and health standard at mines.

The competencies for statutory positions will be determined by TCAC and recommended to each states' Board of Examiners for adoption. In the table below, the overall generic functions for each non-core NMSF position are described as well as the relationship to risks and hazards.

Previous consultation with stakeholders across Queensland, New South Wales and Western Australia during the earlier development of the non-core drafting instructions cast the activities as duties for the respective statutory position holders.

However, depending on how strictly jurisdictions intend to follow the Model Act framework, the duties may instead all sit with the mine operator and the statutory position holders will be agents of the mine operator. The mine operator will have a responsibility to ensure that its agents are competent and must put someone in place with the required competencies.

Rather than using primarily less clear and less precise, principal-agent law, for example, based on either s. 244 of the Model Act headed 'Imputing conduct to bodies corporate' or s. 261 of the CMSHA or s. 240 of the MQSHA headed 'Responsibility of acts or omissions of representatives' (which will be retained), Queensland proposes developing amendments related to statutory position holders primarily around the current Queensland framework which more precisely and more clearly enables responsibilities or obligations to be specifically allocated to a particular statutory position holder as appropriate, including the SSE, underground mine manager and so on.

The mine operator is responsible for providing the resources and has overarching responsibility through the SSE.

It should be noted however, that s.244 of the Model Act does not provide a defence related to the issue of control. In contrast, the current comparable CMSHA and MQSHA provisions provide the defence of not being able to prevent the act or omission of the representative by the exercise of reasonable diligence.

Related to these framework differences which are seeking to achieve the same non-core policy outcomes, is the question of who is responsible for appointing particular

statutory position holders. Strictly under the Model Act framework a mine operator must appoint a person with a Practising Certificate issued by the Regulator (Board of Examiners) to the statutory positions in the following table.

However, in Queensland's case it will not always be the mine operator with the direct responsibility for a particular appointment even though the mine operator has overarching responsibility. In some cases, for example, the SSE or underground mine manager will be directly responsible for particular appointments.

The following positions require a Board of Examiners issued practicing certificate:

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
Coal underground		
Site senior executive	Development and implementation of the safety management system or safety and health management system to be followed by all at a mine.	Most senior officer at the mine in charge of resources (logistical and commercial) and safety and health, responsible to the mine operator. In addition to the generic function of development and implementation of the safety management system or safety and health management system to be followed by all at a mine, responsibilities reflect overall authority and control over the operator's workers and contractors through: • developing and maintaining a management structure that assists with the development and implementation of the single safety and health management system including ensuring that there are particular technical competencies among those carrying out safety critical work and that there is adequate supervision and control of operations on each shift and pre-shift inspections and other regular monitoring of the work environment, procedures, equipment and installations at the mine • being responsible for workers being trained so that they are competent • assigning tasks to statutory position holders and other non-specific positions such as supervisors only when they are competent to perform the task assigned

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		Also numerous more specific responsibilities under the regulations depending upon the type of mine e.g. for underground coal – ensuring the design, installation and maintenance of electrical equipment and installations are safe.
Underground mine manager	To control and manage all underground mining activities at the mine	Provides technical directions in relation to the technical control and management of the mining activities. Controls and manages the overall implementation of the safety and health management system so that all hazards and risks are effectively controlled as they relate to the underground workings of the mine. Controls and manages the overall monitoring of the effectiveness of the safety and health management system and oversees the competence of workers. Appoints a Deputy to control activities in 1 or more explosion risk zones. Appoints competent persons to control and manage mechanical and electrical activities of the mine. Also numerous more specific responsibilities under the Regulations.
Undermanager	To control and manage mining activities on his shift at the mine (under the direction of the underground mine manager)	Contributes to the effectiveness and flexibility of the management structure through a high level of risk management competency. The undermanager is present to provide risk management and technical expertise especially on back shifts and weekends when there is less management staff available. Assists the underground mine manager with the monitoring of the implementation of the safety and health management system and with complex technical

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		matters.
Electrical engineering manager	To control and manage the electrical engineering activities and standards at the mine (under the direction of the underground mine manager)	Responsibilities include the operation of all electrical energy sources and particularly flame proof and intrinsically safe equipment as used in explosion risk zones. Responsibilities are based on relevant qualifications to technically manage electrical hazards and risks. Assists more senior statutory positions with the monitoring of the implementation of the electrical engineering control plan. Provides advice to more senior statutory positions (SSE and underground mine manager) in relation to the design, selection, operation and maintenance of electrical systems. Reports logistically to the SSE and technically to the underground mine manager.
Mechanical engineering manager	To control and manage the mechanical engineering activities and standards at the mine (under the direction of the underground mine manager)	Responsibilities relate to the safe operation and maintenance of mechanical equipment. Responsibilities are based on relevant qualifications to technically manage mechanical energy hazards and risks for example associated with the size and power of mechanical equipment. Assists more senior statutory positions with the monitoring of the implementation of the mechanical engineering control plan. Provides advice to more senior statutory positions (SSE and underground mine manager) in relation to the selection, operation and maintenance of mechanical systems. Reports logistically to the SSE and technically to the underground mine

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		manager.
Ventilation officer	To control and manage the ventilation activities and standards at the mine (under the direction of the underground mine manager)	Directly responsible for the implementation of the mine ventilation system and the establishment of effective standards of ventilation for the mine. Assists more senior statutory positions with the monitoring of the effectiveness of the ventilation control plan. Subject to the direction and control of the underground mine manager. Also has more specific responsibilities related to ventilation under the Regulations.
Deputy	To control and manage mining activities on his shift at his assigned section of the mine (under the direction of the undermanager)	Contributes to the flexibility of the management structure by perhaps being responsible on particular shifts or for parts of the mine or back filling when the underground mine manager and undermanager are temporarily not in attendance at the mine. Deputise for the underground mine manager or undermanager for the maximum periods allowed under the Act. The deputy may have control of activities in 1 or more explosion risk zones. The deputy may directly supervise and control shotfiring activities. In relation to responsibilities under the Regulations, for example, the deputy may inspect permanent underground workshops for flammable gas before hot work is started and any other inspections needed under a risk assessment and the compliance with other requirements prescribed in Regulation.

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
Coal surface		
Site senior executive	Development and implementation of the safety management system or safety and health management system to be followed by all at a mine.	• most senior officer at the mine in charge of resources (logistical and commercial) and safety and health, responsible to the mine operator In addition to the generic function of development and implementation of the safety management system or safety and health management system to be followed by all at a mine, responsibilities reflect overall authority and control over the operator's workers and contractors through: • also developing and maintaining a management structure that assists with the development and implementation of the single safety and health management system including ensuring that there are particular technical competencies among those carrying out safety critical work and that there is adequate supervision and control of operations on each shift and pre-shift inspections and other regular monitoring of the work environment, procedures, equipment and installations at the mine • being responsible for workers being trained so that they are competent • assigning tasks to statutory position holders and other non-specific positions such as supervisors only when they are competent to perform the task assigned • appointing persons holding appropriate competencies to statutory positions – specifically open cut examiner's certificate of competency to carry out responsibilities and duties prescribed by regulation Also numerous more specific

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		responsibilities under the regulations depending upon the type of mine.
Surface mine manager	To control and manage mining activities at the mine	Provides technical directions in relation to the technical control and management of the mining activities (those mining activities prescribed in Regulation) based on practical and theoretical knowledge. Controls and manages the overall implementation of the safety and health management system so that all hazards and risks associated with 'mining activities' are effectively controlled. Controls and manages the overall monitoring of the effectiveness of the safety and health management system and oversees the competence of workers. Also has specific responsibilities under the Regulations.
Open cut examiner	To control and manage mining activities on his shift at the mine (under the direction of the mine manager)	Responsibilities related to surface excavations and mining activity include: • monitoring continuity of risk management – assessment, monitoring, and where necessary risk reduction • being present and contactable during mining activities around surface excavations to ensure the safety and health of those around the surface excavation • fulfilling duties given under the safety and health management system • inspecting the surface excavation and the mine near the excavation prior to activities and periodically to ensure risk is acceptable • taking action to reduce risk if necessary by erecting barriers or withdrawing persons • providing continuity of inspections, monitoring and reporting in the mine record, shift by shift • participating in developing,

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		reviewing and auditing the part of the mine's safety and health management system relating to mining activities around the excavation (provided it is within the examiner's competency) • technical directions to the OCE should only be given by those with competencies at least equivalent. • direct supervision of workers • may also have competencies (licence) for shotfiring
Metalliferous and extractive underground mines (not including opal or gemstone mines with less than five people):		
Site senior executive	Development and implementation of the safety management system or safety and health management system to be followed by all at a mine.	Most senior officer at the mine in charge of resources (logistical and commercial) and safety and health, responsible to the mine operator. In addition to the generic function of development and implementation of the safety management system or safety and health management system to be followed by all at a mine, responsibilities reflect overall authority and control over the operator's workers and contractors through: • also developing and maintaining a management structure that assists with the development and implementation of the single safety and health management system including ensuring that there are particular technical competencies among those carrying out safety critical work and that there is adequate supervision and control of operations on each shift and pre-shift inspections and other regular monitoring of the work environment, procedures, equipment and installations at the mine • being responsible for workers being trained so that they are competent • assigning tasks to statutory position

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		holders and other non-specific positions such as supervisors only when they are competent to perform the task assigned Also numerous more specific responsibilities under the regulations depending upon the type of mine.
Underground mine manager	To control and manage mining activities at the mine	Provides technical directions in relation to the technical control and management of the mining activities. Controls and manages the overall implementation of the safety and health management system so that all hazards and risks are effectively controlled. Controls and manages the overall monitoring of the effectiveness of the safety and health management system and oversees the competence of workers. Appoints competent persons to control and manage mechanical and electrical activities of the mine. Also has more specific responsibilities under the Regulations.
Underground mine supervisor	To control and manage mining activities on his shift at his assigned section of the mine (under the direction of the mine manager)	Contributes to the effectiveness and flexibility of the management structure through risk management competency. The underground mine supervisor is present to provide risk management expertise especially on back shifts and weekends. Assists the underground mine manager with the monitoring of the implementation of the safety and health management system and with complex technical matters.
Metalliferous and extractive surface mines (not including opal or gemstone mines with less than five people)		

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
Site senior executive	Development and implementation of the safety management system or safety and health management system to be followed by all at a mine.	Most senior officer at the mine in charge of resources (logistical and commercial) and safety and health, responsible to the mine operator. In addition to the generic function of development and implementation of the safety management system or safety and health management system to be followed by all at a mine, responsibilities reflect overall authority and control over the operator's workers and contractors through: • also developing and maintaining a management structure that assists with the development and implementation of the single safety and health management system including ensuring that there are particular technical competencies among those carrying out safety critical work and that there is adequate supervision and control of operations on each shift and pre-shift inspections and other regular monitoring of the work environment, procedures, equipment and installations at the mine • being responsible for workers being trained so that they are competent • assigning tasks to statutory position holders and other non-specific positions such as supervisors only when they are competent to perform the task assigned Also numerous more specific responsibilities under the regulations depending upon the type of mine.
Surface mine manager/quarry manager	To control and manage mining activities at the mine	Provides technical directions in relation to the technical control and management of the mining activities based on practical and theoretical knowledge. Controls and manages the overall implementation of the safety and health management system so that all hazards

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		and risks are effectively controlled. Controls and manages the overall monitoring of the effectiveness of the safety and health management system and oversees the competence of workers. Also, has more specific responsibilities under the Regulations.
Opal mines and gemstone mines with less than five people		
Site senior executive	Development and implementation of the safety management system or safety and health management system to be followed by all at a mine.	Most senior officer at the mine in charge of resources (logistical and commercial) and safety and health, responsible to the mine operator. In addition to the generic function of development and implementation of the safety management system or safety and health management system to be followed by all at a mine, responsibilities reflect overall authority and control over the operator's workers and contractors through: • also developing and maintaining a management structure (if required) that assists with the development and implementation of the single safety and health management system including ensuring that there are particular technical competencies among those carrying out safety critical work and that there is adequate supervision and control of operations on each shift and pre-shift inspections and other regular monitoring of the work environment, procedures, equipment and installations at the mine • being responsible for workers being trained so that they are competent • assigning tasks to any statutory position holders (if required) and other non-specific positions such as

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		supervisors only when they are competent to perform the task assigned Also specific responsibilities under the regulations depending upon the type of mine.

Qualifications or competencies will be prescribed by the Advisory Committees for the following positions:

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or regulations
Coal underground		
Mine surveyor	To control and manage surveying activities and standards at the mine	Responsible for accuracy of plans of mine workings.
Fire officer	Fire prevention and fire control systems	Responsible for — • inspecting, testing and maintaining all fire fighting equipment; • keeping records of the inspection, testing and maintenance of fire fighting equipment; • establishing fire prevention and control training needs and ensuring the training is carried out; • ensuring the currency of all fire fighting plans and procedures; • testing, and reporting on, the condition of the mine's communication

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or regulations
		system.
Roadway dust sampler	To take roadway dust samples and ascertain the incombustible content of the dust (reports to the underground mine manager)	Collect and have analysed dust samples to monitor safety and health according to any regulatory standards and the safety and health management system. Reports to the underground mine manager on all matters relating to compliance with inert dust standards.
Coal surface		
Mine surveyor	To control and manage surveying activities and standards at the mine	Responsible for accuracy of plans of mine workings.
Electrical engineering manager	To control and manage the electrical engineering activities and standards at the mine	Responsibilities are based on relevant qualifications to technically manage electrical hazards and risks. Assists more senior statutory positions with the monitoring of the implementation of the electrical engineering control plan. Provides advice to more senior statutory positions (SSE and surface mine manager) in relation to the design, selection, operation and maintenance of electrical systems. Reports logistically to the SSE and technically to the surface mine manager.
Mechanical engineering manager	to control and manage the Mechanical engineering activities and standards at the mine	Responsibilities relate to the safe operation and maintenance of mechanical equipment.

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or regulations
		Responsibilities are based on relevant qualifications to technically manage mechanical hazards and risks for example associated with the size and power of the mechanical equipment. Assists more senior statutory positions with the monitoring of the implementation of the mechanical engineering control plan. Provides advice to more senior statutory positions (SSE and Surface mine manager) in relation to the, selection, operation and maintenance of mechanical systems. Reports logistically to the SSE and technically to the underground mine manager.
Metalliferous and extractive mines (not including opal or gemstone mines with less than five people)		
Mine surveyor	To control and manage surveying activities and standards at the mine	Queensland suggests that a mine surveyor is not required for small mines with less than 5 people. Responsible for accuracy of plans of mine workings.
Electrical supervisor	To control and manage the electrical engineering activities and standards at the mine	Responsibilities are based on relevant qualifications to technically manage electrical hazards and risks. Monitors the implementation of the electrical engineering control plan. Provides advice to SSE in relation to the selection,

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or regulations
		operation and maintenance of electrical systems.
Mechanical supervisor	To control and manage the mechanical engineering activities and standards at the mine	Responsibilities relate to the safe operation and maintenance of mechanical equipment. Responsibilities are based on relevant qualifications to technically manage mechanical hazards and risks for example associated with the size and power of the mechanical equipment. Monitors the implementation of the mechanical engineering control plan. Provides advice to SSE in relation to the selection, operation and maintenance of mechanical systems.

Competent persons appointed to the following positions will assist in ensuring the effective implementation of the safety and health management system. They must have competencies determined and published by the Advisory Committees.

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
Coal underground		
Ventilation engineer (now to be referred to as a ventilation auditor based upon recent	To audit the ventilation control plan for the mine	There is an issue with different terminology and qualifications across New South Wales and Queensland in relation to ventilation positions VO and VE. This is a TCAC issue going forward to ensure consistency. Further discussions with New

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
consultation with NSW)		South Wales are required.
Supervisor	To supervise people	Responsible according to authorisation from the SSE to give directions to other workers in accordance with the safety and health management system.
Shotfirer	To carry out shotfiring activities at the mine	Through having recognised competencies a shotfirer will contribute to shotfiring being carried out under technically safe conditions (in relation to methane, ventilation, stonedusting etc) under the overall control and supervision of the underground mine manager or Deputy. Responsible for taking action if a shot misfires to ensure safety and providing a written record to those in charge of subsequent shifts. Responsible for keeping equipment for initiating explosions under control. Responsible for technical matters relating to isolating electrical circuits and radio transmission devices.
Coal surface		
Supervisor	To supervise people	Responsible according to authorisation from the SSE to give directions to other workers in accordance with the safety and health management system.
Shotfirer	To carry out shotfiring activities at the mine	Through having recognised competencies a shotfirer will contribute to shotfiring being carried out under technically safe conditions under the overall control and supervision of the Open cut examiner. Responsible for taking action if a shot misfires to ensure safety and providing a written record to those in charge of subsequent shifts. Responsible for keeping equipment for

Statutory position	Function to be performed by the person appointed to the statutory position	Key statutory obligations/responsibilities which may be drafted into the legislation or Regulations
		initiating explosions under control.
Metalliferous and extractive mines		
Ventilation officer	To control and manage the ventilation activities and standards at the mine	Directly responsible for the implementation of the mine ventilation system and the establishment of effective standards of ventilation for the mine. Assists more senior statutory positions with the monitoring of the effectiveness of the ventilation control plan. Subject to the direction and control of the underground mine manager. Also has more specific responsibilities related to ventilation under the Regulations.
Shotfirer	To carry out shotfiring activities at the mine	Through having recognised competencies a shotfirer will contribute to shotfiring being carried out under technically safe conditions under the overall control and supervision of the MM. Responsible for taking action if a shot misfires to ensure safety and providing a written record to those in charge of subsequent shifts. Responsible for keeping equipment for initiating explosions under control.
Radiation safety officer	(to be determined through further consultation)	Proposed to be based on details from non-core drafting instructions where the radiation officer is responsible for advising on matters relating to the implementation of the radiation management plan for the mine.
Supervisor	To supervise people	Responsible according to authorisation from the SSE to give directions to other workers in accordance with the safety and health management system.

The reforms related to competency requirements are intended to provide greater assurance about the quality of practitioners from other jurisdictions. This can also assist labour mobility.

However, the greater consistency will require a transitional period because the requirements can not be readily achieved in a short time. Stakeholders are therefore, encouraged to provide submissions in relation to appropriate transitional timeframes.

Stonedusting

A major hazard at underground coal mines is coal dust. The accumulation of coal dust was a factor in the Box Flat and three Moura mine disasters in Queensland which killed a total of 53 people.

Accumulations of fine coal dust in underground mine roadways have the potential to propagate explosions across large distances in underground workings. The mechanism involves ignition of an accumulation of methane which, apart from having the potential to cause a destructive explosion in its own right, suspends and ignites coal dust in front of its explosive shock wave. The coal dust suspended by the primary explosion continues to ignite and force further roadway dust into suspension creating a self propagating chain reaction that has the potential to travel great distances through the underground workings killing miners in the path of the explosions and sterilising mine assets. Coal dust explosions have a much higher destructive potential than methane explosions on their own. To put that in context, the explosion at Pike River in which 29 miners lost their lives was only a methane explosion.

To lower the probability of such a disaster occurring, it is necessary to maintain a high level of incombustible content within roadway dust. Stonedust or other explosion inhibitors can act as both a diluent for potentially combustible levels of coal dust, adsorbent of available heat and obstruction to oxygen and other gases from participating in the explosion. The probability of propagation of an explosion increases exponentially with a corresponding decrease in the amount of stonedust or explosion inhibitor present.

Current requirements and issues?

Currently in Queensland, underground coal mines are required to have a system in place to minimise the risk of coal dust explosion and to suppress a coal dust explosion limiting its propagation to other parts of the mine.

A mine must have a standard operating procedure for applying stonedust or another explosion inhibitor for suppressing coal dust explosions. Among other requirements, s.301 of the Coal Mining Safety and Health Regulation 2001 requires each 50 metre length of a roadway that is driven at the mine to be stonedusted, or treated with another coal dust explosion inhibitor immediately after the length is driven unless there is a sufficient make of water to prevent a coal dust explosion. The current legislation does not require the use of stonedust bags or other explosion barriers.

In comparison, New South Wales (through its mining Regulations) requires the use of stonedust bags or other explosion barriers and this more rigorous requirement was included in the non-core policy in relation to stonedusting.

Currently in Queensland, if an analysis of a roadway dust sample from an underground mine shows the dust does not comply with the incombustible material

content stated in s. 301(1) of the Coal Mining Safety and Health Regulation 2001, the underground mine manager must re-treat the area with stonedust or another explosion inhibitor either within 12 hours or 7 days of receiving the analysis result depending on the location.

Under s.30 of the CMSHA, management and operating systems must be put in place to achieve an acceptable level of risk. The systems must incorporate risk management elements and practices appropriate for each coal mine to, among other purposes, mitigate the potential adverse effects arising from residual risk. Explosion barriers will help to mitigate residual risks, if stonedusting at a mine falls below prescribed concentration levels.

It is essential mines stonedust to the required standard and mines should be correctly testing to ensure they are dusting to the standard. If stonedusting falls below prescribed levels and an ignition of methane occurs, having stonedust bags as explosion inhibitors, reduces the risk of the ignition developing into a coal dust explosion, a much higher intensity explosion than a methane explosion, and propagating the explosion to other parts of the mine.

Recent auditing by the Mines Inspectorate has revealed that at times, a number of Queensland underground mines have not been complying with the current Queensland requirements resulting in the need for compliance action. The Mines Inspectorate can suspend mining operations if a mine fails to comply with the current standard or is not correctly testing. This could cost more than $1 million per day in revenue due to lost production. (The formula for this very conservative estimate of one day's lost production revenue is annual production of saleable coal in tonnes over 363 days - excluding Christmas Day and Good Friday - multiplied by a coal price per tonne of $140. If annual production of coal at a particular mine is 2.8 million tonnes, a day of lost production costs $1 million in lost revenue. Coal production at some Queensland underground mines has exceeded 7 million tonnes per year and the coal price has gone higher than $300 per tonne for metallurgical coal)

Mines could still be shut temporarily even after the installation of stonedust bags or other explosion barriers, if they are still failing to stonedust to the required standard and correctly test, however, stonedust bags will minimise the seriousness of an explosions if it should occur and are necessary to lower risk.

The stonedusting proposals are the only option for reducing risk.

The cost of the stonedusting proposals (stonedusting each 30 metres of roadway, as well as the stonedust bags or other explosion barriers) for all underground coal mines is estimated to be approximately $3 million per year, yet this cost could be realised in just two to three days if a mine is required to suspend operations.

Proposed changes

The stonedusting requirements under s. 300 to s.303 of the Coal Mining Safety and Health Regulation 2001 will remain the same other than the following two exceptions.

Under the non-core proposals, the New South Wales position is to be adopted in s.301 of the Coal Mining Safety and Health Regulation 2001 so that the underground mine manager at a coal mine must ensure each 30 metres length of a roadway that

is being driven at the mine is stonedusted, or treated with another proven coal dust explosion inhibitor immediately after the length is driven rather than each 50 metres.

The reason to align with the New South Wales requirement of 30 metres rather than 50 metres as an appropriate distance at which to treat development roadways with incombustible dust is based on New South Wales following the Polish study of Coal Dust Explosions and Their Suppression by Waclaw Cybulski 1975 at page 251 published by the USA Bureau of Mines, Washington DC.

Page 257 of the Cybulski study contains graphs of explosion flame velocities versus length of the dangerous coal dust (in the explosion test tunnel) showing coal dust explosions take 30 metres to initiate after which the explosion flame velocity goes from 40 metres/second at 20 metres to 160 metres/second at 40 metres. Similarly the flame duration goes from zero to 1.5 seconds in 30 metres then up to 1.75 seconds at 40 metres and three seconds at 50 metres and continues climbing to a maximum of just over four seconds at 360 metres before reducing to just below three seconds at the 400 metre end of tunnel where the coal dust finishes.

The Cybulski study has not been challenged scientifically.

In addition to stonedusting a roadway every 30 metres, underground coal mines will be required to install stonedust bags or other explosion barriers. The options for barriers are fixed distributed, advanced distributed, fixed concentrated or advancing concentrated. Mines will have to determine the most appropriate type/s of barrier to install.

