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MINING LEGISLATION -THE QUEENSLAND PERSPECTIVE

Andrew Clough

ABSTRACT: Following a series of coal mine disasters in the 80s and early 90s in Australia, a trend to move away from prescriptive to risk based legislative frameworks for mine safety gathered significant momentum. In one Australian jurisdiction, the state of Queensland, two mine safety Acts built on the risk based approach were introduced in 1999 - one for coal mines and one for metalliferous mines - which have led to arguably the best safety performance in a mining jurisdiction in the world. The approach relies on a single integrated safety management system for each mine, anticipation of hazards, control of risk and prevention of incidents. The legislation has high standards of duty and awareness requirements for everyone involved in the industry, and it demands extensive knowledge at the mine site about managing risk and the need for workforce involvement on mine sites. Formal risk management competencies are required by legislation for many of those holding management and other statutory positions in mines. This paper will cover how the risk based legal framework operates and the role and approach of the mines inspectorate in regulating mine safety under this type of framework.

HISTORICAL BACKGROUND

On the 7th August 1994 an explosion occurred at the Moura No 2 underground coal mine in central Queensland. Rescue attempts of the 11 trapped miners were abandoned after a second more violent explosion 18 hours later. The mine was sealed from the surface and the bodies of the 11 miners were never recovered. This was the third disaster that had occurred in the Moura district over the previous 20 years resulting in a total loss of 36 lives.

The