Stonedusting and future innovations

The stonedusting requirements will not stifle any future innovations and will still allow flexibility for the industry to use any new, effective methods of reducing the risk of coal dust explosion to the required standard.

This is because the requirements will not be in the Act but will be in the Queensland Regulations which can be amended relatively quickly if there is strong support across stakeholders for any new technology as it emerges.

Further, it should also be possible to include in the Queensland Regulations that should new stonedusting technology be developed, the new technology can alternatively be used if it is demonstrated that the new technology achieves the required stonedusting standard. The Chief Inspector may rely on any scientific or engineering studies demonstrating the viability of the innovation in a similar way to how the Chief Inspector is able to require an independent engineering study in relation to risks arising out of operations.

Currently, there are no other viable alternatives to the stonedusting and explosion barrier proposals to reduce the risk of a coal dust explosion. In relation to explosion barriers, wet dusting has proven in the past to be non-effective as the dust congeals and can not be raised in to the atmosphere in the event of a concussion. A new product based on the 'wet dusting' technique, known as Airodust is currently under trial but this, as yet has not proven to be at an equivalent level of acceptable risk to current stone dusting techniques.

Water barriers are available currently for use and it is a matter of concentrated barriers as opposed to distributed barriers. Distributed barriers are preferable as the distances set for concentred barriers were establish at Bergbau Forschung at Essen

in Germany in the late 1950's to early 1960's and are based on the explosive characteristics of German coals which are significantly different to Australian coals.

Water barriers are not precluded as explosion barriers from the proposal but most operators prefer distributed stone dust bags as water barriers are less efficient to use. The decision (water, stone dust, concentrated, distributed) in relation to explosion barriers under the proposals are at the discretion of the operator.

Active explosion devices are not new as they were trialled both in Poland and the USA in the past. The problem in the past and we have still not seen proof that any new system has solved the issue is related to the power source to activate the barrier. These devices are still unproven technology.

Improved contractor management through the single safety and health management system

What is proposed and why?

Improved contractor management through the single safety and health management system is non-core policy. The policy will add to the clarity and precision of current requirements under the CMSHA and MQSHA. It is clearer, more precise and less arguable to add the improved contractor management policy within the current legislative framework of Option 1 rather than the Model Act Option 3.

It is a sobering statistic that eight out of nine fatalities in coal mines and 10 out of 20 fatalities in metalliferous mines and quarries since the current legislation came into force in 2001 were contractors. On the whole, contractors tend to be less experienced in the mining industry than other workers. The increasing use of contractors and their overrepresentation (based on their proportion of the workforce) in fatalities indicates the importance that contractors be effectively managed at mines.

Further, it is crucial that a contractor who may irregularly work at a mine understands the mine environment and follows the robust safety disciplines necessary to effectively manage risk. Safety Alerts such as No 270 of 30 June 2011 (see **Appendix K)** starkly show the importance of effective contractor management.

It is essential that contractors comply with the single safety health management system and are effectively integrated within the single overall system. The safety and health management system at a mine is and will continue to be at the heart of Queensland's risk based mining Acts.

All mines are currently required to operate under a single safety and health management system developed specifically for each particular site by management in consultation with its workforce, however, requirements need to be further clarified. The safety and health management system identifies all hazards and is subject to risk assessment and regular audits to ensure it remains effective.

For coal mines, contained within the safety and health management system are the Principal Hazard Management Plans (PHMPs) and the Standard Operating Procedures (SOPs). PHMPs will be introduced for metalliferous mines.

The PHMPs and SOPs are the control plans that protect the safety and health of mine workers. All hazards are identified and then through a risk assessment process

the risk is mitigated through the identification and implementation of controls based on the hierarchy of controls.

It has always been the intent of the Acts that there would be one single safety and health management system at a mine as the risk assessment method conducted by management and a cross section of the workforce and would determine the safest and healthiest manner in which a task or control was to be undertaken and that all individuals on site would perform the task in the same manner.

However, Coronial inquiries surrounding two fatal incidents recommended that the legislation be made clear to ensure there be only one, 'a single' safety and health management system at a mine and all persons must comply with that system. The legislation was subsequently amended in 2011.

The Mines Inspectorate has not found widespread confusion at mines about how a single and effective safety and health management system can be achieved. However, some stakeholders including some mining operators, contractors and lawyers, and those new to the industry, despite the 2011 amendment, continue to question how a single and effective safety and health management system can be achieved. These stakeholders have pointed out that the legislation currently does not guide mine operators or contractors as to how they should work together to achieve the single safety and health management system.

Non-core policy

The non-core policy will provide further guidance about how a single and effective safety and health management system is to be achieved to make requirements as abundantly clear as possible.

The non-core provisions 9.15 to 9.21 which relate specifically to contractor management are modified slightly below according to the Queensland legislative framework (e.g. references to operator replaced with site senior executive [the operator's most senior on site representative] and no use of the PCBU term).

9:15 Where the services of another person (such as, without limitation, contractors, alliance partners and joint venture partners) are to be used in mining operations, the SSE has an obligation to provide the person (hereafter, 'the contractor') with all relevant information to allow the contractor to identify risks arising with respect to the proposed work to be conducted by the contractor.

9:16 The contractor must then provide the SSE with the Contractor Health and Safety Work Plan in relation to the work which sets out the work which the contractor proposes to adopt having regard to the risks to the health and safety of workers of the contractors and other persons who may be affected by the work in relation to their proposed work.

9:17 The SSE must review the Contractor Health and Safety Work Plan and assess any risks arising from the Contractor Health and Safety Work Plan to any worker or other person in relation to the mining operations including workers engaged by the contractor.

9:18 The SSE must notify the contractor of any risks identified as part of this review and, if necessary, require the contractor to review, revise and resubmit the Contractor Health and Safety Work Plan having regard to risks identified through the SSE's review of the Contractor Health and Safety Work Plan.

9:19 Once reviewed and revised as necessary in accordance with 9:18 above, the SSE must incorporate the Contractor Health and Safety Work Plan in the single safety management system for the mining operations.

9:20 No contractor activities are to commence at the mine until all workers engaged to conduct work for the contractor have been inducted in the mine safety management system (which in accordance with 9:19 will incorporate the Contractor Health and Safety Work Plan) and have received training in relation to any relevant hazards and risks at the mine.

9:21 The Safety Management System (revised to incorporate the Contractor Health and Safety Work Plan in accordance with 9:19) is the safety management system that will apply to the mining operations and which must be complied with by all workers at the mine (including the Contractor and workers of the contractor).

The non-core provisions further emphasise it is critical all personnel, whether mine employees or contractors, are trained and operate under the same safety rules for each task.

Relation to the current CMSHA and MQSHA provisions

Under the CMSHA and MQSHA, contractors can be workers such as self-employed contractors. Contractors can also be corporations who provide workers (whether their own employees or own contractors) to provide services at a mine through for example, contracting with the operator. Consequently, a provider of services may or may not be present at a mine. A self-employed contractor may also bring on to a mine, subcontractors to complete part of the work.

Currently there are provisions setting out the obligations of contractors and the obligations of providers of services at a mine in both the CMSHA and the MQSHA which could be enhanced based on the above non-core NMSF policy.

The definition of coal mine worker under the CMSHA means an individual who carries out work at a coal mine and includes the following individuals who carry out work at a coal mine – (a) an employee of the coal mine operator; (b) a contractor or employee of a contractor. Similarly the definition of worker under the MQSHA is an individual who carries out work at a mine and includes - (a) an employee of the operator; and (b) a contractor or employee of a contractor.

Under the CMSHA and the MQSHA, the mine operator and SSE are collectively responsible for establishing, and systematically implementing and monitoring the single safety and health management system. They are also responsible for auditing and reviewing the effectiveness of the safety and health management system to ensure risks to persons including workers (whatever the employment relationship) from mining operations are at an acceptable level.

The single safety and health management system provides overall effective control over the integration of work at a mine regardless of business arrangements with contractors who may for example, only work irregularly at a mine.

If a contractor is engaged to undertake tasks normally undertaken at the mine (for example: underground development drivages or truck and shovel operations) then the contractor's employees must be trained and assessed in the mine's safety and health management system.

Although contractors may have specialist expertise for their particular work at a mine they may not understand without assistance, the essential safety discipline and safety critical processes required at mines under the safety and health management system. Therefore, even contractors who may identify risks and controls for their own specialised work are not to be at odds with the single integrated safety and health management system and are to conduct their work in accordance with the overarching, single integrated safety and health management system. The same may apply for providers of services at mines who may also fall within the category of contractor.

On occasion, there may be instances where a contractor is engaged to undertake a specialist task that is not normally undertaken on site (for example: belt vulcanisation) and the mine's safety and health management system does not cater for that task.

In this event, the specialist contractor will present their operating safety system documentation and SOPs to the SSE who will review it to ensure there is no conflict with the existing single safety and health management system in force at the mine site.

If there is a conflict, the contractor's safety system must be altered to meet the site safety requirements and the contractor's employees trained and assessed in the alternate methods.

Of course, if the contractor believes they have a more effective safety system for the particular task, it can be discussed with the SSE. If the SSE agrees that the contractor does have a more effective system, the SSE should have a cross section of the workforce review and develop the system so that the mine's safety and health management system incorporates the better elements. The implementation of those new systems or sections should then include the retraining and assessment of all relevant personnel.

It is absolutely critical all mine workers use the same methodology and systems to achieve a task. It is a potential hazard if mine workers on a site could be working to different rules and objectives.

This single system approach ensures all personnel working on site are subject to the same and most effective safety rules for each task and are trained and assessed in these procedures.

Implementation of this policy under Option 1 compared to Option 3

This additional, clearer legislative backing will assist operators and SSE's with their ongoing management of contractors. Without legislative support that is as clear and precise as possible, operators and SSEs have to largely rely on negotiating and implementing contractual terms, conditions and remedies to manage contractors, as contractors are not employees.

If this non-core policy is read with the Model Act (Option 3) and relevant core mine provisions, the message is more convoluted and less clear. The essential integration can be more clearly and precisely implemented through Option 1 with a vertical command and control structure than Option 3's horizontally interacting PCBU approach where PCBUs can also be workers as well as PCBUs.

The Model Act introduces the concept of horizontally interacting PCBUs and the associated Model Act Code of Practice recommends common law contracts be used

to establish respective responsibilities between PCBUs and to try to enforce compliance between PCBUs.

If the Model Act were to be the prevailing legislative architecture, any attempt to create integration through the Regulations will be read subject to the overriding Model Act approach and relevant provisions. Regulation provisions are read subject to the overarching legislation and the Act and Regulations as a whole.

The core mining Regulations attempt to require a single integration of safety systems through the regulation covering the content of the safety health management system. However, it only goes so far because it seems to try to not be inconsistent with the overarching horizontal interacting PCBU concept in the Model Act.

The core mines Regulations cover contractor issues in regulation 621 (e) – (f) (version dated 9 August 2012) as part of the content of the mine operator's safety management system. The safety management system is to include the arrangements in place between any PCBUs for consultation, co-operation and the co-ordination of activities in relation to compliance with their duties. The safety management system is also to describe the control measures that will be used by the operator to control risks associated with the contractor's work. These control measures include how the operator will integrate the contractor's system, policies and procedures including competency requirements in to the operator's system and how the operator will monitor and evaluate compliance by the contractor with the operator's system.

However, the core provisions do not provide legislative backing to assist a statutory position holder such as a SSE on behalf of the operator to ensure the contractor will comply, and not be at odds, with the safety critical aspects of the single safety and health management system for the mine before a contractor begins work at the mine. The core provisions do not provide legislative backing to place requirements on a contractor to comply with the safety and health management system developed and implemented by the SSE, as is required by the non-core policy.

The core provisions only state that the operator's safety and health management system must include information about how contractors will be controlled and how contractors will be integrated. If a contractor PCBU refuses to consult, co-operate or co-ordinate, the relevant Model Act code of practice suggests a duty holder be reminded of general duties, and *'that written arrangements may help clarify everyone's expectations and that duty holders should consider including requirements in contracts to provide a contractual right to enforce against each other if necessary.'*

The relevant Model Act code of practice does not provide any examples of where the initial horizontal consultation should be developed into an integrated vertical command and control system. On page 17, the Model Act Code indicates some of the policy behind the Model Act s. 46 covering horizontal PCBUs with the same duty. For example, it is designed for contexts where nobody takes the necessary action because it is thought someone else is taking care of it. The Model Act Code says that *'you must ensure these requirements are met even if others may have the same duty…'*

Also, unless inquiries are made in relation to business structures, in some cases it could be unclear whether a contractor doing a particular task is a PCBU or worker or both (as different standards and consultation requirements apply depending on

whether a particular duty holder is a PCBU or worker). Compliance and regulation is more complex because business structure is relevant to duties and consultation.

Under the Model Act, obligations cannot be delegated and attempting to rely only on contractual arrangements was examined in the 2012 High Court case of Baiada Poultry v The Queen although the prosecution was under the current Victorian *Occupational Health and Safety Act 2004* rather than the Model Act with the horizontally interacting PCBU requirement.

The Victorian prosecutors argued that Baiada should and could have controlled its independent contractors and should have provided an adequate system of work. Baiada argued it did not have the right to control how the forklift was used or ensure it was operated by a properly trained employee, as it was within the control of the independent contractor. The Victorian prosecutors were trying to convict the employer Baiada for failing to exercise a theoretical right of direction and arguing that the employer cannot simply say it is entitled to rely on its independent contractors to outsource the problem.

Lawyers started speculating about how the High Court could interpret the Baiada case in light of the Model Act PCBU requirement in future because the case involved contractors. Prosecutors in many cases are likely to try to hold all PCBUs responsible to some degree as obligations can not be delegated. On their websites and as part of their emails alerts, some lawyers suggested that contractual arrangements will become increasingly relevant under the Model Act. This is likely to be contractually complex involving time and legal resources to negotiate and document.

It is likely to be a complex task in many cases under the general work health and safety regime compared to the clearer legislative backing support provided in the CMSHA and MQSHA for the integrated single system based on the operator's and SSE's safety and health management system.

The CMSHA and MQSHA clearly give the operator and SSE (with the greatest control and influence over the mine) the upper hand legally with the operator's pre-existing safety and health management system. Any contractor has to comply with the existing safety and health management system and if the contractor has some particular expertise to enhance the safety and health management system, the non-core proposals provide extra procedure around this. Arguably, this minimises time and money spent, negotiating horizontally and documenting contractually, as there is no need to try to contractually gain assurances or the upper hand, when the legislation says the operator and SSE are responsible for the safety and health management system and contractors must follow the single integrated system.

Important considerations are what are the tasks for the contractor and what are the skills required of the contractor and any related competency and training issues. The non-core requires that contractors must do certain requirements in order to co-operate and integrate, with the SSE having the upper hand legally. Option 1 ensures that there will be less need for contractual red tape.

Amending relevant sections

To implement the non-core policy as clearly as possible, it is proposed that the following ss. 42- 43 and 47 and 62 of the CMSHA and ss. 39-40 and 44 and 55 of the MQSHA be amended to also cover the above non-core policy (9.15-9.21) for the management of contractors (or for providers of services at mines who may also fall

within the category of contractor or who may need to be managed in a similar way to a contractor).

It is suggested that 9:15, 9:17 and 9:19 from the non-core provisions relate to the sections covering the obligations of a site senior executive (SSE) (s. 42 CMSHA and s. 39 MQSHA). These sections could be enhanced through the addition of the explicit requirement placed on SSEs to provide relevant information to contractors and providers of services, to emphasise the importance of this in relation to managing contractors and providers of services.

It will also emphasise the importance of the SSE reviewing and assessing any risks from the contractor's (or provider of services) work plan and after the contractor (or provider of services) has made any revisions required by the SSE, the SSE incorporating it into the single safety and health management system.

Section 43 and s.47 of the CMSHA and s 40 and s.44 of the MQSHA could be enhanced by capturing the policy in 9:16, 9:18 (including requiring contractors and providers of services to comply with any requirements of the SSE) and 9:20 above (i.e. no work to start until all workers have been inducted in the single safety and health management system and received training.

These sections could also be enhanced through the addition of a clear requirement (similar to s.41(1)(b) CMSHA) to also ensure through s.43 CMSHA and s.40 MQSHA that the contractor's own safety and health and the safety and health of others is not affected by the way the contractor works at the mine without limiting but including for example, maintenance of plant and how the contractor's work integrates with the single safety and health management system for the mine and the maintenance of safety critical systems.

Section 47 of the CMSHA and s. 44 of the MQSHA regarding the obligations of providers of services (who may or may not be present at a mine) could be enhanced in a similar way to s. 43 of the CMSHA and s. 40 of the MQSHA through the addition of a clear requirement to also ensure that if present at a mine, the service provider's own safety and health is not affected.

The sections already require providers of services to ensure that the safety and health of workers and other persons are not adversely affected as a result of the service provided. Section 47 of the CMSHA and s.44 of the MQSHA should also require providers of services at a mine to also have the same obligation as contractors (under s. 43 CMSHA and s. 40 MQSHA) to ensure to the extent that they relate to services provided by the provider of services that provisions of the Act and the safety and health management system are complied with.

Section 62(3) of the CMSHA and s. 55(3) of the MQSHA could be enhanced by also including a description of the control measures that will be used to control risks to health and safety associated with the work of contractors at a mine. This would include how any of the contractor's systems will be integrated with the single safety and health management system and how general monitoring and evaluating includes monitoring and evaluating compliance by contractors with the safety and health management system.

It is also proposed adequate monitoring and evaluating of contractors and providers of services be added as an additional obligation placed on SSEs under s. 42(f) of the CMSHA and s. 39(f) of the MQSHA.

Therefore, under the CMSHA and MQSHA, operators and SSEs (with the greatest control and influence over a mine) are given the upper hand legally through the legislation, with a pre-existing safety and health management system. Any contractor has to comply with an existing safety and health management system. The additional non-core proposals provide some extra procedure to assist SSEs and operators review and revise and incorporate any contractor work plans whether the contractor is an expert or a non-expert.

Therefore, a clearer vertical command enables operators and SSEs to more easily:

- assess contractors including whether they have sufficient training, skills, expertise and resources and where contractors may have specialised expertise how this integrates with essential mining safety requirements
- ensure a contractor follows essential information provided to them from the safety and health management system in relation to hazards and how the contractor's work must respect those systems and how the contractor will integrate with the essential safety systems of the mine.

Notification of high risk activities

Non-core policy

Through the non-core NMSF, New South Wales, Western Australia and Queensland have compiled a schedule of high risk mining activities (refer to **Appendix L)**.

For New South Wales, notifications will be a modified version of their current approvals system where industry must work within the turnaround times of the Regulator who allows the high risk activities to be conducted.

However, Queensland does not agree that there is a need for mandatory notification (at specified set intervals prior to a high risk activity) to the Regulator of all of these high risk activities before the high risk activities can be conducted.

Current Queensland notifications

Within the CMSHA, Queensland only currently requires notification to an inspector about the high risk activity of sealing operations at a coal mine prior to the activity being conducted. The Queensland CMSH Regulation also covers notification in relation to sealing activities, secondary workings and hot work (within seven days of the work being done). This will be retained in the Act and when the Regulation is remade.

For metalliferous mining, Queensland only currently requires notifications in relation to introducing and disconnecting electricity and major hazard facilities and possible major hazard facilities. This will also be retained.

What is proposed and why?

Queensland will have a provision that notifications 'may' be required by the Chief Inspector. Queensland considers the mines should be doing the planning and risk management associated with the high risk activities now as part of good practice. It is envisaged that it would be rare that the Chief Inspector would require a mine to submit the paper work to the regulator.

It may be required to be submitted for a period, for example, if after audits by inspectors it is found that the mine is not doing the appropriate risk management

planning. It is arguable that under the Acts (CMSHA and MQSHA) our inspectors could already require production of documents in relation to risk managing high risks, under their general powers to require production of documents.

However, in relation to all other high risk activities identified in the non-core NMSF schedule, Queensland will not require mandatory notification to the Regulator prior to the activities being undertaken as a routine matter of course.

Instead Queensland mining inspectors regulate other high risk activities through systematic auditing and inspections during onsite visits and do not require paperwork to be submitted for notification or approval to the Regulator and for industry to wait for the Regulator to officially sign off on the entire list of high risk activities. The systematic auditing during onsite visits also enables the Queensland mining inspectors to engage with, educate and mentor industry stakeholders during the visits. They therefore, audit and inspect systematically at mines and only intervene if there are any safety and health concerns, rather than requiring paperwork to be submitted for notification or approval of high risk activities.

If the Option 3 approach to notifications was introduced in Queensland there would be a diversion of scarce inspectorate resources to a focus on additional paperwork submitted to Government offices rather than on proactive engagement that can occur during onsite auditing.

This would be a considerable regulatory burden for all parties concerned and submitted paperwork would not necessarily identify safety or health issues.

Queensland however, recognises operators should be managing the information in the schedule relating to the full list of high risk activities in **Appendix L** as part of their systematic risk management processes. Therefore, there is value in highlighting this in a new schedule to the Queensland Regulations. This information would also ordinarily be part of the auditing and inspections conducted by inspectors at mines.

As a compromise to achieve a degree of consistency with New South Wales and Western Australia, Queensland proposes having an additional, specific discretionary power in the CMSHA and MQSHA where notifications prior to conducting high risk activities (other than for existing mandatory notifications) listed in the schedule to the Queensland Regulations *may* be required.

The chief inspectors under the CMSHA and the MQSHA *may* require notification before any of the activities to be listed in the schedule of the Queensland Regulations can be undertaken. This will provide the chief inspectors with the option of requiring the submission of information prior to particular high risk activity occurring at a particular mine, in addition to the current audit approach where an inspector already can require information about risk management processes to be provided.

If operators are currently exercising proper diligence, the Mines Inspectorate suggests they will be doing this comprehensive risk management of high risk activities now. The schedule of high risk activities will be included in the schedule to the Queensland Regulations.

Changes applying to executive officers

Executive officer liability

Three of the 16 recommendations coming from the Royal Commission of Inquiry into the Pike River mine disaster were about safety and health responsibilities of executive officers of mining companies.

Under the CMSHA and MQSHA, executive officer provisions are only intended to apply to corporate officers and are not intended and do not apply to any on site managers such as SSEs or mine managers who have their own tailored onsite obligations. It is intended that this separate categorisation will be maintained under any revisions of the current provisions as on site managers and workers have specific on site obligations.

Under the CMSHA and MQSHA, executive officers are liable if their corporation has committed an offence. If the Mines Inspectorate also prosecutes executive officers as a result of an offence committed by the corporation, executive officers have the onus of proving in their defence that they were reasonably diligent in ensuring the corporation complied with the legislation or that they were not in a position to influence the corporation in relation to the offence.

However, there is the need to review the blanket liability imposed on executive officers for corporate offending under current mine safety and health legislation in light of the new approach to executive officer liability under Queensland's general workplace safety and health legislation and in the context of the Directors' Liability Reform Amendment Bill 2012 (DLRA Bill).

The DLRA Bill also provides in some instances for liability where an executive officer has authorised or permitted the corporation's conduct constituting the offence or was, directly or indirectly, knowingly concerned in the corporation's conduct.

The relative merits of the alternative approach to executive officer liability under the Queensland *Work Health and Safety Act 2011* or Model Act under which an executive officer may be liable for a breach of stated duties independently of corporate offending has also been considered.

Under either approach, consideration will also be given to providing examples of due diligence required of executive officers to provide guidance as to what is required for compliance with the requirements of the legislation. The inclusion of examples of due diligence expected of officers in the general workplace safety and health legislation has led to industry directors and officers in general industry being more proactive about monitoring, auditing and reviewing at board reporting level to verify they are meeting their safety and health obligations. Directors are recognising it is problematic if they do not have knowledge of safety and health risks and if the corporate office is not also responding to incident reports and other safety and health concerns.

Consideration will also be given to using the definition of 'officer' for consistency with the general workplace safety and health legislation which is based on the *Corporations Act 2001* (Commonwealth) definition rather than the current definition of 'executive officer' in the mine safety and health legislation.

The preferred option for mining safety and health is the Queensland *Work Health and Safety Act 2011* or Model Act approach to the stated duties of officers which does not have a reverse onus of proof.

Penalties and offences

The relevant offences and penalties sections of the Model Act (including the Queensland *Work Health and Safety Act 2011)* and the CMSHA and MQSHA applying to health and safety duties or obligations differ in:

- the categorisation of the offences
- when an imprisonment penalty may be applied and maximum imprisonment penalties,
- maximum financial penalties and whether officers as a subcategory are specifically subject to higher maximum financial penalties compared to other individuals
- court system for prosecutions.

Under s. 34 of the CMSHA and s. 31 of the MQSHA a person on whom a safety and health obligation is imposed must discharge the obligation. Maximum penalties apply depending on the extent of harm caused by the contravention. The maximum penalties are stated as follows in both provisions:

> Maximum penalty—
>
> (a) if the contravention caused multiple deaths—2000 penalty units or 3 years imprisonment
> or
>
> (b) if the contravention caused death or grievous bodily harm—1000 penalty units or 2 years imprisonment
> or
>
> (c) if the contravention caused bodily harm—750 penalty units or 1 year's imprisonment
> or
>
> (d) if the contravention involved exposure to a substance that is likely to cause death or grievous bodily harm—750 penalty units or 1 year's imprisonment
> or
>
> (e) otherwise—500 penalty units or 6 months imprisonment.

Sections 30 to 33 of the Model Act cover offences and penalties and introduce three categories of offences, with category 1, the most serious based on possible imprisonment and maximum financial penalties. Category 1 is a reckless conduct offence. Category 2 is for a breach that exposes an individual to a risk of death or serious injury or illness. Category 3 is for failing to comply with a health and safety duty.

Greater consistency can be achieved by replacing the above CMSHA and MQSHA provisions with the offence framework for health and safety duties under the Model

Act. This proposed change would include all three categories of offences and the same maximum penalties under s. 31 to s.33 of the Model Act and subcategories for officers compared to other individuals. The level of imprisonment along with the penalty units (i.e. financial penalty) forms the maximum penalty for the relevant offences.

Category 1 under the Model Act does not have a comparable CMSHA and MQSHA specific category dealing with recklessness, however, the CMSHA section 39(2)(f) and MQSHA section 36(2)(f) refer to the obligation to not do anything recklessly in the obligations of persons generally, and the prosecution can attempt to argue recklessness to increase culpability and seek higher penalties.

Category 2 from the Model Act could line up with the first 4 levels of harm under the CMSHA and MQSHA provisions however, the Model Act refers to exposure to the risk of death or serious injury or illness rather than likely or actual death or grievous bodily harm.

Category 3 from the Model Act can be compared to the last CMSHA and MQSHA category of 'otherwise'.

The table below provides a comparison of existing maximum financial penalties.

Under s.5 of the *Penalties and Sentences Act 1992* the value of a penalty unit is kept at $100 rather than increasing to $110 for the Queensland *Work Health and Safety Act 2011,* so that the penalties stay in step with the nationally set penalties. It is proposed to use penalty units as maximum penalties for offences under the CMSHA and MQSHA as they are used for the Queensland *Work Health and Safety Act 2011*. Consequential amendments would also be required to s. 5 of the *Penalties and Sentences Act 1992* consistent with references to the Queensland *Work Health and Safety Act 2011* to ensure consistency with nationally agreed penalty levels. In comparison, the value of a penalty unit under s. 5 of the *Penalties and Sentences Act 1992* currently applying to the CMSHA and MQSHA is $110.

Further, a category 1 offence under the Queensland *Work Health and Safety Act 2011* is a crime and the proposed provisions would include a similar provision.

The CMSHA and MQSHA override the excuses in s. 23 and s.24 of the Criminal Code. Section 23 of the Criminal Code provides that a person is not criminally responsible for an act which occurs independently of the person's will for an event which is unforseen. Section 24 of the Criminal Code provides an excuse where a person holds an honest and reasonable, but mistaken belief about a factual situation. The provisions in the Queensland *Work Health and Safety Act 2011* limit the application of a similar provision to category 2 and 3 offences (i.e. s.23 and s.24 apply for category 1 offences which are a crime).

Similar provisions would need to be adopted in the proposed amendments. It is noted that the exclusion of these Criminal Code excuses raises a fundamental legislative principle about the removal of usual excuses to liability and is addressed in **Appendix J**. If this is limited to category 2 and 3 offences as it is in the Queensland *Work Health and Safety Act 2011,* the proposed approach will be consistent with the approach taken for general workplaces. Other limited defences under the CMSHA and MQSHA will continue to apply.

Model Act category	Body corp max	Officer max	Individual max	CMSHA and MQSHA category	Body corp max	Individual max
Category 1 – crime - involving reckless conduct – risk of death or serious injury	$3 million	$600 000 or 5 years imprison-ment	$300 000 or 5 years imprison-ment	No specific equivalent category but recklessness may be argued in relation to any of the categories below involving different extents of harm.	Maximum penalty would depend upon the extent of harm caused based on categories below which align with category 2 and 3 from the Model Act. For the greatest harm (multiple deaths) the maximum is $1.1 million.	Maximum penalty would depend upon the extent of harm caused based on categories below which align with category 2 and 3 from the Model Act. For the greatest harm (multiple deaths) the maximum is $220 000 or 3 years imprison-ment.
Category 2 – exposing an individual to risk of death or serious injury	$1.5 million	$300 000	$150 000	Contravention caused multiple deaths	$1.1 million	$220 000 or 3 years imprison-ment
				Contravention caused death or grievous bodily harm	$550 000	$110 000 or 2 years imprison-ment
				Contravention caused bodily harm	$412 500	$82 500 or 1 years imprison-

						ment
				Contravention involved exposure to a substance likely to cause death or grievous bodily harm	$412,500	$82 500 or 1 years imprison-ment
Category 3 – failing to comply with a health and safety duty.	$500 000	$100 000	$50 000	Otherwise	$275,000	$55 000 or 6 months imprison-ment

Overall, except for maximum penalties for individuals other than officers where the contravention caused multiple deaths, the maximum financial penalties under the Model Act are significantly higher than those under the CMSHA and MQSHA.

It is also proposed that the approach to possible imprisonment penalties in the Model Act will be adopted in the CMSHA and MQSHA. It is proposed this replace the current approach in the CMSHA and MQSHA to imprisonment penalties. As a general principle, imprisonment penalties apply to the most serious offences. Under the Model Act, the most serious offences are category 1 offences and there is consequently, a potential significant imprisonment penalty. To date under the CMSHA and MQSHA there has been one suspended sentence.

As well as aligning with the Model Act penalties for breach of safety and health duties or obligations, there are also other comparable Model Act offences that have substantially higher maximum penalties than those under the CMSHA and MQSHA. For example, under s. 38 of the Queensland *Work Health and Safety Act 2011* the maximum penalty for not notifying the regulator of a notifiable incident is 100 penalty units. Under s. 198(1) of the CMSHA and s. 195(1) of the MQSHA the maximum penalty for not notifying an inspector about an accident, incident or death is 40 penalty units. Under s. 185 of the Queensland *Work Health and Safety Act 2011* the maximum penalty for a person not providing the person's name and address is 100 penalty units whereas under s. 153 of the CMSHA or s. 150 of the MQSHA it is 40 penalty units. Strengthening other maximum penalties in the CMSHA and MQSHA or their Regulations where necessary to align in strength to the Model Act or Model regulation provisions is also proposed.

A response to the earlier consultation paper suggested that there may be cost based effects related to exposure to higher penalties and taking a risk based approach including disincentives to workers to fulfil statutory roles, combined with likely increased insurance costs for policies taken out to seek to ameliorate the effects of potential penalties and the costs of defending related proceedings.

However, officers and statutory position holders would only have concerns about the possible higher penalties if they are not complying with the Acts and Regulations.

The following article by Foster, N. *You can't do that! Directors insuring against criminal WHS penalties* (2012) 23 Insurance Law Journal 109-125 was reported in

the National Research Centre for OHS Regulation Work Health and Safety Briefing November 2012 as suggesting that those who may be fixed with personal responsibility for civil damages and criminal penalties may purchase insurance to cover possible civil liability however, insurance against criminal penalties is arguably void and should not be offered.

Additional appeal rights

Prosecutions under the CMSHA and the MQSHA are by way of summary proceedings before an industrial magistrate and on appeal before the Industrial Court. To date there has not been a large proportion of appeals to the Industrial Court.

Currently s.349 of the *Industrial Relations Act 1999* provides that a decision of the Industrial Court is final and conclusive and cannot be appealed, reviewed, quashed or invalidated in any Court other than in relation to a decision affected by jurisdictional error.

The proposal is to introduce further appeal rights either as has occurred through the Queensland *Work Health and Safety Act 2011* entirely through the mainstream court hierarchy from a Magistrate, or alternatively having further appeal rights after an appeal from an Industrial Magistrate to the Industrial Court to the Court of Appeal, for prosecutions under the CMSHA and MQSHA.

If stakeholders prefer to introduce further appeal rights after appeals from an Industrial Magistrate to the Industrial Court, proposed amendments will also ensure that the Industrial Court can order a person to be imprisoned after a person has been released on bail or when the Industrial Court has reversed a non-guilty decision of an Industrial Magistrate. Section 341 of the *Industrial Relations Act 1999* appears to partially address when a person is released from custody but not where the Industrial Court is to make an imprisonment order.

Some stakeholders have suggested further appeal rights should be introduced from the Industrial Court to the Court of Appeal for prosecutions under the CMSHA and MQSHA, through appropriate amendments to the relevant Acts. There would also be a right of appeal from the Court of Appeal to the High Court. Under this alternative, if summary prosecutions were retained by Industrial Magistrates, it would be necessary for any category 1 offences to be heard on indictment (in the District Court) and the appeal provisions under the Criminal Code would apply to those matters.

Alternatively, other stakeholders have suggested further appeal rights should be introduced by moving proceedings away from the Industrial Magistrates' jurisdiction entirely by moving the jurisdiction entirely to the mainstream court hierarchy (i.e. this would be through a Magistrate rather than an Industrial Magistrate) with appeals to the District Court rather than Industrial Magistrate, Industrial Court and then on to the Court of Appeal and High Court. Moving proceedings away from the Industrial Magistrates' jurisdiction entirely under the Queensland *Work Health and Safety Act 2011* has had the effect of increasing appeal rights.

Appeals from summary prosecutions in the Magistrates Courts are governed by the provisions in the *Justices Act 1886* which include a number of restrictions. Further, s. 118 of the *District Court of Queensland Act 1967* contains limits on appeals to the Court of Appeal from a decision of the District Court brought under s. 222 of the *Justices Act 1886* (i.e. it must be with leave).

Under the Queensland *Work Health and Safety Act 2011* proceedings for an offence, other than a category 1 offence, must be taken as summary proceedings under the *Justices Act 1886*. Category 1 offences must be prosecuted on indictment (in the District Court). Section 230(4) of the *Work Health and Safety Act 2011* also clarifies that nothing affects the ability of the Director of Public Prosecutions to bring proceedings for an offence and this provision would probably need to be adopted so that the general ability of the Director of Public Prosecutions to bring proceedings for an offence is not affected. Changes to provisions may also be based upon s. 230(3) of the *Work Health and Safety Act 2011* in relation to the publication of general guidelines in relation to the prosecution of offences. The prosecution of offences would otherwise largely remain unchanged under this option.

Stakeholders will be able to submit their preferred option for further appeal rights for prosecutions under the CMSHA and MQSHA.

Additional court orders

The Queensland *Work Health and Safety Act 2011* includes a number of orders under division 2, part 13 that can be made by a Court in addition to a conviction for an offence including the following: adverse publicity orders, orders for restoration, work health and safety project orders, and training orders. There is also an offence for failing to comply with an order.

The CMSHA and MQSHA do not have comparable provisions as the orders relate to actions by the offender, not the publication of information about offences by the regulator. For example, a court may order the offender to publish information about the offence and the penalty.

While the CMSHA and MQSHA already have a focus on the early release of information and competency issues prior to prosecutions, to develop consistency with the Model Act in relation to the full range of possible Court orders, the additional possible Court orders will be added to the CMSHA and MQSHA. This will enable prosecutors to request Court orders in addition to conviction and financial penalties/imprisonment. The Court will also be able to make an adverse publicity order on its own initiative.

Although not directly related to court orders, it is not proposed to adopt civil penalty provisions or provisions about the issuing of guidelines about acceptance of undertaking.

Limitation period for prosecution

The Model Act provides in some respects for a longer period in which proceedings for an offence against the Act may be brought compared to the CMSHA and MQSHA. The proposal is to adopt the longer limitation periods under the Model Act s. 232(1)(a) and (2). The longer limitation period under s.232(1)(a) would extend the period from six months to two years from when the offence comes to the complainant's knowledge and would not have a three year limitation after the commission of the offence.

This will make applicable limitation periods more consistent with those under the Queensland *Work Health and Safety Act 2011.* The extended period was justified for the *Work Health and Safety Act 2011* and similar justifications are included for the proposed amendments in **Appendix J.** The justifications apply for mining as mining

safety and health investigations can be lengthy and technically very complex. There was at least one prosecution where it was difficult to start proceedings within six months after the offence came to the complainant's knowledge.

Section 232(2) of the Queensland *Work Health and Safety Act 2011* notes that a proceeding for a category 1 offence may be taken after the end of the applicable limitation period if fresh evidence relevant to the offence is discovered and the court is satisfied that the evidence could not have reasonably been discovered within the relevant limitation period.

Coverage of obligations of designers, constructors, erectors and demolishers of structures

Other than for quarries, the MQSHA and the CMSHA apply to mines/coal mines primarily within the boundaries of land the subject of a mining tenure. The meaning of on-site activities under the CMSHA and operations under the MQSHA refer to constructing among a broad range of other activities or operations at a coal mine or mine.

In 2011, the Acts were amended to insert obligations on designers, constructors and erectors of earthworks. Occasionally other structures such as small buildings for administration or accommodation are constructed within the boundaries of land the subject of a mining tenure. The proposal is to amend the CMSHA and MQSHA to also cover the obligations of designers, constructors, erectors and demolishers of structures. The definition of 'structure' under the Model Act would be suitable for surface works but not for underground works. Parliamentary drafters would exclude underground works in the definition.

A structure means anything that is constructed, whether fixed or moveable, temporary or permanent, and includes—
a. buildings, masts, towers, framework, pipelines, transport infrastructure
b. any component of a structure
c. part of a structure.

Protection from reprisal

In 2008 the Ombudsman released a report titled The Regulation of Mine Safety in Queensland: A review of the Queensland Mines Inspectorate. One of the recommendations in the report was to make it an offence for a person to cause, or attempt to cause, detriment to another person because anybody has provided, may provide or is believed to have provided information to the regulator, another government agency, or the mine operator itself about a mine safety concern. In 2009, the CMSHA and MQSHA were amended to implement the recommendation.

An identified option which is subject to further consultation, is that the mining industry have the same protection from reprisals for mine workers as workers in general workplaces. There are comparable but broader as well as more specific provisions encompassing this topic in the Model Act. Part 6 of the WHS Act prohibits discriminatory, coercive and misleading conduct in relation to work health and safety matters. It establishes both criminal and civil causes of action in the event of such conduct.

The purpose of these provisions is to encourage engagement in work health and safety activities and the proper exercise of roles and powers under the WHS Act by

providing protection for those engaged in such roles and activities from being subject to reprisals or discriminatory conduct or coercion which may otherwise deter people from being involved in work health and safety activities or exercising work health and safety rights.

The proposal is to largely replace the 'protection from reprisal' sections in the CMSHA and MQSHA with part 6 of the WHS Act including the higher penalty levels.

The provisions from the Model Act are implemented in the Queensland *Work Health and Safety Act 2011.* These provisions enable a person in civil proceedings to challenge detrimental action taken against them on the basis a prohibited reason was a substantial reason. The regulator can also prosecute where it can be proven that discriminatory conduct was engaged in with respect to a prohibited reason.

If this option is adopted it will increase the consistency of approach to reprisals with the other large mining states and general workplaces. Stakeholders are invited to make submissions about whether they prefer the current approach in the CMSHA and MQSHA or the approach that has been introduced through the Model Act.

Entry to any workplace for inspectors

The general WHS inspectors have access to any building whereas the Mining inspectors only have right of entry to defined mines and some complicated restrictions on entry to other workplaces. This potentially restricts mining inspectors exercising certain powers with mine operators, holders and other obligation holders (e.g. contractors) where the offices and officers and other work places are not located on mines.

It is proposed to introduce the same right of access to any building for Mining Inspectors as Inspectors have under the Model Act so that '*an inspector may at any time enter a place that is or an inspector reasonably suspects is a workplace.'*

This will provide mines inspectors with the same broad entry rights as any general workplace inspector to enter a workplace. Entry of off-minesite workplaces is sometimes required when the activities at that workplace are relevant to mining, for example, an electrical overhaul workshop conducting maintenance on explosion protected electrical equipment to be reinstalled in an underground coal mine following maintenance.

Proposed amendments are limited to the extension to enter any workplace and not adoption of the entire framework for inspectors' powers in the Model Act. Protections under the current legislation including regarding entry to residences and inspectors showing identity cards will be retained.

Incident notification

The NMSF consists of seven strategies to deliver a nationally consistent mine safety regime. One strategy is to develop a national database to enable consistent data collection and analysis across jurisdictions. This means the requirement on mine sites to provide data and the data they are required to provide must be consistent.

The incident notification requirements under the Queensland mine safety Acts and the Model Act framework and non-core instructions are largely consistent however,

there are differences in terminologies. The terminology in the CMSHA and MQSHA need to be made consistent with those under the Model and non-core frameworks.

Release of information regarding incidents by regulators

The non-core NMSF policy includes the proactive release of information by regulators so that industry can learn from the information and be encouraged to improve in relation to health and safety management and prevention strategies.

Other than the aspect to also have statutory authorisation for the release of incident or safety alerts and releasing information about the outcome of any disciplinary proceedings in relation to a practising certificate, Queensland has already enacted the majority of the non-core policy about the proactive release of information.

The non-core policy is intended to facilitate early information flow from regulators after an incident while protecting the regulator from any proceedings against it for the release of the information.

The incident or safety alerts that are released may include explanations of particular risks in light of recent incidents without identifying those involved. Queensland has been releasing safety alerts and other information administratively for a number of years without statutory authorisation. As the mechanism or channel of release of information already exists, there will be no additional costs and none are included in the cost analysis.

However, through non-core consultation with New South Wales and Western Australia there was agreement to enact consistent statutory authorisation for the release of early incident alerts, as well as for the range of other information that may be proactively released by regulators.

Mine record

The non-core policy for this topic is mostly a reflection of relevant current CMSHA and MQSHA provisions. Consultation through the non-core legislative working group meetings suggested that the non-core policy is captured by the relevant core mining Regulations, except for some additional non-core policy that is already included in current Queensland provisions.

The current Queensland provisions will be mostly built around for reasons including they refer to directives rather than Model Act notices and already contain higher financial penalties than the comparable core regulations. Due to the importance of the mine record, the current higher potential penalties will be retained.

However, the current CMSHA and MQSHA provisions will be amended to include in a similar manner the references in core Regulations to the mine record including records kept in relation to reviews of control measures and each report by a shift supervisor.

Some subsections from the core Regulations will be inserted for greater consistency including about only making available a summary of the record about every incident notified to the regulator, and not providing personal information without consent.

Plans of mines and abandoning mines

Format and means for submission

It is proposed there will no longer be a requirement for the SSE to submit current plans to the Chief Inspector of Coal Mines before 31 December each year for coal mines. This will reduce red tape currently requiring periodic submission of mine plans by the coal industry. This saving is included in the cost analysis in **Appendix I**.

Metalliferous mines keep plans but are not currently required to submit plans to the Chief Inspector of Metalliferous Mines and Quarries. An earlier proposal to introduce this annual submission requirement for underground metalliferous mines will now not be progressed.

However, the current ability of the Mines Inspectorate and ISHRs or DWRs to request current mine plans at any time will be retained under both the CMSHA and MQSHA.

It is proposed mine plans will be kept electronically by coal mines and submitted electronically to the Mines Inspectorate when requested. For metalliferous mines mine plans will be kept either electronically or in hard copy and may be submitted electronically or as a hard copy by mail when requested by the inspectorate. This reflects current requirements and no additional costs are envisaged.

When the plans are submitted they will be maintained in a data silo adjacent to DNRM's abandoned mines data set. The accuracy of the plans will continue to be certified by surveyors and the electronic format will need to satisfy the requirements of surveyors. However, to ensure the mine plan requirements are not onerous on some smaller operations (e.g. opal mines) that do not have the resources or level of complexity in their operations to warrant fully surveyed plans, these mines can if required provide 'indicative drawings and/or descriptions' of their workings to the inspectorate rather than fully surveyed plans. The location and workings of these mines still need to be recorded, as these operations are numerous and can still present safety risks.

Costings for industry

Queensland's coal mines and the larger metalliferous mines already have electronic means of maintaining plans due to current requirements in the CMSHA and the MQSHA. A transitional period may be required for smaller metalliferous mines to establish electronic requirements for 'indicative drawings and/or descriptions.'

There will be no significant additional costs for DNRM in relation to the information technology requirements. Only requested plans will be retained by Chief Inspectors when a mine is operational and there will be less storage of annual information not necessarily required.

Additional policy issue

The CMSHA and MQSHA currently require a mine operator to provide the Chief Inspector with plans showing the extent of operations within 14 days of abandonment.

It is proposed these plans should also be submitted if a mine is to become non-operational temporarily, or is to go into receivership, and not only when it is abandoned or permanently closed.

However, when a mine has submitted a plan because it is becoming non-operational temporarily, or is going into receivership or is to permanently close, these plans will also be kept electronically by DNRM. In the case of metalliferous mines, the plans may be submitted electronically or in hard copy by mail.

DNRM has encountered problems obtaining copies of plans from the operators who have been the operators immediately before abandonment, as well as before receivership or temporary closure of a mine. This is unacceptable as the Mines Inspectorate does not have the information needed to mitigate any safety and health concerns from underground workings such as hidden or unstable infrastructure, unsound shafts or chemical residues.

It is proposed that in the case of receivership, if the operator has not already provided plans within seven days of receivership commencing, the receiver is required to give the chief inspector plans showing the extent of operations at the mine within seven days.

These provisions are intended to ensure that the inspectorate has a record of the location and extent of workings at an abandoned or non-operational mine and as a consequence an understanding of any ongoing safety and health issues that may need to be addressed.

The numbers are likely to be insignificant and have not been costed.

Boards of inquiry

Amendments are proposed based on the non-core policy developed by New South Wales, Queensland and Western Australia to develop greater consistency and rigour. The changes are not expected to impose any significant extra costs.

Health surveillance

Current position

The Coal Regulation requires all coal mine workers to undergo a health assessment before commencing work (other than for low risk tasks) and at least every five years thereafter. The assessment must be carried out by, or under the supervision of, a Nominated Medical Adviser who is appointed by the employer and is required to furnish the employer and the coal mine worker with a report on the outcome. The report provides a medical assessment of whether the worker is fit, fit with restrictions or not fit to do the specific job for which they are employed.

The Coal Regulation provides that the assessment by the Nominated Medical Adviser is to be carried out in accordance with the instructions and matters in the approved form. The approved form currently includes 'fitness for work' components related to a worker's overall health including cardio-vascular, musculo-skeletal and respiratory systems.

Under the regulation, DNRM has ownership of all the medical records generated by the scheme and receives them in hard copy format from the Nominated Medical Advisers and enters them onto a database.

The high levels of employment and movement within the mining industry has meant a significant increase in the number of health assessments received by DNRM over

recent years (47 747 health assessments received in 2012 compared to 24 529 in 2009). The continual increase in the number of assessments received has put DNRM under significant administrative strain.

Problems

The health assessment provides a baseline for subsequent assessments to be compared; however, it is also providing a measure or a noting of lifestyle issues unrelated to mining (such as health affected by smoking, dietary habits, alcohol and drugs) as well as respiratory capacity and musculo-skeletal health which may be affected by mining work over time.

A particular concern is many Nominated Medical Advisers appointed by employers have little to no experience or expertise in occupational medicine, nor do they have knowledge of the mine conditions or the coal mining industry. Therefore, without the occupational health experience and detailed knowledge of the employer's coal mining operations to assess the fitness of a worker against the job demands, many of these practitioners may not be providing an appropriate medical assessment under the Coal Regulation.

The appeal process is also problematic. Currently under the Coal Mining Safety and Health Regulation 2001, before an employer takes action to terminate or demote a worker when a health assessment shows that a worker is unable to carry out the tasks at a mine without creating an unacceptable level of risk, a worker can undergo a further health assessment at the worker's expense. This second assessment may conflict with the original assessment.

In this case, despite the fact it is the employer appointing the Nominated Medical Adviser to carry out, supervise, and report on health assessments of the coal mine workers at the employer's mine site, DNRM has, since 2010, been drawn into industrial matters between the employer, the union and/or the worker where there are conflicting health assessment reports. DNRM is then required to appoint a relevant medical specialist to prepare the third and final report to resolve the dispute over conflicting medical opinions.

DNRM is required to arrange and pay for the third medical.

Another current issue is that employers have found a way to avoid paying for their workers' medicals, as required by the Coal Mining Safety and Health Regulation 2001, by requiring them to have the health assessment (and the generic induction) before being considered for the job.

The provision cannot be enforced because they are not 'coal mine workers' by definition until they are employed in the industry.

Proposed solution

DNRM proposes to return the scheme to its original purpose, which was the health surveillance of those employed in the coal industry to ensure their health was not materially affected by their employment.

DNRM instead should be concerning itself solely with a more simple health surveillance scheme to determine whether the work or the environment worked within are harming the short and long term health of coal mine workers.

The regulator's concern is with the potential impact of mining work on workers and this is monitored through health surveillance assessments. The proposed health surveillance assessment will address health issues that historically have been affected by health hazards common to the industry, such as noise and dust. The assessment should include work history, a respiratory questionnaire, lung function tests, chest x-ray and audiometry.

In the proposed scheme the decision about whether a coal mine worker is fit for work at a particular mine site will remain a responsibility of the mine's SSE. The decision will be based on an assessment of the worker by a qualified medical practitioner with demonstrated knowledge of risks associated with the activities performed in the mining industry, without the specific process for resolving conflicting assessments currently provided in the Coal Mining Safety and Health Regulation 2001. This will be similar to the arrangements in the Mining and Quarrying Safety and Health Regulation 2001 where it is the responsibility of the SSE and DNRM is not directly involved in conflicts over health assessments for fitness. It will also align with the requirement in the Mining and Quarrying Safety and Health Regulation 2001 where the 'appropriate doctor' for 'a health surveillance or health assessment of a person at a mine, means a doctor with demonstrated knowledge of the risks associated with activities performed by the mine's workers'.

The SSE has an obligation to ensure the safety and health of workers at a mine, including whether they are fit for duty. If someone is a risk to themselves and/or others, the SSE must address that hazard. If the SSE does not, it is akin to any other non-controlled hazard and if necessary, the regulator has powers to address any unacceptable level of risk.

It is proposed that any future disputes about any conflicting health assessment reports provided for the respective parties can be resolved solely under the *Fair Work Act 2009*.

The purpose of health surveillance is to obtain baseline data of workers new to the industry and periodic data throughout the period the worker is employed in the industry. This data will enable the regulator to identify factors which have a higher than acceptable association with illness or injury and common problems across the industry or at a particular mine. The regulator can then issue guidance material, directives to address the problems, or consider some other form of regulatory intervention.

DNRM will require through regulation, medical practitioners with appropriate qualifications and/or experience to carry out health surveillance assessments. This will be consistent with the approach in the core mining Regulations requiring appropriate expertise and the approach in the Mining and Quarrying Safety and Health Regulation 2001, requiring an 'appropriate doctor' for a health surveillance or health assessment of a person at a mine.

The approved form will need to be amended to focus on health surveillance concerns only. DNRM can require that the medical practitioners have experience in the mining industry and if necessary require appropriate training for them in audiometry and spirometry to ensure an appropriate standard of assessment.

Employers can continue to nominate a medical practitioner for the fitness for work assessments, which could be the same medical practitioner as the one conducting the health surveillance assessment. However, the initial baseline assessment will be required only after a worker has started work in the industry, and within three months

of commencing work and should not be conducted also for large numbers of prospective employees who may obtain at their own expense an assessment which can cost up to $700, yet never gain employment in the industry.

Process for developing fitness provisions under the Coal Mining Safety and Health Regulation 2001

Under s.42 of the Coal Mining Safety and Health Regulation 2001, a coal mine's safety and health management system must provide for controlling risks at the mine in relation to personal fatigue; other physical and psychological impairment and the improper use of drugs. The SSE must develop fitness provisions for these matters for inclusion in the safety and health management system.

SSEs are required to develop fitness provisions in consultation with a cross-section of workers. In doing so, the SSE must follow the process for developing SOPs, in s.10 of the Coal Mining Safety and Health Regulation 2001, except for a step that enables resolution for all matters.

The process for developing SOPs includes a step allowing the SSE to decide on disagreed matters and to finalise the document if workers still disagree after the SSE has provided a further draft for consideration. This step in the process does not apply to fitness provisions for the risks identified under s.42.

Currently, if an agreement cannot be reached on the criteria for the assessment of improper use of drugs, Recognised Standard 07 - *Criteria for Assessment of Drugs in Coal Mines* will apply until an agreement is reached.

If the fitness provisions provide for the assessment of workers for fatigue or other physical or psychological impairment the SSE must establish the criteria for assessment in agreement with a majority of workers at the mine. When majority agreement cannot be achieved the SSE is unable to finalise the document.

Fatigue, the improper use of drugs and other physical and psychological impairments are hazards. The procedures for managing these hazards should be developed in the same way SOPs are developed for other hazards at a mine. This will allow the SSE to finalise the fitness provisions and fulfil his/her obligations.

It is therefore proposed that s.42 of the CMSH Regulation will be amended so that the fitness for work hazards will be managed as a hazard through a SOP and the SOP is to be developed in the same way SOPs are developed for other hazards at a mine.

The changes described will be a simplification of an existing process and will make the process consistent with the process for all other hazards at a mine.

Proactive inspector powers and directive to suspend operations for an unacceptable level of risk

Proactive inspector powers

The non-core policy consultations resulted in the position that New South Wales and Western Australian regulators intended to enact the powers to give and way of giving directives based on what currently exists in the CMSHA and MQSHA. These

Queensland designed, risk based directives have proven very effective in enabling the Queensland inspectorate to anticipate and proactively require correction of safety and health management system problems or latent risks before they continue to develop into imminent or immediate risks , as well as more imminent problems or risks. Analysis of workplace disasters by well known academics such as Professor James Reason and Professor Andrew Hopkins have highlighted the importance of proactively addressing latent system problems because mining disasters often cannot be avoided at the imminent or immediate stage of realisation.

The Model Act threshold for regulator action of imminent or immediate is too high in a mining context due to the nature of the hazards and responding at a more anticipatory stage is required.

While Queensland is keeping the current regulator proactive powers, non-core consultation with New South Wales and Western Australia and stakeholders also included a proposal to create an overarching, general power for inspectors to require anything of a duty holder based on *'a reasonable opinion if the inspector is satisfied in the interests of health or safety'.* If this general power is implemented by New South Wales and Western Australia, it is proposed it will be an addition to Queensland's current proactive powers rather than a replacement of any of them.

New South Wales indicated that it could base the development of this additional proactive power on s.153 in the Model Act which provides that subject to the rest of the Model Act, the regulator has the power to do all things necessary or convenient to be done for or in connection with, the performance of the regulator's functions. Queensland has a similar provision, which is s.73D of the CMSHA. It provides that the Commissioner has the powers necessary or convenient to perform the Commissioner's functions.

As well as a Commissioner, Queensland has Chief Inspectors under the CMSHA and MQSHA with specified functions different to those of the Commissioner's. Therefore, to ensure greater consistency about how these general provisions relate to functions of the regulator as a group as a whole, Queensland would add similar provisions to s.73D in the CMSHA, relating to the Commissioner and the Commissioner's functions and s.153 in the Model Act relating to the regulator and the regulator's functions applying to the functions of each of the respective Chief Inspectors under the CMSHA and MQSHA.

Directive to suspend operations for an unacceptable level of risk

Proposed amendments will either:

- clarify the directive to suspend operations that can be given by ISHRs and DWRs for an unacceptable level of risk; or
- alternatively provide that ISHRs and DWRs will have a role in the notification of potential risks but will not be able to issue a directive to suspend operations.

The CMSHA and MQSHA contain a range of matters for which a directive can be given that differ in focus, degree of anticipation of safety and health risks and who may give the directive.

Section 167 of the CMSHA and s.164 of the MQSHA have the following section heading: 'Directive to suspend operations for unacceptable level of risk'. Section 31 and s.28 of the respective Acts describe what actions are to be taken if there is an unacceptable level of risk at a mine. These sections indicate urgency or immediacy of danger. However, the wording in the provisions of s.167 and s.164 do not reflect the urgent or immediate intention in the section headings to these provisions, as they contain the following words: 'risk from operations is **not at an acceptable level**' rather than 'risk from operations is at an **unacceptable level**' which is necessary to convey the urgency or immediacy of danger intended by s.31 of the CMSHA and s.28 of the MQSHA. The ambiguity that results suggests that s.167 of the CMSHA and s.164 of the MQSHA can be used proactively to reduce risk which is not the intent. They should only be used if the risk poses an urgent, imminent or immediate danger.

Other sections establishing other directives, enable inspectors to more proactively require risk to be reduced. Section 29 and s.26 of the respective Acts indicate that for risk to be **at an acceptable level**, it should be within acceptable limits and reduced to as low as reasonably achievable. However, these other directives do not extend this regulatory responsibility to ISHRs or DWRs. The other directives are only under the power and within the responsibility of the regulator.

Section 167 of the CMSHA and s.164 of the MQSHA describe the only directive from the suite of specifically designed directives with varying type and extent of anticipation of risk that may be exercised by ISHRs or DWRs. The other directives can be exercised only by the Chief Inspector, or only by inspectors or by inspectors and inspection officers.

There is no need for s.167 of the CMSHA and s.164 of the MQSHA to be wider than when risk is unacceptable. It is proposed that the wording in the sections applying to ISHRs or DWRs, be amended to be clearly confined to when the risk poses a danger that is urgent, imminent or immediate. This will not be a diminution of power of ISHRs or DWRs as this is confirmation of the interpretation of the current provisions by the Government. If for example, ISHRs identify reasons for responding proactively to more routine safety issues related to the safety health management system, they can already do this through the process in the Acts by first advising the SSE and if dissatisfied with the response of the SSE, the ISHR must advise an inspector.

Under the first alternative, the proposed amendment will more clearly confirm the different roles and powers of the Government inspectors compared to ISHRs and DWRs.

It is also proposed to amend the Acts so that when an ISHR or DWR issues a directive under s.167 of the CMSHA or s.164 of the MQSHA directive, an ISHR or DWR must be at the mine when the directive is issued. The directive will be subject to an inspector's review and ratification within 12 hours of the directive being issued. The directive will remain effective until it is withdrawn in writing by the ISHR or by an inspector which is essentially the current procedure under s.174 of the CMSHA.

This would address the concerns of the Mines Inspectorate about the provision (as currently drafted) being possibly open to misinterpretation. If ISHRs or DWRs identify a systematic problem with the safety and health management system they have a process under s.121 of the CMSHA or s.118 of the MQSHA to deal with the problem by first advising the SSE and if dissatisfied with the response of the SSE, the ISHR or DWR must advise an inspector.

Under the second alternative, ISHRs and DWRs will retain a role in the notification of potential risks but will not be able to issue a directive to suspend operations under any circumstances.

ISHRs and DWRs retain all other powers and can still proactively advise SSEs and inspectors of inadequate or ineffective safety and health management systems. If the ISHR or DWR is on site at the time of an imminent or immediate danger, they should advise workers under existing provisions in the CMSHA or MQSHA to withdraw to a place of safety, if the workers are not competent or able to eliminate the danger, Any worker, including ISHRs and DWRs, can also advise site safety and health representatives at the mine who may suspend operations under existing provisions in the CMSHA or MQSHA if there is an imminent or immediate danger..

Under this alternative, ISHRs and DWRs still have a process under s.121 of the CMSHA or s.118 of the MQSHA to deal with the problem, if the risk does not pose an imminent or immediate danger by first advising the SSE, and if dissatisfied with the response of the SSE, the ISHR or DWR must advise an inspector.

If there is imminent or immediate danger, an ISHR or DWR should advise workers to exercise their right to withdraw to a place of safety and then advise the SSE, rather than the ISHR or DWR acting directly to suspend operations. The SSE will then be responsible for suspending operations, if there is an imminent or immediate danger, rather than the ISHR or DWR.

The ISHR or DWR could alternatively also advise site safety and health representatives at the mine of an imminent or immediate danger. Under s.101 and s. 94 of the respective Acts, a site safety and health representative can stop operations if there is danger or immediate danger. If the site safety and health representative reasonably believes a danger to the safety and health of workers exists, by written report to the SSE, a site safety and health representative can order the suspension of operations. If a site safety and health representative reasonably believes there is an immediate danger, the representative may stop operations and immediately advise the supervisor in charge of operations or require the supervisor to stop operations. A written report including reasons must be given to the SSE.

Increasing the maximum number of industry safety and health representatives

The CMSHA currently limits the maximum number of ISHRs that the CFMEU can appoint, to up to three persons. The relevant provision has not been amended since enactment in 2001. Since 2001, the coal mining industry in Queensland has increased considerably in size to approximately 42 000 coal mining workers. The CFMEU have strongly advocated that an additional ISHR can be justified due to the growth of the coal mining industry.

This was previously supported by the Coal Mining Safety and Health Advisory Committee. The position would be funded by the CFMEU and would not be a cost to Government.

This amendment is under consideration.

Based on consultation to date, it is also proposed to retain the current arrangements for District Workers' Representatives under the MQSHA.

Election of Site Safety and Health Representatives

It is proposed to amend the Coal Mining Safety and Health Regulation 2001 so the SSE will run the election of a site safety and health representative, unless there is an objection by a coal mine worker. If there is an objection to the site senior executive running the election, the election is to be run by the Australian Electoral Commission. If a coal mine worker considers that these requirements are not being followed the Chief Inspector can be asked to investigate.

Ombudsman's recommendations about a confidential complaints system

Confidentiality of complaints

DNRM's website currently publicises its complaints system in the following way:

> ***'Complaints about safety and health at mines***
>
> *The Queensland mine safety laws allow mine workers or their representatives to make confidential complaints about safety and health matters to the Mines Inspectorate. These complaints must be investigated and the name of the person making the complaint must not be revealed. Legislation relating to complaints is section 254 of the Mining and Quarrying Safety and Health Act 1999 and section 275 of the Coal Mining Safety and Health Act 1999.*
>
> *A person wishing to make a complaint about an alleged contravention of the legislation or a thing or practice at a mine that could be dangerous, should contact an inspector by telephone or in writing. The complaint will be logged on the Mines Inspectorate complaints database and will be investigated by an officer of the Mines Inspectorate. This investigation may involve a visit to the particular mine where the allegation took place.*
>
> *When the investigation is complete, the person making the complaint will be advised of the results of the investigation.*
>
> *Before a person makes a complaint to the Mines Inspectorate, the person should bring the issue to the attention of the person's supervisor or site senior executive. This can be done personally or through a site safety and health representative.'*

The Queensland mining industry has a mature safety culture. Workers are required under the legislation to pass on any information they have to protect themselves and others from the risk of injury or illness.

The Mines Inspectorate very strongly supports a complaint system as it has brought very concerning and legitimate safety and health issues to their attention and they have not found the system to have been abused in any way.

Based on the success of the current system in contributing to mining safety and health and the realisation that this system can be further consolidated, the Mines Inspectorate now proposes to more clearly develop and promote a confidential system of complaints closely based on the approach developed and implemented for the aviation industry. This will assist in further developing the safety and health maturity of the mining industry, to the heightened level of safety and health maturity of the aviation industry.

The Mines Inspectorate's proposal to further develop and promote a confidential system of complaints is also directly based on the following policy discussion and recommendation of the Ombudsman.

Comments by the Ombudsman

The Ombudsman has recommended that the Mines Inspectorate

> *'take steps to publicise the existence of its system of confidential complaint and incident reporting and promote its use, and publish information on how information received via the system will be handled.'*

The Ombudsman's Review of the Regulation of Mine Safety June 2008 devoted chapter 8 to incident reporting and complaints about mine safety and suggested building additional confidence around complaints handling including confidential complaints and to publicise the availability of the confidential system.

Some of the relevant analysis by the Ombudsman's Review started at page 66 as follows:

> *'Although the QMI[7] conducts regular audits and inspections, as well as post-incident investigations, it also receives numerous complaints each year relating to alleged breaches of mine safety practices, or general concerns about safety at particular mines……*
>
> *It also appears that many safety-related complaints are made to the relevant union (CFMEU or AWU* [Australian Workers Union]*), which may deal with the matter. Where this happens the matter will not necessarily come to the QMI's attention.*
>
> *Those making complaints (most often mine workers) are usually better placed than inspectors to know what is actually happening at mine sites when 'no one's watching'. Complaints therefore form an important source of information for any safety regulator…*
>
> *Safety is built on a foundation of open and full exchange of information about problems, incidents and concerns. In an ideal world, workers and employers would report all serious incidents, near-misses and other safety concerns to the health and safety regulator simply because it is the 'right thing to do', and because it would enable the regulator to:*
>
> - *take action, or ensure action is taken by the employer, to address the concerns*
>
> *or*
>
> - *bring the problem (and any solution) to the notice of the industry as a whole.*
>
> *However, this is unlikely to happen in an industry where any stoppage in operations can seriously jeopardise production targets and profits and lead to job losses. In such an environment, an employee or contractor who reports safety concerns to the regulator is likely to be seen by the*

[7] Queensland Mines Inspectorate

operator (and even by other employees or contractors) as a trouble-maker and may become the subject of reprisals.

Moreover, there is the simple fact that people do not like to admit mistakes. Human reactions to making mistakes take various forms, but frank confession does not usually come high on the list.

One method of encouraging workers and others to report concerns about mine safety is to establish a confidential safety reporting system similar to that used by aviation regulators. The aviation industry worldwide has increasingly moved to a more confidential system of incident and 'near-miss' reporting, which is not the case in mining and other industries. For example, in respect of the UK aviation industry, Faith comments on:

> *… the astonishing openness of the way near misses are reported through what is called the Airprox System. It is entirely up to the pilots to decide when, as the official definition goes, 'the safety of the aircraft was or may have been compromised'. Any such incidents are obviously investigated thoroughly and independently of the airlines, and the results published …*
> *Looking at the records over the past decade what is surprising is that the number of cases has actually gone down … [yet] … traffic has increased … [and] there has been an increasing readiness … to report these problems …127*

> *Similarly, the background to the USA equivalent, ASRS (Aviation Safety Reporting System) is described as follows:*
>
> *It took [an aircraft crash in the USA] because the pilot misread the distance measuring equipment to bring out into the open five pilots who admitted that they too had experienced similar incidents but had been too embarrassed to report the problem. They had assumed, wrongly, that it was they and not the equipment that had been at fault.*

This sort of revelation, and the fact that pilots often dared not report incidents involving them or other pilots, dared not complain of stress, of fatigue, of bad maintenance, of unreasonable demands imposed by their employers, resulted in a new reporting system for untoward incidents.

In Australia, the ATSB's[8] Aviation Confidential Reporting Scheme (REPCON) became operational in January 2007. It is described as:

- *a voluntary confidential reporting scheme for aviation [which] allows any person who has an aviation safety concern to report it to the ATSB confidentially.*

Protection of the reporter's identity is a primary element of the scheme.

The matters excluded from the scheme are:

[8] Australian Transport Safety Bureau

- *unlawful interference with aircraft*
- *conduct representing a serious and imminent threat to a person's life or health*
- *industrial relations issues*
- *conduct which would constitute an offence punishable by more than two years' imprisonment.*

Reports received through REPCON are de-identified and, if necessary, investigated. Information briefs and alert bulletins can be issued to the operator concerned and, presumably, to a wider audience, if deemed appropriate.

The ATSB has recently launched a new incident information reporting system called SIIMS (Safety Investigation Information Management System). This is an 'occurrence database' and is designed to collect data on approximately 7000 'aviation occurrences' each year for a safety benefit. Notifications can be made confidentially, and this is seen as a key benefit of the system.

A system of blame-free or confidential incident reporting will never be perfect. There may be considerable cynicism at the outset about its effectiveness and, in smaller operations, individuals may still be afraid to report on the basis that 'everyone will work out who it was, anyway'.

To be accepted by industry, any such program must be seen to produce improvements in safety. At the operator level, the decision whether to report a problem affecting their own operation is likely to run into the dilemma described in the following terms by Hopkins:

… companies face a dilemma with respect to information about safety problems. Should they seek out such information and attempt to learn from it, or should they suppress this information in order to be able to plead ignorance if something goes wrong? Should they be as open as possible, disclosing whatever information is available and accepting the legal consequences, or should they limit the availability of this information as much as possible in order to be able to deny responsibility?

In the USA, the federal mine safety regulator, the Mine Safety and Health Administration (MSHA), runs a confidential telephone hot line for complaints about hazardous conditions. Complaints can be made anonymously.

The QMI advised us that it does, in fact, have such a system. Mine workers or others with safety concerns can contact the QMI and the details of the complaint are recorded on the Inspectorate's database in such a way that only the inspector to whom the complaint was made has access to the complainant's personal details.

However, our review of the publicly available information sources of the DME, including its website, indicates that the system is not well publicised or promoted. Greater promotion of this avenue for mine safety incident reporting is likely to give the QMI a more detailed picture of where problems are occurring, and bring to its attention specific matters which have not been revealed during inspections.

What is proposed?

The Mines Inspectorate proposes that the current complaints system be further developed so that it can be promoted and implemented in a very similar way to the aviation industry's confidential reporting system.

Coronial recommendations

The following two coronial recommendations are still to be implemented and it is proposed to include them in the suite of amendments.

The following coronial recommendation from the inquest into the death of Shane William Davis is not expected to entail any significant costs and would also be applied to the equivalent provision in the MQSHA:

> *'Recommendation 3: That consideration be given to amending section 44(6) of the CMSHA to require that manufacturers and suppliers inform the regulator as well as their customers in the event they become aware of a hazardous aspect of or defect in the equipment that the supplier has supplied to a coal mine.'*

The following coronial recommendation from the inquest into the death of Jason George Elliott Blee requires specific periodic auditing and an updating and electronic record of the content of a mine's safety and health management system at particular times. This level of auditing could already occur if required by the Inspectorate under the current provisions of the Acts. The safety and health management system is regularly reviewed and updated for example, whenever there is a significant change to operations at a mine, under the current provisions of the Acts and therefore, does not represent an increase in cost:

> *'Recommendation 15: The Minister for Mines give serious consideration to the amendment of the relevant legislation to require all coal mine operators to submit to the District Inspector of Mines electronically (in an approved format) a copy of the safety and health management system for the operation. The document is to be updated annually by the coal mine operator and any amendments submitted by the required date upon the written request of the Chief Inspector to the Site Senior Executive.'*

Appendix F – Implementation of the Model Act across Australia and issues identified by the Workplace Health and Safety Queensland Industry Round Table

The objective of nationally harmonised general work health and safety (WHS) was not achieved by the required COAG timeframe of 1 January 2012.

This therefore necessitates a reassessment of some of the cost-benefit conclusions from the Decision Regulation Impact Statement for a Model OHS [Occupational Health and Safety] Act 9 December 2009.

Victoria may not proceed to harmonise at all based on its 'Summary Report of Supplementary Impact Assessment' 4 April 2012 which focused on the impact of proposed Model Work Health and Safety Laws in Victoria. Western Australia is conducting further regulatory impact analysis of the specific impacts in Western Australia.

South Australia passed an amended Model Act through its Parliament in November 2012. Some of the changes made by South Australia in the *Work Health and Safety Act 2012* (South Australia) to the Model Act model provisions included:

- clarifying the obligation of duty holders to eliminate or minimise risk, so far as reasonably practicable, by adding to the extent that a duty holder has the capacity to influence and control the risk
- high risk construction work involving a risk of falling more than three metres instead of two metres
- requiring within State specific consultation before approval of any code of practice
- Inspectors having the ability to issue directions to WHS entry permit holders
- an increased penalty for contravention of a condition imposed on a WHS entry permit
- reviewing the *Work Health and Safety Act 2012* (South Australia) as soon as practicable after 1 January 2014.

Queensland has implemented some variations to the Model Act unrelated to variations allowed through jurisdictional notes, to maintain existing safety and health standards.

Workplace Health and Safety Queensland sought views in August 2012 about whether there are any aspects of the operation of the Model Work Health and Safety Act that started in Queensland's general workplaces on 1 January 2012, as the *Work Health and Safety Act 2011* that are unworkable or have had unintended consequences, including any unanticipated or inequitable compliance or cost burdens.

This included key business groups and unions meeting with the Attorney-General and Minister for Justice on 29 August 2012. Workplace Health and Safety Queensland reported on their website that a summary of the key outcomes from the roundtable review included:

- development of guidance on what is meant by 'reasonably practicable' and how control is relevant to the assessment of whether something was reasonably practicable

- consideration to the removal of 'contractors and subcontractors' from the definition of 'workers' (related to some workers also being PCBUs)
- consider changes to right of entry powers including whether these powers should be removed from Queensland's *Work Health and Safety Act 2011*
- recommending that a number of the second stage model codes of practice (mainly construction-related) not be adopted in Queensland.

Other issues related to the:

- cessation of certificates to operate earthmoving equipment
- removal of the five tonne threshold for gantry crane operation
- application of the confined spaces regulation in the rural industry.

The issues noted in Queensland based on the Industry Round Table review consultations are not relevant to the mining industry, as none of the aspects of the Model Act that are issues for general workplaces (including workers in some cases also being PCBUs, and what is meant by reasonably practicable and how control is relevant) are proposed for adoption within the mining safety and health legislative frameworks. Only certain parts of the Model Act that will add rigour or consistency without reducing safety and health standards, are proposed for adoption under Option 1.

In contrast, it is not proposed to introduce the PCBU concept and associated issues related to the broad definition of worker. The worker and contractor definition issues do not arise under the CMSHA and MQSHA because of the vertical command and control through the single safety and health management system.

It is not proposed to introduce the standard of 'so far as is reasonably practicable' but instead retain the clear risk management focus of acceptable level of risk and defences including control.

It is not proposed to introduce WHS entry permit holders under the CMSHA or MQSHA. Instead existing union representation under the CMSHA and MQSHA will be retained.

The *'Nationally consistent mine safety legislation'* consultation paper outlined generally why the CMSHA and MQSHA frameworks provide a clearer, more precise and proven effective approach compared to the Model Act approach.

The main issues in the *'Nationally consistent mine safety legislation'* paper included the importance of the vertical command and control of all activities at a mine and how issues of uncertainty and ambiguity could result if the Model Act's horizontally interacting 'persons conducting a business or undertaking' and the ambiguities relating to contractors and the PCBU and worker distinctions were introduced into the legislation applying at mines.

A short explanation was also provided about why the standard of acceptable level of risk is preferred as a clearer risk management standard providing potentially better preventative outcomes for high hazard mining compared to the less clear standard of so far as is reasonably practicable.

The less rigorous standard applying to workers compared to PCBUs and the absence of the concept of 'control' under the Model Act were also identified as backward steps if applied in the mining context. In contrast, the CMSHA and MQSHA require all persons to ensure to the extent of the responsibilities and duties allocated, that the work and activities under the person's control, supervision and leadership are conducted in a way that does not expose the person or someone else to an unacceptable level of risk.

Appendix G – Key issues favouring Option 1 over Option 3

The main differences between Option 1 and Option 3 are the differences at Act level. The 2012 Consultation Paper *Nationally consistent mine safety legislation* (June 2012 Consultation Paper) raised some of the legislative framework differences between the CMSHA and MQSHA and the Model Act. The differences can have an impact on how clearly important non-core policy such as improved contractor management can be implemented.

However, there are also a number of other features of the current Queensland mining safety and health legislative framework strongly preferred to the comparable approach under the Model Act due to safety effectiveness or/and also in some cases, due to avoiding additional costs to particular stakeholders. These features are noted after the following extracts from the June 2012 Consultation Paper.

The June 2012 Consultation Paper noted:

Option 1 builds on Queensland's current framework and incorporates components from the Model Act and Regulations which DNRM considers will improve safety outcomes. This option also includes the adoption of the non-core provisions agreed to by New South Wales, Western Australia and Queensland.

The Queensland Acts are based on a risk management model that requires the anticipation and control of problems before they arise. This is evidenced by:

- the safety and health management system
- proactive inspector's powers
- safety-oriented management structure
- a duty by all persons to ensure an acceptable level of risk.

Features of the Queensland framework that are superior to the Model Act framework are:

- focus on a systems approach
- vertical control of all activities on site
- acceptable level of risk—a proactive approach
- cooperation requirements
- workers' duties
- site senior executive.

Focus on a systems approach

A key outcome of the Moura Inquiry was the introduction of risk-based safety and health management systems, including specifically identified principal hazard management systems, for each mining operation. The importance of these systems is central to the Queensland Acts and Regulations. These systems incorporate risk management elements and practices that ensure the safety and health of persons who may be affected by mining operations.

Mine operators are required to proactively review their safety and health management system to ensure the system is effective and can constantly adapt to the changing

environment and interdependencies of complex mining operations. The Queensland framework enables the site senior executive, site safety and health representatives, industry safety and health representatives, mines inspectors, authorised officers and mine workers to play a proactive role in reviewing, inspecting or auditing the safety and health management system. The Queensland Acts enable proactive review by a wide range of people with differing expertise and perspectives and this increases the possibility of detection of flaws in the safety management system.

In a mining context, the importance and centrality of the safety management system to managing mining hazards indicates that such provisions should be in the principal Act. The current Queensland Acts combine the risk management and system requirements within an overall acceptable level of risk framework that is clearer and more proactive than the Model Act's 'as far as reasonably practicable' framework.

Vertical control of all activities on site

The Queensland Acts also focus on the importance of a single integrated safety and health management system (safety and health management system) for each mine. This means contractors who periodically work at a mine must follow the essential strict safety risk management controls required of all workers at a mine. The requirement that there be only one safety and health management system is a recommendation from a coronial inquiry and ensures all workers, regardless of rank or employment type, operate under the one system that is developed and implemented by the site senior executive.

This vertical control system at mines is an important distinction from the Model Act's Person Conducting a Business or Undertaking (PCBU) concept, which introduces a horizontal control structure in which there can be multiple PCBUs on one mine site. In a mining context it is not appropriate that the operator is potentially reduced to one among equals on the same level as the contractor under the Model Act. The operator and the operator's site senior executive must be able to have the ultimate checking and determination in relation to how a contractor's work will be integrated with and will follow the mine's safety and health management system.

The core mining Regulations attempt to require a single integration of safety systems. How the provisions are interpreted together with the Model Act is likely to be debated and disputed across regulators and stakeholders. Interpreting the integration requirements of the core Regulations subject to the Model Act is not as clear as the current requirements under the Queensland Acts.

The relevant International Labour Organisation (ILO) convention states in part, 'Whenever two or more employers undertake activities at the same mine, the employer in charge of the mine shall coordinate the implementation of all measures concerning the safety and health of workers and shall be held primarily responsible for the safety of the operations.'[9]

Safety and health at a mine arguably require greater attention to integration of systems due to the involvement of contractors than most other places of work. However, the Model Act only requires horizontal consultation, cooperation and coordination because it is designed to cover general places of work. If a duty holder refuses to consult, cooperate and coordinate, the relevant code of practice suggests that a duty holder be reminded of the general duties, 'that written arrangements may help clarify everyone's expectations,' and that duty holders should consider including requirements in contracts to provide a contractual right to enforce against each other if necessary.

[9] ILO C176 Safety and Health in Mines Convention 1995 - Article 12

Also, unless inquiries are made about business structures, in some cases it might be unclear whether a contractor doing a particular task is a PCBU or worker (different standards and consultation requirements apply depending on these two situations). Compliance and regulation is more complex because business structure is relevant to duties and consultation. However, the important issue is, 'What are the tasks for the contractor and what are the skills required of the contractor and any related competency and training issues?'

A clearer vertical management system, as provided under the Queensland Acts, enables operators to more easily:

- assess contractors including whether they have sufficient training, skills, expertise and resources and, where contractors may have specialised expertise, how this integrates with essential mining safety requirements
- ensure a contractor follows essential information provided to them from the safety and health management system in relation to hazards and how the contractor's work must respect those systems and how the contractor will integrate with the essential systems
- maintain a level of oversight of contractor activities.

Acceptable level of risk—a proactive approach

The Queensland Acts are based on a risk management model integrated around the concept of an acceptable level of risk that applies to all duty holders at a mine. Risk management is not as clear or systematic under the Model Act because it is subject to the 'weighing up' of factors at a particular time under the legal concept of 'as far as reasonably practicable'. The Model Act concept of 'as far as reasonably practicable' dates back to a 1949 United Kingdom case.

The Queensland acceptable level of risk approach was influenced by the safety culture theories of Professor James Reason and the contemporary risk management movement. Acceptable level of risk dates back to the wave of occupational health and safety reform of the mid-1990s regarding risk management and new technical analysis about acceptable and intolerable risk. Professor Andrew Hopkins has noted that the new thinking around acceptable risk arose through regulators in high risk industries seeking more objective ways to require operators to carry out further risk reduction activities. Acceptable level of risk as expressed through the Queensland Acts is a practical, adapted version of the acceptability of risk theories and focuses on the quality of management and risk management systems and processes over time.

Through the acceptable level of risk framework, Queensland's existing mining safety legislation and Regulations are also based on anticipating safety and health problems as proactively as possible, based on risk before they arise.

Analysis of workplace disasters by Professor Reason and others (including analysis of the Moura (Queensland) and Gretley (New South Wales) mining disasters by Professor Hopkins—see below) have highlighted the importance of proactively addressing latent system problems because disasters often cannot be avoided at imminent or immediate stage of realisation. In contrast, the Model framework is less robust because it has an overall imminent or immediate focus.

Professor Hopkins examined what led management to dismiss warning signs prior to the 1994 Moura (Queensland) and 1996 Gretley (New South Wales) mining disasters.[10] The inquiries following both disasters each blamed the events on management failure and found the disasters could have been prevented. Hopkins referred to fellow academics, including Professor Reason, who wrote of active failures behind immediate causes, as well as latent failures from underlying system inadequacies, and misinformation. Hopkins found parallels in the details of management neglect that lead to each disaster.

Hopkins suggested that, to overcome these problems, a policy would be to structure decision-making with imperatives to action in certain circumstances which rule out denial, Hopkins recommended that hazard management plans should do the following:

- involve careful analysis of how the danger might arise
- cover how crucial safety information may be incorrect
- identify warning signs which will be treated as triggers to action
- specify to some extent what kinds of actions are mandatory when warning signs are observed and who is responsible for taking the action.

Hopkins also recommended a built-in bias towards taking action.

The Queensland Acts contain this built-in bias towards taking action by specifying what kind of actions are required when risk is unacceptable. The Queensland Acts also clearly contain a proactive approach including activities enabling inspectors to identify possible latent systematic failings e.g. directives to review the safety health management system, have an independent engineering study, carry out a test, ensure a worker is competent, reduce risk, and so on. The Queensland proactive approach aims to gain attention early before injuries or deaths occur, to correct and to educate. In many cases, an inspector may not be present, or it will often be too late for an inspector or others to be trying to intervene when an incident is about to occur through immediate or imminent causes.

The acceptable level of risk framework enables the Queensland Mines Inspectorate to regulate proactively and focus on the quality of the systematic risk management systems and address latent safety system issues before they contribute to incidents, as well as any imminent and immediate issues. The proactive Queensland framework enables potentially better preventative outcomes compared to the reasonably practicable Model Act framework.

Cooperation requirements

The current Queensland mine safety legislation was formulated following the 1994 Moura mine disaster. This most recent in a list of disasters resulting in multiple loss of life from underground mine explosions had a profound effect on everyone in the industry. There was overwhelming agreement by all mining industry stakeholders that every effort should be made to prevent any recurrence.

Much was achieved as a result of this joint effort. The ideal of working jointly at a high level is included in the Queensland Acts in the provisions that cover 'Cooperation to achieve objects of Act' and 'Industry consultative arrangements.'

[10] Hopkins, A. 'A culture of denial: sociological similarities between the Moura and Gretley mine disasters,' 2000, J Occup Health Safety – Aust NZ, 16(1): 29-36

Workers' duties

Embedded in the ideal of cooperation is the process of involving mine workers in the management of risk. The Queensland Acts have a duties section that places obligations on persons generally. This includes requiring all persons to ensure, to the extent of the responsibilities and duties allocated, that the work and activities under the person's control, supervision and leadership are conducted in a way that does not expose the person or someone else to an unacceptable level of risk.

In contrast, the Model Act has intentionally excluded 'control' from its duty of care framework. Under the Model Act there is a notional or an extended idea of the PCBU through the 'officer' concept requiring the officer to exercise due diligence to ensure the PCBU complies. Under the Model Act there are very likely to be arguments in some cases about who is, or is not, an officer and the expectations on workers (the next Model Act category down from officers), which would include statutory position holders, are noticeably weaker in not requiring proactive and proper diligence of workers as well as officers.

In the current Queensland Acts all persons, workers included, on site are involved in risk identification and reduction. Additionally, if a mine worker is competent and able to eliminate the danger from a hazard, the worker must take the action necessary to eliminate the danger or if they are not competent or able to eliminate the danger, the worker must take reasonable measures to prevent immediate danger to other mine workers and immediately report the situation to their supervisor.

The defences applying to all duty holders under the Queensland Acts look for reasonable precautions and proper diligence for all duty holders. The Model Act framework defines the obligations of workers in a much more limited way and does not clearly indicate how a supervisor or statutory officer, compared to a supervised worker, would interpret individual duties because there are no references to considerations such as information, control, supervision or leadership, particular responsibilities, or involvement in risk management. This contrasts markedly with the clearer provisions in the current Queensland Acts.

Although workers are consulted under the Model Act and Regulations, they are primarily confined to roles that seem reactive, rather than roles in which they may also be competent in some cases, to manage risk. The Model Act framework would need to be changed or at least added to, to cover workers with higher level safety obligations than, for example, a worker in a commercial office or a retail centre.

The differences are mainly due to the mature or comparatively well developed overall safety culture at mines, in part related to statutory position holders and their safety and risk management related competencies and safety-skilled workers generally at mines, compared to some general workplaces, and the proactive standard of acceptable level of risk applying to all duty holders under the Queensland Acts.

Site senior executive

Queensland requires operators regardless of size and business structure to appoint a site senior executive (SSE) to each site to take individual responsibility and be accountable through specific obligations and powers to manage the organisation's safety and health obligations. Lower levels of management also have specific obligations.

The appointment of an SSE is related to the boundaries of the mining operations or parts of the mine for which the SSE has responsibility. Queensland's current provisions applying to SSEs mostly reflect the NMSF non-core policy. We propose to retain these provisions in their current form.

Other legislative differences between Option 1 and Option 3 not covered in the earlier consultation paper

Arrangements for consultation, representation and participation

The current existing Queensland legislative requirements for site safety health representatives (SSHR) and safety committees will be retained rather than replaced with the provisions from the Model Act.

The Model Act approach enables SSHRs to relate to numerous work groups and the business of each interacting PCBU. This would add significantly to the complexity and inefficiency on a large site with multiple PCBUs and does not fit the vertical command and control integration of activities approach at a mine.

The Queensland safety and health management systems have been built around a mature safety culture. Current requirements have been embedded in industry. This has built a substantial safety capital in the Queensland mining industry.

Over the last 10 years the safety and health management system has evolved along with the role of the SSHR and is also the cornerstone in ensuring risk is adequately managed and integrated into management systems. The provisions in the Model Act do not sufficiently reflect this mature safety culture.

Similarly the current functions of ISHRs and DWRs including contributions to tri-partite consultations that will be retained.

WHS permit holders will not be introduced as this would add significantly to the complexity and inefficiency at a mine. Similarly, Model Act penalty infringement notices will not introduced. Instead all reports of, and findings and recommendations resulting from, inspections, investigations and audits carried out at a mine under the current Acts are required to be kept in the mine record. This includes inspections by SSHRs. There is a requirement for the report to be provided to an inspector if it identifies an immediate safety risk.

Inspector and authorised officer qualifications

The Model Act does not provide for appropriate qualifications and experience as a pre-requisite to being appointed an inspector.

Instead inspector and authorised officer qualifications and experience will be maintained as they currently are in the CMSHA and MQSHA to maintain an effective inspectorate. This will also continue to follow the Moura Warden's Report, and Ombudsman's report that inspectors have equivalent skills and experience similar to those they are regulating.

Retaining the current provisions will also continue to allow for other current specialists with specific skills and qualifications other than inspectors including occupational hygienists and investigators.

Functions and powers of inspectors

The mine safety and health inspectors have specialist functions reflecting their specialist skills for mining compared to the Model Act which only covers general functions for general inspectors.

The CMSHA and MQSHA also enable the remote exercise of powers due to the often remote location, size and complexity of the mining industry without the requirement for only being able to exercise powers on entry to a workplace.

However, the general WHS inspectors have access to any building whereas the Mining inspectors only have right of entry to defined mines and some restrictions on entry to other workplaces. This restricts mining inspectors exercising certain powers with mine operators, holders and other obligation holders (e.g. contractors) where the offices and officers and other work places are not located on mines. The additional access provided by the Model Act can be picked up in the CMSHA and MQSHA.

Additional actions after a worker ceases work due to risk

The current Queensland framework (as does the Model Act) enables workers to cease work due to safety concerns. However, the current Queensland framework also requires that if a worker has ceased work due to safety issues, if the operator or operator's representative subsequently asks or directs another worker to place himself in the position the original worker removed himself from, the operator or representative must advise the subsequent worker of what the original worker did.

The Queensland framework ensures workers are informed when being asked to undertake work that other workers have refused for safety concerns.

Reporting requirements after a serious accident/fatality

Compared to the Model Act, the CMSHA and MQSHA have more developed reporting requirements after an incident including primary information and the requirement for the SSE to conduct an investigation.

This more comprehensive investigative system under the CMSHA and MQSHA was developed after incidents highlighted the need.

Enforceable undertakings

The Model Act includes enforceable undertakings. Enforceable undertakings will not be adopted as Mine Safety and Health can achieve similar outcomes in a less structured and formal way under current compliance policies.

Enforceable undertakings seem more appropriate as an option for smaller corporations and businesses rather than for larger corporations who predominate in the mining industry.

There would be significant annual ongoing costs to Government to establish and maintain a mine safety and health enforceable undertakings unit.

Clarity

Overall, trying to understand and interpret safety and health at a mine through the generalisation required for a general workplace or overarching Model Act is less clear and precise and would be less consistent with fundamental legislative principles.

Appendix H – Difficulties quantifying safety and health and consistency benefits

The following are some extracts from recent Regulatory Impact Statements indicating the challenges with cost benefit analysis of safety and health benefits, as well as for compliance cost savings through greater consistency across jurisdictions.

This RIS covers potential benefits from greater consistency with the other major mining states, as well as potential benefits from improved safety and health standards.

Greater consistency is related to lower compliance costs for multi-state businesses. This was the focus of the following 2009 Commonwealth RIS for the Model WHS Act. However, the compliance cost savings predicted in 2009 through a survey was based on the assumption that uniformity across general workplace jurisdictions would be achieved but this has not occurred. The extent of uniformity implemented to date is covered in **Appendix F**.

The Commonwealth RIS for the Model WHS Act asserted that compliance costs caused by inconsistencies between jurisdictions are unlikely to have any offsetting safety benefits but this statement was made about inconsistencies across general workplaces and did not consider mining industry specific safety and health legislation. DNRM's Consultation Paper in 2012 briefly set out the safety and health advantages of the current Queensland mining safety framework and this information is included in appendix G.

Some relevant extracts from the RIS for the Model WHS Act indicate that compliance costs caused by differences are largely unknown, making benefits from greater consistency difficult to assess. It notes that the main costs of changes to achieve consistency would be learning to play by the new rules.

The Decision Regulation Impact Statement for a Model OHS Act 9 December 2009 by Access Economics concluded that:

> *'The actual costs of OHS compliance in Australia are not known, as there have been no surveys by the Australian Bureau of Statistics or any other authority. It is generally accepted that for most OHS laws, of which there have been regular reviews, there should be at least offsetting safety benefits.*
>
> *These benefits comprise, for employers, largely financial gains such as higher productivity, lower staff turnover and reduced workers' compensation premiums. Most of the safety benefits are for workers, and are largely non-financial, realised through better health outcomes due to fewer incidents and lower exposure to occupational risks for disease or injury.*
>
> *However, costs caused by overlaps and inconsistencies between jurisdictions are unnecessary and are unlikely to have any offsetting safety benefits. Moreover, if general OHS compliance costs are little charted, the extent of compliance costs caused by differences between jurisdictions is largely unknown.*
>
> *The model Act will reduce differences across jurisdictions at the legislative level. However, it is difficult to assess the precise benefits this will bring to businesses. First, the model Act does not significantly depart from the general structure and content of existing OHS legislation, but rather*

consolidates existing elements in a more consistent manner. Therefore, it is expected that implementation of the model OHS Act will not significantly change current OHS responsibilities.

Second, as such Acts consist of general duties, they only represent part of the total compliance costs, which are also incurred in subordinate regulations and compliance policies….

The most significant aspect of the model Act is that it will recast the primary duty holder structure from one defined by the employment relationship (i.e. employer/employee) to one based on a broader range of work relationships. The principal duty holder under the model Act will be a person conducting a business or undertaking and the duty of care will be owed to all types of workers carrying out activities for that business or undertaking and to any other person affected by those activities.

The main costs to business of introducing the model Act will be in learning how to 'play by the new rules'. These costs are not known either, but are not likely to be significant, given that the model Act retains the general duties of care that exist in current OHS Acts. '

In relation to workers it concluded:

'It is unlikely that there will be any significant costs to workers. The cost of training (beyond that required for the normal volume of OHS changes) and of additional safety systems (if any) will be paid for by employers. However, in some labour hire or sub-contracting arrangements, self-employed persons may be workers, but also have responsibilities as persons conducting a business or undertaking.

In terms of benefits to workers, the model Act ensures that all types of workers (not only employees) are equally protected by the OHS laws. Nationally consistent OHS laws will also contribute to the ease with which workers can move between jurisdictions (particularly self employed contractors), by allowing for Regulations to be made for mutual recognition of OHS licenses across jurisdictions.

More detailed requirements in OHS Regulations and practical guidance in codes of practice can bring about further improvements in worker safety. However, it is difficult to quantify any changes to incident outcomes from as yet unspecified consequent changes to Regulations…The survey associated with this RIS found an expected minor benefit to worker health, of around 0.4 per cent, but this figure cannot be considered robust.'

Other conclusions related to governments were:

'… If nationally consistent legislation reduces workplace incidents, governments may benefit from increased taxes and reduced welfare payments.'

Access Economics concluded that:

'for multi-state businesses, the model Act possibly confers benefits in the order of around $179 million per annum. For single-state businesses, most

> *jurisdiction-specific changes are neutral or cost-saving. Those which may increase costs are small. Furthermore, all businesses, including single-state ones, will benefit from increased clarity and more integrated ongoing reforms…The reduction of red tape and greater certainty for duty holders should allow business to focus more pro-actively on health and safety improvements, rather than on mere compliance. .. From the survey, it is possible that implementation of the model Act may reduce claims by around half a percent.'*

Subsequent regulatory impact statements included Safe Work Australia's Decision Regulation Impact Statement for National Harmonisation of Work Health and Safety Regulations and Codes of Practice.

At page 264 under summary of benefits, it was noted:

> *'There is evidence to suggest that harmonisation provides a net gain to the Australian economy. Limitations in the survey response and design preclude reliance on exact numbers but the following discussion indicates relative magnitudes of costs and benefits across groups using the assumptions discussed in this chapter and Appendix E, including that a significant change from the survey responses is considered to be 5 per cent or greater. The Consultation RIS made it clear that firms have historically had difficulty quantifying the costs and benefits of existing work health and safety regulation, let alone untested proposed future changes. The quantitative estimates in this chapter do not form the main body of evidence for the conclusions in this Decision RIS but rather are one source among many, specifically public consultations, submissions and other research.*
>
> *The quantitative cost estimates from the survey are supported by qualitative evidence from consultations as well as submissions and desktop research. Quantitative benefit estimates of improved safety are not so well supported by the same qualitative sources. While this work health and safety is based on harmonisation rather than optimisation per se, it still provides an opportunity to reform some Regulations that did little to enhance safety. The modelled 1.2 per cent improvement in safety appears reasonable in the real world context. …'*

In 2012, Safe Work Australia, produced a Draft Decision Regulation Impact Statement for the Model WHS Regulations and Codes of Practice for Mines. This RIS was for the 'core' mining Regulations, as the earlier RIS had covered the Model Regulations for general workplaces.

At page viii of the Executive Summary, the Summary noted the difficulties in undertaking cost benefit analysis for work health and safety in general as it is often difficult to link changes in safety outcomes with changes in regulatory regime. The Summary also noted that potential productivity gains had not been costed given the difficulties in estimating efficiency improvements arising from the proposed mining reforms.

Productivity Commission Report 2012 on the Impacts of COAG Reforms: Business Regulation and VET at pages 171 to 172, on the harmonisation process for general workplaces, noted the following difficulties in robustly estimating the benefits of OHS reforms and how there are limitations in using the three reports that have addressed costs and benefits:

'The OHS reforms were scheduled to begin in January 2012. However, to date only five jurisdictions — the Australian Government, New South Wales, Queensland, the Australian Capital Territory and the Northern Territory — have implemented the model laws. The resulting mix of laws suggests that the gains from this reform will not be realised for some time and, assuming model laws are implemented in the remaining four jurisdictions, will be prospective in nature. However, it should be noted that significant risks remain to the full implementation of these reforms (as outlined earlier). Given the prospective (and possibly potential) nature of the benefits of the OHS reforms, assessment of the impacts relies on ex ante estimates.

Indicative information to guide estimates of prospective benefits (and costs — see next section) is available from studies completed as part of the RIS process. These include the RIS prepared for the model OHS laws, and the RIS prepared for the model OHS Regulations and take into account the position of the Western Australian Government. Other research on the costs of differing OHS regimes also exists — such as that done by the Commission in its benchmarking report of 2010.

Together, these three reports are the primary sources of evidence used to estimate the impacts in this study. It should be noted, however, that these studies have limitations for the purpose of this study, including:

- low survey response rates — while Access Economics (2010) surveyed businesses on the likely costs and benefits from key changes in OHS laws, the response rate to the survey was low with less than 30 respondents. Access Economics reported that such a low response rate casts doubt over the usefulness of the estimates, meaning they did not have enough confidence to suggest the quantitative analysis replace the qualitative assessment for making the decision to implement, or otherwise, the reforms.
- Access Economics conducted a second survey for the decision RIS for OHS Regulations (Safe Work Australia 2011). This survey had a higher response rate. However, despite some improvements, estimates remained *ex ante* and are based on perceived changes.
- data obtained from questions designed for a different purpose — the Commission's OHS benchmarking report (Productivity Commission 2010b) examined the differences in OHS regulation across jurisdictions and identified unnecessary burdens placed on business. The Commission collected some compliance cost information as part of this study, but it did not focus on cost savings from harmonisation. Further, as the survey did not capture large businesses, very little information was collected for multi-state firms, making inferences difficult.

Despite this, in the absence of other data, these sources represent the best available information on which to make estimates of the prospective impacts the reforms.'

Since the National RIS, the Productivity Commission's Report 'Impacts of COAG Reforms – Business Regulation' has analysed who is most affected by changes in OHS laws as follows at 8.2. The Report noted that an earlier benchmarking study found that only a small proportion (nine per cent) of businesses surveyed found that interjurisdictional differences had an impact on their business, and of these nine per cent, 72 per cent of the nine per cent found the differences negative and 28 per cent found the differences positive.

However, the statistics do not relate to mining and robust mining specific statistics have not been available for use.

> *'OHS laws affect most businesses and workers in the economy with the exception of those whose OHS requirements are governed by industry-specific OHS Acts — such as mining in Queensland and Western Australia. Further, as the effects of workplace injury and illness are borne by individuals and their families, OHS regulation has the potential to also indirectly influence society more generally.*
>
> *The most recent estimate by Safe Work Australia (2012) found the total economic cost of work-related injury and illness for the 2008-09 financial year to be $60.6 billion, representing 4.8 per cent of GDP. Injuries accounted for about half of this cost — $30.7 billion or 51 per cent.*
>
> *Safe work Australia found that workers bear much of the cost of workplace injury and illness. For 2008-09, it estimated that:*
>
> – *five per cent ($3.2 billion) of the total cost was borne by employers through lost production, employer funded medical expenses and legal costs;*
>
> – *74 per cent ($44.9 billion) was borne by workers and their families through loss of income (net of compensation, welfare and tax), medical costs, legal costs and carer costs (net of government payments); and*
>
> – *21 per cent ($12.7 billion) was borne by the community through welfare and other government payments, public medical expenses, legal and government administration costs and deadweight losses from tax collection.*
>
> *The costs associated with differing OHS regulatory regimes are generally borne by businesses which have a presence in multiple jurisdictions. In 2009, 1.7 per cent of all businesses were classified as multi-state firms — that is, those which had employees based in more than one State or Territory (see table 1.1).*
>
> *….Small and medium enterprises that operate solely within a single jurisdiction may still be affected by differences in OHS Regulations directly through purchasing or selling goods and services from interstate, or indirectly through competing with businesses located in other jurisdictions which may face higher or lower compliance burdens associated with OHS regulation.*
>
> *The Commission's earlier benchmarking study of OHS regulation identified a number of areas where small and medium enterprises reported that differences in Regulations had an impact on their business. Only a small proportion of all businesses surveyed suggested that inter-jurisdiction differences had any impact on their business — nine per cent. Of these, 28 per cent suggested differences had a positive impact, with 72 per cent suggesting the impact was negative.'*

Appendix I – Cost analysis of National Mine Safety Framework proposals in Queensland

Summary

This analysis examines the two options currently being considered for implementing the National Mine Safety Framework (NMSF). These are:

Option 1 – retain Queensland's two mining Acts for the coal and metalliferous sectors, plus amendments based on provisions from the Model Act, core and non-core NMSF that increase safety and health and consistency with other states.

Option 3[11] – develop new mine safety legislation primarily based on the Model Act, and core and non-core NMSF provisions that increase safety and health and consistency.

While the potential benefits of each option were not modelled explicitly due to a lack of data, an illustrative example of quantified benefits are presented to frame the case for action compared to the status quo.

Key findings include:

- The benefits of the amendments are to improve safety and health in Queensland mines. In particular it is expected that:
  - There would be a fall in injuries due to amendments such as existing positions requiring statutory certificates and clarification of contractor management requirements. If this reduction was one per cent for the first two years when Option 1 is introduced, and two per cent each year after, the benefits would be $1.6 million (equivalent annual value)[12]
  - There would be a reduction in the risk of an underground coal mining disaster due to the package of options, particularly improved stonedusting requirements and installation of stonedust explosion barriers. This reduction in disaster risk would not only help avoid fatalities that carry high social costs, but also reduce the risk of mine closure and sterilisation (permanent loss) of coal resources as a result of an explosion. There is not sufficient information available on the baseline risk of an underground coal disaster in Queensland to model these risks adequately. However, an exploratory quantification was carried out to illustrate the potential benefits. If there is a baseline disaster risk of only five per cent per year, and this risk falls by 20 per cent as a result of the proposed changes, the benefits of Option 1 outweigh the costs. This is assuming a minimal amount of coal sterilisation. .

The total equivalent annual value of costs for Option 1 (based on a present value of costs over a 10 year period[13]) is $5.6 million per year. Of this, stonedusting requirements represent $3 million per year (as an equivalent annual value) for the total underground coal mining industry in Queensland, and the cost associated with the new statutory

[11] Option 2 was considered in an earlier consultation document, but was not considered here as the initial analysis suggested that was similar to the other options, and did not offer any likely benefit

[12] Present value is the total value of the future benefit stream (ten years) in present day terms - this allows costs and benefits to be compared at the point where decisions are made. This can also be presented as an 'equivalent annual value'.

[13] Present value is the total value of the future benefit stream (ten years) in present day terms - this allows costs and benefits to be compared at the point where decisions are made. This can also be presented as an 'equivalent annual value'.

positions (which will be performed by existing staff with new certifications) is $2.6 million (as an equivalent annual value) across all mining industry in Queensland.

- Option 3 is significantly more expensive with an equivalent annual value of $27.8 million per year (based on present value of costs over a 10 year period). This is driven by the high transition costs, as it is assumed miners will need to spend time learning the new legislation. There are also concerns about potential reductions in safety and health standards under the Model Act.
- The results are different for different types of mines
  - Underground coal mines bear the bulk of the costs due to the improved stonedusting requirements. However, the benefits of disaster risk reduction also accrue to underground coal mine operators, their employees and coal mining communities. The estimated equivalent value is $3.2 million per year for Option 1, and $6.2 million for Option 3 for the coal mining industry as a whole.
  - The annual costs are minor (<$350,000/year as equivalent annual value) for the surface coal industry, surface metalliferous industry and quarry mining industry under Option 1. The costs for Option 3 vary depending on industry size, but range from $1 million (quarries) to $13.1 million (surface coal) per year. All of these costs are across the mining industry in Queensland as a whole.
  - Underground metalliferous mines have an equivalent annual cost of $1.5 million for Option 1, and $3.7 for Option 3 for the industry across the state.

Cost analysis of National Mine Safety Framework proposals in Queensland contents

1.0 Introduction

1.1 Overview of the options

The COAG endorsed a NMSF in the interests of encouraging consistency in regulation across jurisdictions. Queensland has participated in the NMSF with the proviso that Queensland must not be disadvantaged through adopting any national provisions, including any diminution of safety standards.

Queensland currently has two mine safety Acts – CMSHA and MQSHA.

Option 1 – retain Queensland's two mining Acts for the coal and metalliferous sectors, plus provisions from the NMSF that increase safety and health and consistency with other states.

Option 2 – build new legislation by combining Queensland's two mine safety Acts into one piece of legislation covering coal and metalliferous sectors, plus provisions from the NMSF that increase safety and health and consistency with other states.

Option 3 – develop new mine safety legislation primarily based on the Model Act, plus NMSF provisions that increase safety and health and consistency.

All of these options are compared with the status quo of no changes to policy. Any costs that are quantified are presented in relation to the status quo.

These options were explored in a consultation document. Consultation has occurred with a wide range of stakeholders, including the Queensland Resources Council, the Construction, Forestry, Mining and Energy Union, mining companies, Queensland mine safety regulators and inspectors and the Board of Examiners.

Option 2 is not investigated further in this report. The initial analysis did not identify additional benefits from having combined legislation. As such only Option 1 and Option 3 are investigated in the cost analysis.

1.2 Assumptions

This analysis is a desktop study based on published data and information from industry sources.

The jurisdiction covered by the analysis is Queensland – i.e. the costs to Queensland are primarily considered. The perspective is for all of Queensland society. The costs are not disaggregated into societal sectors, as the mining industry will bear most of the costs so disaggregation would not add a significant amount of information.

The time frame of the analysis is 10 years, in line with the default time frame suggested by Queensland Regulatory Assessment Statement Guidelines (version 2.1).

In this analysis, the average cost of labour is taken to indicate the value of time. For coal mining this is $104.45/hour, and for metal ore mining $89.58. These figures are based on Australian Bureau of Statistics (ABS) sources (2012) and include on-costs following the methodology in DERM (2011). However, as the safety roles relate to senior roles within

mines, it is likely this average under-estimates the cost of time. A 20 per cent premium was added onto the ABS average to account for this.

Inspector's time was estimated at $72/hour. Secretariat support is indicated by an AO4 salary of $45/hour.

Where historical information is used, the average for the last three years of available data is used to account for annual variability in figures.

A discount rate of seven per cent is applied to the figures to calculate the present value of costs (following Australian Government 2010).

The options are compared to a base case of the status quo. This is the world without the policy interventions described in Option 1 to Option 3. This means that costs are presented as relative to the status quo. The options described require new actions compared to the status quo, and as such are quantified in their entirety.

The overall Net Present Value is not calculated for either option. This is because the main benefit from Option 1 – a reduction in injuries and disaster risk at underground coal mines –.has not been explicitly quantified due to lack of data. Some other minor benefits are quantified in Option 1.

However, a brief illustrative quantitative example is presented to help clarify the benefits of the options. The assumptions for this example are outlined in Section 2.2.

2.0 Option 1 costs and benefits

2.1 Overview

Option 1 involves:

- Maintaining current legislation (CMSHA and MQSHA)
- NMSF amendments to increase consistency with other states or improve safety and health. These can be seen in the RIS document in Appendix E.
- Only two amendments are analysed here as they are additional to the base case of maintaining the CMSHA and MQSHA, and are expected to cause an increase in costs:
  - Greater consistency in relation to statutory position requirements and competency requirements
  - Changed stonedusting requirements (underground coal only).

2.2 Safety benefits

The main benefit of the proposed amendments is to increase safety and health in the mining industry, and reduce accidents. Although Queensland has an enviable safety record in mining, each year there are significant high potential incidents that occur. The lost time injury frequency rate (LTIFR) also increased across some mining sectors in the last year (NRM 2012b). This indicates that safety improvements can still be made.

Details on the safety benefits can be found in the Regulatory Impact Statement and its appendices. The general safety benefits expected include:

- greater consistency in relation to statutory position holders and competency requirements
- those entrusted to fulfil statutory roles are at the frontline of safety and health at a mine and are accountable for providing oversight of the management of mining hazards and risks. They are there because they are required to have higher competency levels than other workers whom they safeguard. It is a significant concern that some mines have been appointing workers who are not competent to fulfil safety critical roles. The proposed Board of Examiners certification measures are expected to decrease the risk of less competent officers holding important critical safety positions within mines. A related benefit of making other safety critical roles statutory is to increase the status and calibre of those safety critical positions within mines. This benefit was identified by Professor James Reason through his internationally renowned occupational health and safety research.
- this will allay a not uncommon industry perception of weaknesses in the current mutual recognition scheme, where people who are certified in less comprehensive schemes may be able to have their qualifications recognised in Queensland. There will be greater confidence in their safety credentials if there is greater consistency of eligibility criteria and competency requirements and statutory positions
- changed stonedusting requirements (underground coal only)
- likely to reduce the risk of explosions and ignitions
- stonedusting barriers will help contain any explosion that does occur.

For this study it has not been possible to robustly quantify these safety benefits offered by the proposals within Option 1. This is due to uncertainty over quantifying:

- the risk of an underground coal disaster if intervention occurs (i.e. the baseline risk of an underground coal mining disaster). Historical data was not felt to be a good guide to risk as Queensland's safety laws have changed significantly since the last coal mining disaster (Moura 1994), and thus pre-1994 data is not a sound indicator of future risk of disaster. Although there has not been a disaster in Queensland since 1994, DNRM does not believe this means there is zero risk of an underground coal mining disaster, and do not believe it is appropriate to model the risk as zero
- the likely reduction in baseline risk of disaster as a result of additional requirements under Option 1 and Option 3
- the likely reduction in risk of injury from the proposed Queensland policies. Aggregated data on the causes of current injuries is not available, and so it is difficult to quantify the likely impact of proposed changes to future injury rates in Queensland. This challenge to quantify robustly echoes the findings of Access Economics (2011) and the Productivity Commission (2010).

However, there are potentially significant social and economic benefits from the proposals put forward in Option 1. In particular:

- the reduction in risk of an underground mining disaster would have benefits for mine owners, mine workers and mining communities. In particular:
  - there would be less potential fatalities from a disaster. There were an average of 14 deaths from the mining disasters in Queensland between the 1970s and 1990s. As more miners are on-shift in larger mines in the present, fatalities could conceivably be even higher
  - the national Office of Best Practice Regulation has suggested that the value of an avoided death is $3.95 million.[14] In addition to this, as a consequence of a fatality there are unquantifiable negative social and psychological impacts on the families, friends and communities impacted by the disaster
  - a mine would stand to lose significant income from the temporary closure of a mine as an investigation occurred – this can be a lengthy process
  - in addition to the temporary closure, it is likely there would be some sterilisation (permanent loss) of coal resources due to conditions being too dangerous around the impacted seam, and due to sensitivity over disturbing a grave site. Thirty million tonnes of coal were sterilised after the 1994 Moura disaster (internal NRM figures). It is not clear how much sterilization has occurred after other mining disasters, or how much could be expected from a future Queensland underground coal mining disaster
- safer work practices are likely to result in a fall in injuries. Safe Work Australia (2012) weighted the standard Office of Best Practice Regulation's value of an injury-free year by the most common injuries in mining. This revealed a value of $97 000 per injury free year.

Illustrative quantification of safety benefits

As noted above, there is little evidence to support explicit modelling of the safety benefits for Option 1. However, some illustrative figures are presented here to help complement the costing analysis.

[14] The original value was $3.5 million in 2008

Using the Safe Work Australia figure for the value of injuries, and following their assumption of a two per cent growth in injuries per year in the status quo world due to increased employment:

- If Option 1 leads to a two per cent fall in injuries each year over the eight years that all new regulations are in place (and one per cent fall each year in the first two years due to some of the other reforms having taken place and a transitional period for others), this is a benefit of $1.6 million per year on average over the 10 year analysis period.

The present value of these injury reductions is $11.4 million.

There is no evidence for the baseline risk of coal mining disasters in Queensland, or the potential impact of a disaster (especially about the permanent loss of coal resources that might occur). However, if:

- there is a five per cent baseline risk of disaster in underground coal mines (i.e. each year there is a five per cent risk that there will be an underground coal mining disaster)
- the reforms reduce the risk of an underground coal mining disaster by 20 per cent in each year.

Then the associated benefits could be:

- $1.1 million per year for the avoided deaths, assuming the disaster leads to 28 deaths (double the average of deaths in pre-1994 Queensland disasters to reflect great number of workers per mine) and the national OBPR value for a statistical life
- $1.9 million per year in reduced risk of loss in production for one year as the mine is shut for investigation. Here an average forecast coal price of $144/tonne is used (BREE 2013) weighted by the average proportion of thermal and metallurgical coal produced by Queensland between 2007–08 and 2011–12. The net economic loss resulting from this loss of production is estimated at 70 per cent of the value of coal mining lost. This is based on data from national input-output tables (ABS 2009)
- $2.9 million per year in reducing the risk of a permanent loss in coal (sterilisation) of 2 million tonnes (based on an average coal mine that has two-thirds of its resources remaining and loses one per cent to sterilisation). This is likely to be a conservative estimate as there is potential for far greater loss of coal resources after a disaster. Approximately, 33 million tonnes of coal was excluded from production at Moura after the 1994 disaster (DNRM internal sources).

The present value of these disaster risk reduction benefits is $44.2 million.

In total, the safety benefits modelled in this illustrative example would be $58.3 million, or $8.3 million in equivalent annual value. If used in a net present value calculation with the costs documented in the rest of chapter two, this would be a positive result of $18.6 million (EAV $2.7 million).

2.3 Other benefits

There are some other minor cost savings expected from Option 1.

As discussed in more detail in the RIS, there will no longer be a requirement for coal mines to annually submit their site plans to DNRM. This is expected to save approximately four hours per underground coal mine and 40 hours per surface coal mine. This results in a saving of $8493 per year for all underground coal mines across Queensland and $324,714 per year for surface coal mines across Queensland.

DNRM is expected to save two hours per plan not processed, saving a total $7300 per year for all applications.

In total, removing the requirements for coal mines to not submit plans annually will save approximately $338 000 per year in total.

There will also be some minor savings as a result of mutual recognition not being necessary as a result of the new statutory positions requirements. Workers moving from inter-state will benefit from not having to sit a mutual recognition test, while the Board of Examiners will save on not having to issue mutual recognition certificates. In total these benefits are worth $15 000 per year in total.

2.4 Statutory position holders and competency requirements - costs

There is a proposal to turn existing critical safety roles into statutory positions at mines with position holders requiring competency certificates. This is likely to increase the pool of competent staff across Australia and increase certainty in the capability of mine workers regardless of where they were certified. This will also increase the status and credibility of the role of statutory position holders, which could increase the safety culture in mines (Reason, 1997).

Over the last three years, there was an average of 65 certificates issued each year (Board of Examiners annual report). The number of candidates for statutory positions expected in the first five years is 2 660, or 532 per year. These will not all be new full time employees – rather they are requirements that may be met by existing staff when appropriately trained. The distribution over the different industries is shown in Table 1.

SSE certificates require a written exam. Other positions require both a written and oral exam. Quarries are certified through the Institute of Quarrying Australia (IQA).

Note: it is envisaged that positions will not require new employees, but rather will be met by existing employees with new certification requirements.

Table 1 - number of statutory positions

Role	Number of mines	Number per mine	Total statutory positions	Assessment (assumed for purposes of this study)
Coal underground				
Practising certificates already issued for underground mine manager, deputy; site senior executive already required to pass legislation exam so there will be no additional requirements for these positions.				
Undermanager (Second class ticket already	13	5	65	Board of Examiners written and oral exams

exists but is not compulsory)				
Electrical engineering manager	13	2	16	Board of Examiners written and oral exams
Mechanical engineering manager	13	2	16	Board of Examiners written and oral exams
Ventilation officer	13	2	16*	Board of Examiners written and oral exams
Coal surface				
Practising certificate already issued for open cut examiner; site senior executive already required to pass legislation exam so there will be no additional requirements for these positions.				
Mine manager	65	2	130	Board of Examiners written and oral exams
Underground metalliferous				
Practising certificate already issued for underground mine manager so there will be no additional requirements for this position.				
5-19 people				
Underground mine manager*	2	2	4	Board of Examiners written and oral exams
Site senior executive *	2	2	4	1 hour Board of Examiners written exam
Ventilation officer	2	1	2	1 hour oral exam
Electrical supervisor	2	2	4	1 hour oral exam^
Mechanical supervisor	2	2	4	1 hour oral exam
Shot firer	2	1	2	Shot firer's licence
20 or more people				
Mine supervisor	12	42	504	Board of Examiners written and oral exams
Site senior executive	12	2	24	Board of Examiners written and oral exams

Electrical supervisor	12	2	24	1 hour oral exam
Mechanical supervisor	12	2	24	1 hour oral exam
Ventilation officer	12	1	12	1 hour oral exam
Shot firer	12	70	840	Shot firer's licence
Surface metalliferous				
5-19 people				
Mine manager*	16	2	32	Board of Examiners written and oral exams
Site senior executive*	16	2	32	1 hour Board of Examiners written exam
Electrical supervisor	16	2	32	1 hour oral exam
Mechanical supervisor	16	2	32	1 hour oral exam
Radiation safety officer*[15]	9	1	9	Radiation course
20 or more people				
Mine manager	29	2	58	Board of Examiners written and oral exams
Site senior executive	29	2	58	Board of Examiners written and oral exams
Electrical supervisor	29	2	58	1 hour oral exam
Mechanical supervisor	29	2	58	1 hour oral exam
Quarries				
5-19 people				
Site senior executive*	88	2	176	IQA certified practising supervisor
Manager *	88	2	176	IQA certified practising supervisor

[15] Based on current number of companies exploring for uranium

Electrical supervisor	88	2	176	1 hour oral exam
Mechanical supervisor	88	2	176	1 hour oral exam
20 or more people				
Site senior executive *	18	2	36	IQA certified practising manager
Manager*	18	2	36	IQA certified practising manager
Electrical supervisor	18	2	36	1 hour oral exam
Mechanical supervisor	18	2	36	1 hour oral exam

***Note:** in metalliferous mines of 5-19 people and in all quarries, it is assumed that the Site Senior Executive and mine supervisor/manager roles are carried out by the same person. That is, the numbers presented for number of new positions for these roles are not additional to each other.

Costs

The proposal to increase the number of statutory position holders has implications for the cost of Option 1, as this means that certificates of competency will be required. Costs of achieving this harmonisation will fall on the mining industry more broadly. As noted above, it is not assumed that the new roles will be filled by dedicated new full time staff, but rather that existing staff will have responsibilities that require certification. The cost of this certification is discussed here.

Certification cost increase

The number of positions requiring certificates is outlined in Table 1. It is assumed the cost of meeting the statutory positions will not start for two years, and then will be spread over five years due to transition arrangements. When calculating the overall cost for the 10 year period, there is allowance made for 10 per cent turnover p.a. after this initial period (i.e. for the last two years).

There is a cost associated with the new position holders gaining their certification, made up of the time required for study and then actually sitting the exam.

For the coal mines and metalliferous mines, there is a requirement to do Board of Examiners managed written and oral exams for most non-SSE new positions (see Table 3). Sitting the written test is assumed to take three hours, and the oral test two and a half hours. Travel time to each test is assumed to take two hours as well. Workers spend approximately one week in exam preparation for each exam. The total time taken for the exams is 45 hours for written Board of Examiners exams, and 44.5 for oral Board of Examiners exams. In total, the time taken for the positions that require both a written and oral exam is 89.5 hours.

For SSEs in large metalliferous mines (20+ employees) a Board of Examiners written exam is required, and thus takes 43 hours for each new applicant (as above for non-SSE roles).

For the exams that go through the Board of Examiners process, an allowance is made for those who have to re-sit the exam due to failing it the first time through. Based on the last three years of examination results, most applicants pass their written exams for the non-SSE exams. However, for the oral exams there is an average 39 per cent failure rate on the non-SSE oral exams. There is a 52 per cent failure rate on the SSE exams. It is assumed these applicants re-sit the exam once.

In metalliferous mines of 5-19 people and in all quarries, it is assumed that the SSE and mine supervisor/manager roles are carried out by the same person. This is incorporated into the analysis by assuming all new applicants do the Board of Examiners exam process (as this is a more conservative assumption). However, the roles are only counted once – i.e. the estimates of new SSEs and managers are not additional to each other.

Testing for the SSE positions in smaller (5-19 employee) metalliferous mines, and for the new statutory positions of mechanical supervisor, electrical supervisor and ventilation officers in metalliferous mines and quarries is likely to be less comprehensive than the Board of Examiners process. Although details have not been finalised, for this analysis it is assumed there will be a one hour oral exam on basic concepts and major hazards, with no travel required as inspectors carry out the exam on routine visits. Preparation times are assumed to be three days plus the one hour for the exam, for a total of 25 hours.

Radiation safety officers in surface metalliferous mines will likely be required to attend a radiation course that takes five days, and costs $4000 in fees.

Shotfirers in underground metalliferous mines will be required to have a shotfirer's license. This will bring Queensland into line with all other Australian states. Applicants for the license need to have completed four units of competency, which take five days to be completed. A police check is required, which costs $65, and a medical check, which costs approximately $120. (A shotfirer's license costs $50 but as this represents a transfer payment to DNRM, it has not been included in overall costs in this analysis.)

For quarries, the new position requirements for managers will be formal certifications from the IQA. Quarries with over 20 people will need a certified practicing quarry manager certificate. This requires five years of work experience, qualifications at a diploma level and annual ongoing professional development of 30 hours.[16] Large quarries with over 20 employees (around 75 per cent of all quarries) are likely to have staff with this certification already, and the remaining ones should be able to get recognition for prior learning based either on the units they have completed already or due to their years of experience under the IQA's 'grandfather clause' (IQA Board of Certified Practitioners – Rules and Charter (2012), clause 12). This means there will be no new costs for the statutory positions for quarries with over 20 people.

Managers and SSEs at quarries with 5-19 employees will need a position holder who has a certified practicing supervisor certificate from the IQA. This requires 3 years of work experience, qualifications at a certificate four level and annual ongoing professional development of 30 hours. This certificate takes 540 hours to achieve. It is assumed that half of the quarries will have position holders who already hold this certification. For the

[16] http://www.quarry.com.au/Education/QuarryManagementCertificationSystem(QMCS).aspx

remaining staff, it is assumed they will have already completed seven of the 13 required units. It is assumed that half the remaining staff will apply for transitioning of the certificate. The other half will undertake six units which will take 249 hours of study. In summary, a quarter of the new positions for mines with 5-19 employees are assumed to need to get six units of training to complete their certification requirements.

Professional development requirements for the quarry certificates are assumed to be met by time on the job that would have been expended even without the new position requirements. Similarly, as the certificates are phased in over five years it is assumed work experience requirements will already be met.

In total certification costs applicants approximately an average of $3.8 million per year for the five years the positions are introduced, or $2.5 million per year on average over the 10 years. The Equivalent Annual Value is $2.6 million.

Half of this cost is borne by the underground metalliferous industry, due to its high numbers of roles needing training. Underground coal represents another 16 per cent, quarries 12 per cent, surface metalliferous 11 per cent and surface coal nine per cent.

In addition to these direct costs, there may be increased competition for scarce staff if it is necessary to have more people with certification. This could lead to an increase in recruiting costs (e.g. more effort needed to find people such as more ads) or increased salary costs or delays to projects if staff cannot be found. However, transitional arrangements will be negotiated with industry to minimise the impacts, and as such these costs are expected to be minimal and are not quantified.

Table 2 Summary of assumptions for statutory positions – Board of Examiners exams

Variable	Assumption/calculation
Number of statutory position holders	As per Table 1
Preparation time for written and oral test	1 week per applicant for each type of exam (2 weeks if doing both written and oral)
Travel time to tests	2 hours
Test time	3 hours written, 2.5 hours oral
Total time	45 hours for written Board of Examiners exams, and 44.5 for oral Board of Examiners exams
Percentage re-sitting oral exam	39% for non-SSE exams, 52% for the SSE exams

Table 3 Summary of assumptions for statutory positions – non-Board of Examiners exams

Variable	Assumption/calculation
Number of statutory position holders	As per Table 1
Mechanical, ventilation and electrical	3 days

test preparation	
SSE exam preparation	3 days
Test time	1 hour
Total test time	25 hours

Table 4 Summary of assumptions for statutory positions - quarries

Variable	Assumption/calculation
Certified practising supervisor certification – number needing training	No additional cost for mines with 20+ employees; quarter of positions for mines with 5-19 employees outlined in Table 1 will need to complete more study
Time for remaining study	249 hours
Professional development requirements	Met on-site for no additional cost

Table 5 - Summary of assumptions for statutory positions - shotfirers

Variable	Assumption/calculation
Training required	Four units of competency/5 days
Police check	$65
Medical check	$120

Table 6 - Summary of assumptions for statutory positions - radiation safety officers

Variable	Assumption/calculation
Cost of radiation safety course	$4000
Duration of course	5 days

Workload increase for DNRM and the Board of Examiners

Associated with the existing critical safety roles becoming statutory positions for coal mines and large metalliferous mines (more than 20 employees) is an increase in the workload for the Board of Examiners. This Board is currently made up of eight members consisting of three inspectors and five industry and union representatives. The inspectors write the exam. All members of the Board are responsible for marking written exams.

The oral panels are made up of one inspector (chair of the panel) and two industry representatives although sometimes there will be two inspectors and one industry representative on the panel if only one industry representative is available.

Inspectors are responsible for developing and testing exam papers. At present, this takes one month of work for an inspector for the written exams. Assuming a 38 hour work week, and the average number of certificates issued in the last three years (65 certificates), this is approximately 2.4 hours of work per certificate issued.

Marking written exams takes 1.5 hours per exam for any member of the Board.

For the full Board of Examiners oral exam, inspectors spend approximately one month to prepare, assess and mark exams for 10 applicants. This is 15.2 hours per applicant.

The cost for the industry representatives consists of the time they spend marking written exams (1.5 hours per exam) and assessing oral exams (2.5 hours per exam+one hour discussing candidate).

The number of applicants needing to re-sit their exams is based on the outcomes of Board of Examiners exams for the last three years. It is assumed everyone passes their written non-SSE exam, but that 39 per cent of SSE oral exams need to be re-done, and 52% of the SSE exams that go through the Board of Examiners.

These are conservative estimates as they do not incorporate any travel time for panel members.

In addition to this estimate of the cost of the time involved, it should be borne in mind that greater effort will have to be made to find people who have the time and are willing to sit on the oral examination panel. The Board is already struggling to find enough volunteers to sit on the panels and mark exams in a timely manner. The administration of the process will need to take action to negate possible delays to the process of certification.

Room cost hire may increase as the capacity of regional rooms that are currently provided for free is strained. However, this cost is likely to be relatively small and is not assessed here.

For the exams for smaller mines (5-19 employees – see Table 1 for details on roles), the cost to the Inspectorate is much lower as these exams are carried out as part of routine visits, and little preparation is involved. It is assumed that preparation, supervising and marking of the one hour oral and written exams is two hours per exam.

The mine safety secretariat itself will face some increased costs of processing the new statutory certificates. Here it is assumed that it takes two hours per certificate.

Processing a shotfirers license takes a number of Departmental officers approximately four hours per license. This costs $240.

The total cost to the industry and DNRM of preparing and marking all of these types of exams is approximately $447 000 per year for the five years of introduction.

The cost of teaching the certification required by quarry SSEs and managers is unknown. However, a rough indication is given here by assuming a TAFE teacher spends one hour per student per week for 14 weeks (roughly a six month term) for the few students requiring new training. Average salary is represented by the average wage for adult education workers (ABS 2010).

The cost to the IQA of providing certification is represented by the fees they charge. This is $200 per new certification. There will also be ongoing fees of $50 per year for all

applicants (including those who have grandfathered their applications). This is approximately 97 people over the five year transition period.

Table 7 Summary of assumptions for Board of Examiners workload coal mine and large metalliferous mine exams

Variable	Assumption/calculation
Number of certificates issued	As per Table 1
Number of Board members – written exam	3 inspectors + 5 industry/union
Number of Panel members – oral exam	1 inspector + 2 industry/union
Cost to Inspectorate – preparing written exam	2.5 hours per exam (1 month per written exam prepared, assuming only one per year here)
Cost to Inspectorate marking written exam	1.5 hours per exam (1 examiner per exam)
Cost to Inspectorate – oral exam	15.2 hours per exam
Cost to industry – written exam	1.5 hours per exam
Cost to industry – oral exam	3.5 hours per exam

Table 8 Summary of assumptions – other exams

Variable	Assumption/calculation
Number of certificates issued	As per Tables 1 and 4
Marking time for one hour oral exams	2 hours
Marking time for one hour written exam	2 hours
Secretariat time to issue a certificate	2 hours
Cost to process shot firer license	$240 per license
Teacher time (for certification for quarries)	1 hour per student per week over the course of 14 weeks
Number of people needing to pay for certification	Approximately 97 over five year transition period, but cumulative from year to year
Fee for IQA to process certification for quarries	$200 first year, $50/year each year after that

The workload of the Secretariat, the Board members and the oral panels will undoubtedly increase. It will be necessary to consider the adoption of innovative examination and

testing technology which is in use in many Australian universities and training organisations. Alternatively internal reallocation of resources may be required to ensure that the priority of examination and certification applicants. Ultimately, savings will be generated by the automatic recognition of certificates awarded in New South Wales and Western Australia.

Consideration will also be given to abolition of fees associated with certification applications. Most fees are paid by companies already paying the levy and not by the individual applicant.

Fees that help support the Secretariat are not considered in this analysis, as they represent a transfer of funds from one party to another, and thus do not change the overall outcome of the analysis.

2.5 Changed stonedusting requirements (underground coal mines only) - costs

A major hazard in underground coal mines is an explosion. There are two main methods proposed for reducing the risk of explosions in coal mines – applying additional stonedusting, and installing stonedust explosion barriers. Of the 13 coal mines in Queensland, one is already addressing stonedusting through installation of distributed barriers.

Underground coal mines currently are required to reduce the risk of explosions or ignitions through applying stonedust to roadways. Under the NMSF proposals, each 30 metres length of a roadway being driven will need to be stone dusted rather than the current 50 metres. This will mean approximately three extra sets of stonedusting each week. Assuming there are three development panels, this is an additional 468 sets of stonedusting per mine per year. Set-up time is 15 minutes, and takes one person. Six people are required in the actual dusting, which takes five minutes. Using the average cost of labour, this is a cost of approximately $44 000 per year per mine. The additional costs are approximately $526 000 per year.

Installing stonedust barriers helps contain any explosion that occurs in an underground coal mine. There are four different options being proposed for stonedust barriers (see RIS and appendices for more details). For the purposes of this assessment, the cost of a distributed barrier is used as an indicator of the types of costs that might be incurred.

Additional stonedust barriers are assumed to cost $2 920 per 100 metre based on the cost for buying and installing a distributed barrier along the length of a roadway. It is assumed 6500 metres of development occurs in each mine in a year. This results in a total cost of $2.3 million per year.

Table 9 Summary of assumptions – stonedusting more frequently

Variable	Assumption/calculation
Additional stonedusting	3 extra times a week on 3 areas of the mine
Additional time for new stonedusting requirements	1 person to set up in 15 minutes, 6 people to dust in 5 minutes
TOTAL additional costs	$526 000/year

Table 10 - Summary of assumptions – explosion barriers

Variable	Assumption/calculation
Distributed barrier cost	$1900 per 100m for the barriers + $1020 for installation. Total $2920 per 100 metres, or $29.2/metre
Development each year	6500 metres
TOTAL additional costs	$2.3 million/year

2.6 Transitional costs for Option 1

The final quantified cost for Option 1 is the cost of re-training Inspectorate staff and safety officials in the mines for the new legislation. This is assumed to take two hours for Inspectorate staff. The current statutory position holders (one per metalliferous mine and four per coal mine) are assumed to need two hours to learn about the new legislation under this option. In total this costs approximately $118 000.

Table 11 - transitional costs for Option 1

Variable	Assumption/calculation
Training of Inspectorate (including time to train industry)	2 hours for all staff (approx 50)
Training time for mining safety officials	2 hours for all current (not new) statutory position holders (approx 477 people – four per coal mine and one per other mine)
Total annual transitional cost	$118 000

3.0 Option 3 costs and benefits

3.1 Overview

Option 3 is to develop new mine safety legislation primarily based on the Model Act, and NMSF provisions that increase safety and health and consistency. This would involve moving from Queensland's current two mine safety Acts to one based on the Model Act, which would involve significant changes.

The costs and benefits that were quantified in Option 1 (statutory positions and stonedusting) apply to Option 3 as well. Additional costs and benefits are detailed below. Consistent with the illustrative example of quantified safety benefits included for Option 1, the benefits for Option 3 (less reduction in injuries that do not apply to Option 3) are $46.9 million (present value) or $6.7 million in equivalent annual value. If used with the costs presented, the net present value would be -$148.6 million, or -$21.2 million in equivalent annual value. This clearly indicates that Option 3 is unlikely to be beneficial.

3.2 Benefits

The level of improvement in safety benefits predicted in the Safe Work Australia national RIS (2012) for Model core mining Regulations is unlikely in Queensland as Queensland already mostly has comparable provisions to those in the core mining Regulations. Any improvements from the core process can also be adapted to the framework of Option 1 and not only the Option 3 framework.

If the Mining Acts are combined and changed to be primarily based on the Model Act, it is likely that safety will be impeded by factors including:

- less clear and precise legislation and regulation and an increase in the number of provisions to be interpreted.
- replacement of a clear mining specific risk management approach with a general workplace Model Act
- replacement of inspectors' proactive directives with infringement and prohibition notices
- inspectors will not be able to exercise powers remotely
- potential damage to Queensland's current 'safety capital'. Safety capital is the 'bundle of systems, processes, controls, training, behaviours and attitudes which derive from the safety culture in an organisation' (Tooma 2011). As the current safety system was developed following coal mining disasters in Queensland by inspectors, industry and unions, a piece of legislation developed at a national level generically for all general workplaces is less likely to have support. Some opportunities for improvement are currently being addressed by Workplace Health and Safety Queensland based on consultation in 2012 with industry and union stakeholders.
- inspectors will not be specialists
- contractor management will be less easily clarified under this option.

For this reason the safety benefits (reduction in injuries) quantified in Section 2.2 do not apply for Option 3. However, the other benefits in Section 2.3 in relation to mine plans carry across.

3.3 Costs

As discussed in Section 3.2, there may be a fall in safety standards if Option 3 is introduced. This will have a cost for the mining businesses, miners and their communities. This cost has not been quantified as there is no available modelling to indicate what the safety impact could be. However, the Queensland Government has indicated that a reform that could lead to poorer safety and health outcomes will not be acceptable.

An additional cost to Option 3 that has been quantified is the cost of re-training Inspectorate staff and safety officials in the mines for the new legislation. This is assumed to take three weeks for Inspectorate staff, which includes time to communicate the changes to industry. This is based on the 12 days required to re-train DNRM of Justice and Attorney General Workplace Health and Safety Queensland staff in 2011 when the new Work Health and Safety laws were introduced. The current statutory position holders (one per metalliferous mine and four per coal mine) are assumed to need one week to learn about the new legislation under this option. All mine workers are assumed to need three days to learn the new legislation. This is based on current employee numbers of 57 313 workers, with the assumption new workers in the future don't face additional learning costs to what they would already have had to learn. This leads to a significant cost of $15.4 million in transition costs.

Table 12 - transitional costs for Option 3

Variable	Assumption/calculation
Training of Inspectorate (including time to train industry)	3 weeks each
Training time for mining safety officials	1 week each
Learning time current employees	3 days
Total annual transitional cost	$15.4 million

To date, Queensland's stakeholders have consistently indicated a strong preference to keep separate mining safety Acts for the coal and metalliferous sectors.

The costs associated with stonedusting and additional statutory positions also apply under Option 3 as well as Option 1.

4.1 Overall cost

The Present Value (PV) of costs is presented in Table 10. These represent the future value of costs over the 10 year policy period in today's value. The total cost of Option 1 is $39.6 million, and the total cost of Option Three is a significantly higher $195.3 million.

Table 13 – Present value of costs

	Option 1	Option 3
Present value of costs	$39.5 million	$195.4 million
Equivalent annual value	$5,621,747	$27,813,755

Discount rate seven per cent over 10 years

Another way of looking at this information is to present it as an annual figure. The Equivalent Annual Value[17] is approximately $5.6 million per year for Option 1 and $27.8 million per year for Option 3. Although this is a societal cost, it is likely to be borne in the most part by the mining industry.

Stonedusting requirements represent $3 million per year (equivalent annual value), and the cost associated with the new statutory positions is $2.6 million (equivalent annual value).

As discussed in Section 2.3, removing the requirements for coal mines to not submit annual plans will save approximately $338 000 per year. Due to the decision not to present a net present value calculation in the absence of credible data, these benefits have not been taken off the overall costs, but are rather included here as an indicative benefit.

4.2 Distributional impacts

A detailed distributional analysis was not undertaken for this report as there was not expected to be a wide distribution of costs and benefits between different sectors. For this reason transfer values (which are payments that essentially shift the same resources from one sector to another) such as royalties have not been included.

In general the costs will be borne by the mining sector. This is not only due to the direct costs of the policy options (such as changes to stonedusting) but because there is an industry levy that funds the mines safety inspectorate. As a result, there are limited costs to government or the wider community from either policy option.

The benefits of the policy options are likely to be felt by mining companies (for example through reduced risk to production) and mining employees and contractors. A recent report estimated that workers and their families bear almost three-quarters of the cost of injuries (PC 2012). Mining communities will also benefit from the reduction in injuries and risk of mining disaster.

4.3 Present Value of costs by mine type

This section presents the results of the analysis for each type of mine – underground coal, surface coal, underground metalliferous, surface metalliferous, and quarries. The figures are adjusted by employee numbers, types of exams undertaken and the number of new positions.

[17] This is calculated by dividing the NPV by an annuity factor, $\frac{(1+r)^n - 1}{(1+r)^n * r}$, which is 7.024

4.3.1 Underground coal

Underground coal is a key sector for mine safety due to explosion risk. This analysis includes costs for increased stonedusting and explosion barriers. For this reason, the costs are the highest amongst the different mine types. The estimated equivalent value is $3.2 million per year for Option 1, and $6.2 million for Option 3.

However, the benefits from disaster risk reduction also accrue to this sector.

Table 14 - Costs - underground coal

	Option 1	Option 3
Present value of costs	$22,702,057	$43,424,621
Equivalent annual value	$3,232,262	$6,182,689

Present value calculated over 10 years at seven per cent discount rate

4.3.2 Surface coal

Surface coal faces the lowest costs from Option 1 at $274,000 year (equivalent annual value). Due to high employee numbers in the sector, Option 3 involves high transition costs and is expected to cost around $13.0 million per year.

Table 15 - Net present value surface coal

	Option 1	Option 3
Present value of costs	$1,923,912	$91,651,175
Equivalent annual value	$273,922	$13,049,065

Present value calculated over 10 years at seven per cent discount rate

As discussed in Section 2.3, surface coal also faces potential savings of $324,714 ($347,444 equivalent annual value) per year due to not having to submit site plans to DNRM. Even without quantifying safety benefits, this means that the benefits of Option 1 are likely to outweigh the costs.

4.3.3 Underground metalliferous

The costs of Option 1 attributed to underground metalliferous mines is $1.5 million per year (equivalent annual value) and Option 3 $3.7 million per year.

Table 16 - Net present value underground metalliferous

	Option 1	Option 3
Present value of costs	$10,487,669	$25,846,106
Equivalent annual value	$1,493,208	$3,679,904

Present value calculated over 10 years at seven per cent discount rate

4.3.4 Surface metalliferous

Surface metalliferous mines face relatively minor costs from Option 1 of approximately $298,000 per year (equivalent annual value). Option three is expected to cost $3.5 million per year.

Table 17 - Net present value surface metalliferous

	Option 1	Option 3
Present value of costs	$2,094,655	$24,334,939
Equivalent annual value	$298,232	$3,464,748

Present value calculated over 10 years at seven per cent discount rate

4.3.5 Quarries

Quarries face relatively minor costs from Option 1 of approximately $342 000 for Option 1, and $1 million for Option 3.

Table 18 - Net present value quarries

	Option 1	Option 3
Present value of costs	$2,404,899	$7,086,190
Equivalent annual value	$342,403	$1,008,914

Present value calculated over 10 years at 7% discount rate

5.0 References

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Appendix J – Justification in relation to fundamental legislative principles

Accommodating Fundamental Legislative Principles and Queensland drafting practice

The RIS sometimes refers to adoption of provisions from the Model Act, however it should be noted that a number of variations were made when this Act was adopted in Queensland for general workplace health and safety matters as the *Workplace Health and Safety Act 2011* to accommodate fundamental legislative principles and Queensland drafting practice. Generally, similar variations are expected to be adopted where appropriate for proposed amendments based on the Model Act.

Clear and precise legislation

Ensuring clear, precise and unambiguous legislation is a Queensland fundamental legislative principle (FLP). Section 4(k) of the Queensland *Legislative Standards Act 1992* requires that legislation 'is unambiguous and drafted in a sufficiently clear and precise way'.

Option 1 is more consistent with this FLP than Option 3. The current legislative framework proposed to be mostly retained under Option 1 is comparatively clear and precise being mining industry sector specific for both coal and metalliferous. It clearly and precisely focuses on mining industry risks and hazards and obligations of particular obligation holders within the Acts as well as the Queensland Regulations.

Option 3 would initially require an overall generic umbrella approach with mines cast the same way as any other workplace, be that a commercial office, a retail outlet or a construction site. This level of general abstraction is less precise and less clear and would have added to the total number of provisions requiring interpretation. The general abstraction would then have to be interpreted against mining specific legislative and regulatory provisions.

Overall, trying to understand and interpret safety and health at a mine through the generalisation required for a general workplace or overarching Model Act is less precise and would be less consistent with the fundamental legislative principle requiring clear and precise legislation.

Whether the legislation has sufficient regard to the rights and liberties of individuals—LSA, s 4(2)(a)

In general, the proposed amendments balance individual rights and liberties against the rights and liberties of persons (particularly workers) who may be directly affected by deficiencies in safety and health standards.

The proposed higher maximum financial penalties for breaches under the CMSHA and MQSHA compared to current penalties are a FLP issue but these higher penalties are already in the Queensland *Work Health and Safety Act 2011* for general workplaces and in other Australian jurisdictions including New South Wales, Tasmania and South Australia that have implemented these higher financial penalties.

Mines and in particular underground coal mines are particularly hazardous working environments and it would not be even handed or just, if health and safety at mines is not also bolstered with the same potential maximum financial penalties for breach, as for general workplaces.

The high penalties in the Queensland *Work Health and Safety Act 2011* were justified in the explanatory notes on the following grounds and the same or similar arguments apply to the CMSHA and MQSHA:

> *'The increased maximum penalties reflect a combination of factors, including recommendations from the national review of WHS legislation throughout Australia to strengthen the deterrent effect of the penalties, to extend the ability of the courts to impose more meaningful penalties where appropriate and to emphasise to the community the seriousness of the offences under this legislation. There has also been a need to take account of inflation over the last 15 years since the WHS Act was introduced in Queensland. The quantum of the penalties supports the policy objective of the COAG endorsed national harmonised work health and safety framework, which is to promote national uniformity in the application of work health and safety laws and ensure that they are observed.*
> *As is the case with road safety provisions and traffic offences under the Transport Operations (Road Use Management) Act 1995 (the Transport Operations Act), the penalties are proportionate and relevant to the seriousness of the conduct, as there is a risk to personal safety and potential loss of life arising from any breaches…*
> *Importantly, the penalties in the WHS Bill 2011 are a maximum only and the courts will retain their discretion to impose lesser penalties depending on the circumstances of the breach and mitigating factors.'*

Whether the legislation reverses the onus of proof in criminal proceedings without adequate justification—LSA, s 4(2)(d)

Background

A fundamental legislative principle is whether legislation reverses the onus of proof by placing the initial onus on the defence rather than the prosecution in relation to elements of an offence or elements of a defence or both, without adequate justification.

Queensland's CMSHA and MQSHA reverse the evidential onus of proof of a defence, as it applies to executive officers requiring executive officers to provide evidence of their defence after the prosecution has proven the elements of an offence by the corporation.

Currently, if a corporation is convicted of an offence, guilt is also imputed to an executive officer for failing to ensure the corporation has complied with the Act, unless the executive officer can discharge either or both defences (that is the defences that the officer exercised reasonable diligence to ensure the corporation complied or the officer was not in a position to influence the conduct of the corporation).

In Queensland under the mining safety and health jurisdiction, it has been used infrequently as the method to lift the corporate veil and sheet home responsibility, as depending on the particular breach by the corporation, other duty holders located at a mine may be more clearly responsible as well as the corporation, for breaches by the corporation.

There have not been any criticisms of how this potential liability of executive directors has been applied by the Queensland Mines Inspectorate through prosecutions over the last 12 years since the Acts commenced.

Prior to the COAG reform in relation to liability of executive officers, about 80 per cent of the Queensland statute book has used derivative executive officer liability provisions. However, changes are on foot through the Directors' Liability Reform Amendment Bill 2012, to develop greater national consistency about personal liability for directors and other corporate officers as a consequence of a corporate offence.

The possible future proposed approaches to executive officer liability do not reverse the onus of proof and are discussed in **Appendix E**. It is noted in **Appendix E** that the preferred option for mining safety and health is the *Work Health and Safety Act 2011* (Qld) or Model Act approach to the stated duties of officers which does not have a reverse onus of proof.

In the explanatory notes to the Queensland *Work Health and Safety Act 2011,* it was noted that in a number of the provisions across this Act, an evidential burden is placed on the accused to show a reasonable excuse. It was noted that an evidential burden requires a person to provide evidence of an asserted fact to prove that fact to a court.

The protection from reprisal provisions from the Model Act are in a sense an example as they contain limited reverse onuses of proof and have been implemented in the Queensland *Work Health and Safety Act 2011.* These provisions enable a person in civil proceedings to challenge detrimental action taken against them on the basis a prohibited reason was a substantial reason. The employer then has to prove on the balance of probabilities that there were other legitimate reasons that were the substantial reason. The regulator can also prosecute where it can be proven that discriminatory conduct was engaged in with respect to a prohibited reason. It is then up to the defendant to show, for example, through the defendant's human resource systems, on the balance of probabilities that the prohibited reason was not the dominant reason for the conduct that resulted in a detriment.

The explanatory notes to the Queensland *Work Health and Safety Act 2011* indicate that the reversal of the onus of proof can be justified where the accused is in a position to know whether or not they have a reasonable excuse. In situations such as these, without the reversal of the onus of proof, it would be difficult for the prosecution to prove the offence and the legislation could not otherwise be practically administered. The legal burden remains with the prosecutor.

In the case of reprisals, it would be the defendant knowing of other legitimate reasons other than the prohibited reason, rather than a reasonable excuse.

It is also noted that the CMSHA and MQSHA override the excuses in s.23 and s.24 of the Criminal Code. Section 23 of the Criminal Code provides that a person is not criminally responsible for an act which occurs independently of the person's will for an event which is unforseen. Section 24 of the Criminal Code provides an excuse where a person holds an honest and reasonable, but mistaken belief about a factual situation.

The provisions in the Queensland *Work Health and Safety Act 2011* limit the application of a similar provision to category 2 and 3 offences (i.e. s. 23 and s.24 apply for category 1 offences which are a crime).

Similar provisions would need to be adopted in the proposed amendments. It is noted that the exclusion of these Criminal Code excuses raises a fundamental legislative

principle about the removal of usual excuses to liability. If this is limited to category 2 and 3 offences as it has been in the Queensland *Work Health and Safety Act 2011,* the proposed approach will be consistent with the approach taken for general workplaces. The other limited defences under the CMSHA and MQSHA will continue to apply.

Institution of proceedings for offences

Extending the potential period of time for the institution of proceedings under the CMSHA and the MQSHA is proposed, to be more consistent with the Model Act which provides for longer limitation periods in certain circumstances.

Amendments would enable proceedings for an offence against the CMSHA or MQSHA to be taken within the latest of the periods including — within 2 years after the offence first comes to the knowledge of the regulator (rather than the current 6 months which must also be within 3 years after the commission of the offence).

Also to be consistent with the Model Act provisions for offences, the circumstances for an extended limitation period for category 1 offences would also be adopted as well as the Model Act criterion in relation to offences of 'if it appeared from the coronial report or the proceedings of an inquiry or inquest that an offence had been committed against the Act' rather than the current narrower criteria in the CMSHA and MQSHA relating only to coronial investigations.

However, extending or broadening some of the limitation periods has the potential to affect the rights and liberties of individuals.

The proposed changes have been implemented in Queensland for general workplace safety and health offences and the following were some of the reasons that justified the extension of the limitation periods under the general jurisdiction.

The two year limitation period provides an end date at a reasonable point given the potential seriousness of the conduct and consistent with fundamental legislative principles. For instance, a Category 1 offence is a criminal offence. Prosecutions for a Category 1 offence must be brought within two years of the alleged offence coming to the notice of the regulator; however this period of time may be extended if fresh evidence is obtained.

The limitation period in the Model Act is sufficiently long to allow the regulator to consider an alleged breach and furthers the public interest by providing a consequence for legally wrong conduct harmful to personal safety, while still protecting individuals from the threat of endless prosecution.

An important factor in time limitations for actions following work-related injuries is the need for there to be sufficient time to gather evidence relating to varying and complex systems of work.

This is particularly the case in relation to mining related injuries and the implementation of a mine's safety and health management system.

Immunity related to release of information regarding incidents by regulators

The CMSHA and MQSHA already have provisions about the making of public statements by the Minister, Chief Executive, Commissioner or Chief Inspector about a range of

matters. It is proposed to add to the range of matters and based on non-core State consultation processes with industry, the other large mining States of New South Wales and Western Australia have also proposed to do likewise.

The CMSHA and MQSHA already include a miscellaneous provision providing protection from liability for an official for any acts done honestly and without negligence under the Acts. This is in accordance with the general Queensland standard to confer immunity only where the person acts without negligence and any civil liability instead attaches to the State.

This goes against the general principle that all persons are equal before the law and that immunity should not be conferred. However, in these cases there is justification for immunity, as it is necessary for the administration of the Acts, including the release of information about incidents in order for officials to be able to carry out their statutory safety and health functions and not be reluctant to act through concerns about potential personal legal liability.

Based on consultation with New South Wales and Western Australia it is also proposed to refer to good faith and to specify that to remove all doubt safety alerts can not be used in any proceedings against the Minister, Chief Executive, Commissioner or Chief Inspector.

Delegation of legislative power

Under s. 4(4)(a) of the *Legislative Standards Act 1992* whether legislation has sufficient regard to the institution of Parliament depends on whether a bill allows the delegation of legislative power only in appropriate cases to appropriate persons.

It is proposed to follow the Model Act approach and provide for the Minister to approve a code of practice and provide notice of it in the gazette. Codes of practice will replace recognised standards under the CMSHA and guidelines under the MQSHA which are also made by the Minister with notice by gazette.

In a similar way to recognised standards and guidelines, Codes of practice are intended to provide practical advice about achieving standards required under the Act and Regulations. Compliance may be achieved by following the Code or following an equivalent or higher standard of health and safety. Tri-partite consultation will be required between government, industry and unions before Codes are approved, varied or revoked.

The Model Act requires a code of practice to be available for inspection but the Model Act does not address the provision of copies and the cost of providing copies nor require availability via a website. It is usual practice in Queensland to state in legislation that an instrument such as a code of practice must be publicly available via a website.

It is proposed to keep the current subsections in the CMSHA and MQSHA addressing the provision of copies rather than strictly follow the comparatively silent approach in the Model Act to availability of copies. It is also proposed to include the usual Queensland approach of confirming that copies will also be available on DNRM's website.

Safety Alert

Appendix K – Safety Alert 270, about managing contractors

Mines Inspectorate

Safety Alert No. 270
30 June 2011

Managing underground coal mine contractors — *alarm bells are ringing!*

Mine type: Underground coal mine | **Equipment:** None

Hazard: Contractors who are not competent and don't understand the underground environment or don't respect the robust safety disciplines necessary to maintain an acceptable level of risk
Incidents: The following recent incidents have raised serious concerns about how contractors are being managed in underground coal mines:

Violation of a mine's A9 keys allocation and security system: In 2010 a deputy found a contractor operating an LHD in the tailgate in a gassy environment, with the methane monitor bypassed using a duplicated and unauthorised A9 Deputy key. To make matters worse, the deputy did not report the matter to the underground mine manager.

Violation of a mine's A9 keys allocation and security system: Recently, underground contract fitters were found with duplicated and unauthorised A9 Deputy keys, allegedly provided by their supervisor, which enabled methane monitors to be bypassed.

Unauthorised restart of an auxiliary fan (see Safety Alert 268): Recently, a contract electrician, unaware he was contravening any statutory regulation or site rules, reset power to an auxiliary fan and then restarted it without being authorised by the ventilation officer, or consulting the ERZ Controller or others that may have been affected.

Non-compliant management structures: Some mines had mining contractors reporting directly to the site senior executive rather than through the underground mine manager, which effectively undermined the latter's legislative responsibility to 'control and manage the mine'.

Substandard incident investigation: A mine's investigation into a recent contractor incident found the contractor guilty of major organisational deficiencies and non-compliances, yet did not recognise its own failure to effectively manage contractors according to the mine's Safety and Health Management System (SHMS).

Causes:
- inadequate training
- inexperience
- poor management of contractors
- inadequate incident investigation
- non-compliance with legislation

Comments: As industry expands and strains the availability of experienced and qualified human resources, the use of inexperienced labour and of contractors is increasing. As a result, underground coal mining's corporate memory of its painful past, the evolution of robust mining legislation and the strict discipline of the underground miner are at risk of being diluted. ***Mining staff and management need to realise that the underground environment will not be kinder as mines become deeper.***

The first three incidents above are totally at odds with underground coal mining culture and seriously undermine confidence in the industry's ability to manage contractors effectively and maintain an acceptable level of risk. All these incidents prompt the following serious questions:

- How can a mineworker, electrician or mechanic be deployed underground without supervision and without understanding the basics of the underground environment, including the implications of starting an auxiliary fan and why it is subject to strict procedures?
- Why do we have contractors treating mining legislation and minesite discipline with such disrespect and contempt as to fabricate A9 keys to defeat a critical safety control?
- Why are some mines seeking to confine the underground mine manager to a 'safety compliance' role when legislation requires the underground mine manager to 'control and manage the mine'?
- How can a mine's investigation into a 'contractor incident' identify contractor deficiencies and not recognise its own serious shortcomings in managing the contractor?
- Should we re-examine the present 'one size fits all' system to make it harder for keys to fall into the wrong hands?

Recommendations:
That the underground mine manager be permitted to control and manage the mine.

That all mineworkers be adequately trained to understand and respect the underground environment and the safety disciplines that apply.

That it be recognised that the task of managing contractor personnel, including effectively integrating their activities into the mine's SHMS, is a significant challenge that requires adequate resourcing and close attention.

That contractors' activities be adequately inspected and audited.

That Deputy bypass keys be kept strictly for deputies and **not** be issued to anyone else, including electricians.

That consideration be given to a new security system for the allocation of A9 keys.

That the Chief Inspector of Coal Mines' directive of March 2007 — requiring that one of the senior positions in the management structure be responsible for the overall management of contractors operating at the mine — be complied with.

That electricians **not** be deployed to work underground without supervision, until they have the necessary competence and experience.

That contract deputies inspect and report on compliance with legislation and the mine's SHMS.

That mines comply with legislation.

Gavin Taylor
Chief Inspector of Coal Mines
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Please ensure all relevant people in your organisation receive a copy of this safety alert. Any such advice supplied to site should reach those who require it, and it should also be placed on the mine noticeboards. See more safety alerts and bulletins at http://mines.industry.qld.gov.au/mining/safety-alerts-bulletins.htm

Appendix L – Notification of high risk activities

Queensland will expect that mines will have completed comprehensive risk management planning and the Chief Inspector may in some circumstances request that notification occur. However, for the other non-core States, the following information is to be provided in all cases to the regulator:

- a statement containing particulars of the proposed activity
- the hazards identified as having the potential to arise from undertaking the activity
- an assessment of the risks arising from undertaking the activity
- the controls to be put in place to manage the risks that may arise from the undertaking of the activity, including reasons for their selection and rejection of others that may be used
- extracts of the relevant parts of the principal mining hazard management plans or principal control plans applicable to the undertaking of the activity
- further information pertaining to the activity as set out in the schedule.

Table 1 Proposed high risk activity notification schedule

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
All mines	Highwall mining that involves entry into a previously formed high wall when no people will be underground	1 month	An engineering drawing, endorsed by the underground mine manager detailing the activity A plan certified by a mine surveyor, of the activity
All mines	Highwall mining that involves entering a highwall mining excavation when people will be inside the highwall mining excavation	48 hours	Details of the competencies of the person appointed to control the highwall mining activity whilst any person is inside the highwall mining excavation Details of the competencies of the person(s) entering the highwall mining excavation Details of self rescue equipment to be carried by persons entering the highwall

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
			mining excavation
All mines	Shot firing underground when shot firing has not been undertaken within a year prior to the intended time of shot firing	1 day	• Details of the location of shot firing
All mines	Commissioning or use of mine shaft and winding operations plant	3 months	• Evidence of how hazard identification and risk assessment methods have been used in the design of the shaft or winder to minimise the risks to health and safety of persons • Details of any design or performance standards that have been relied on in the construction of the shaft or winder
All underground mines	Single entry development of a roadway or a drift for more than 200m without the formation of an intersection along it	1 month	• An engineering drawing, endorsed by the underground mine manager, of the activity
All underground	Working within an inrush control zone where the potential	1 month	• An engineering drawing, endorsed by the underground mine

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
mines	source of inrush cannot be inspected		manager, of the activity
All underground mines	Working within an inrush control zone where the potential source of inrush can be inspected	1 week	• An engineering drawing, endorsed by the underground mine manager, of the activity
All underground mines	Sinking a shaft or drift, raise boring or development of a new underground mine entry	3 months	• Method of working and details of plant and equipment to be used
Underground metalliferous mines only	Newly devised method of mining a rise involving drill and blast and entry to the rise	1 month	• Details of methods to be used and the type of equipment • Copy of a mine plan showing an alternative means of travel to and from the face during construction
All coal mines	The establishment or discontinuance of emplacement areas	3 months	• An overview of the lifecycle of the emplacement area including: timeframes, design, construction, reject materials, transport, treatment, inspections, decommissioning • details of ongoing monitoring of emplacement area(s)

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
			• Engineering plans, endorsed by the manager of mining engineering, of the activity, including all existing and proposed emplacement areas, geotechnical designs and any other relevant details • Survey plans endorsed by a mine surveyor of existing and proposed emplacement areas
Underground coal mines only	Sealing where notice has not been given as part of a notice for secondary extraction or in an emergency when an explosive atmosphere may result Note: In an emergency or change in sealing method, the mine operator must take reasonable steps to notify an inspector then confirm it in writing as soon as practicable	1 month	• Proposed location of the seals and areas in the mine to be sealed • Proposed sealing procedure • Any evidence of ignition sources being present in the area to be sealed • Predictions of the rates at which methane and other gases will accumulate in the sealed area • The gas monitoring procedures to be carried out during and after the sealing
Underground coal mines only	Injection or application of polymeric material for ventilation or	1 month Initial notification of	• Details of material to be used and purpose of use • Evidence of the

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
	strata	activity	suitability of the polymeric material for its intended use • Copy of the Material Safety Data Sheet or Safety Data Sheet for the material • Information on the process that will be used, including the equipment to be used in the process • A summary of risks identified and controls to be put in place
Underground coal mines only	Injection or application of polymeric material for ventilation or strata	24 hours	• Copy of the risk assessment
Underground coal mines only	Hot work in an explosion risk zone underground	1 month Initial submission of hot work management plan 24 hours Each hot work occasion thereafter	• Purpose of the hot work • Copy of the hot work management plan • A summary of risks identified and controls to be put in place
Underground coal mines	Driving an underground roadway with a	7 days	No additional

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
only	width greater than 5.5m		
Underground coal mines only	Widening an existing underground roadway	7 days	No additional
Underground coal mines only	Installation of a booster fan underground	3 months	No additional
Underground coal mines only	The introduction for the first time of a vehicle with a non-flameproof fire protected diesel engine to an underground part of a coal operation that is not an explosion risk zone	3 months	• Details of procedures to be followed in the case of failure of a control
Underground coal mines only	The use of voltages in excess of 4000V in an explosion risk zone 1 for electrical plant and cables associated with longwall mining	12 months	• For the plant and cables operating at voltages in excess of 4000V, a summary of risks identified and controls to be put in place
Underground coal mines	The use of voltages in excess of 1200V in a explosion risk	12 months	• No additional

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
only	zone 1 for electrical plant other than electrical plant and cables associated with longwall mining		
Underground Coal mines only	Secondary extraction of a pillar or a pillar dimension reduction where the following standards are deviated from: (a) the dimension of a pillar is less than: (i) a distance that is equal to 1/10 of the thickness of the cover (to the surface); or (ii) 10m whichever is greater (b) the width of the roadways, bords, cut-throughs, headings and pillar splits not 5.5m except for that part of a roadway forming an intersection with another roadway.	4 months	• Preparation of safety management plan, detailing the authoritative sources used in determining that the proposed method of work can be done safely • Engineering plans, endorsed by the underground mine manager, of the work covered by the notification, showing all relevant details • Dimensional plans showing the manner and sequence of extraction • Emergency response plans, showing details of procedures to be followed in the case of failure of a control • Procedures for the recovery of buried and immobile mining equipment, at the edge of or in a goaf
Underground coal mines	Secondary extraction of	4 months	• Preparation of safety management plan,

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
only	longwall, shortwall or miniwall		detailing the authoritative sources used in determining that the proposed method of work can be done safely • Engineering plans, endorsed by the underground mine manager, of the work covered by the notification, showing all relevant details • Dimensional plans showing the manner and sequence of extraction • Emergency response plans, showing details of procedures to be followed in the case of failure of a control • Procedures for the recovery of buried and immobile mining equipment, at the edge of or in a goaf
Underground coal mines only	Barrier mining when the width of the barrier is proposed to be less than 40m between adjoining workings of adjacent mines. (Definition: the mining of a barrier or protective pillar against the external boundaries of the mine, against any outcrop of the seam	3 months	• Details on identified interactions between adjoining operations and hazards • Survey plans certified by a mine surveyor

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
	and between any underground workings and any open cut workings)		
Underground coal mines only	• Multi-seam mining • Formations of small pillars • Shallow depth of cover • Mining under massive roof conditions • Mining under significant bodies of water	4 months	• An engineering drawing, endorsed by the underground mine manager, of the work covered by the notification • Survey plans certified by a mine surveyor
Underground coal mines only	Working within outburst control zones For the purpose of this item, an outburst control zone is any area where the total in situ gas content and gas composition, measured in accordance with AS3980 or an equivalent standard, is greater than $9m^3$/tonne for methane (CH_4) or $5m^3$/tonne for CO_2 or, for a mixture of	3 months	• An analysis of how the proposed method of mining minimises the risk of gas outbursts. • An engineering drawing, endorsed by the underground mine manager, of the activity • Survey plans certified by a mine surveyor of the activity. • The extract from the emergency response plan showing details relevant to outbursts

Applies to	Column 1 High risk activity	Column 2 Length of time between notification and when activity can be undertaken	Column 3 Information to be supplied to regulator
	these two gases, a gas content in the proportion of the percentages of each gas between these two limits		

Glossary

ABS	Australian Bureau of Statistics
ATSB	Australian Transport Safety Bureau
AWU	Australian Workers Union
CFMEU	Construction Forestry Mining Energy Union
CMSHA	*Coal Mining Safety and Health Act 1999*
COAG	Council of Australian Governments
Core Mines Regulations	Core Model Work Health and Safety (Mines) Regulations
DNRM	Department of Natural Resources and Mines
DWR	District Workers Representatives
IQA	Institute of Quarrying Australia
ISHR	Industry safety and health representatives
June 2012 Consultation Paper	June 2012 Consultation Paper *Nationally consistent mine safety legislation*
LTIFR	lost time injury frequency rate
Model Act	*Model Work Health and Safety Act 2009*
Model Regulation	Model Work Health and Safety Regulations 2011
MQSHA	*Mining and Quarrying Safety and Health Act 1999*
NMSF	National Mine Safety Framework
NMSF Steering Group	National Mine Safety Framework Steering Group
OHS	Occupational Health and Safety
PCBU	Persons conducting a business or undertaking
QMI	Queensland Mines Inspectorate
SOP	Standard Operating Procedure
SSE	Site Senior Executive
TCAC	Tri-State Competency Advisory Council
USA	United States of America

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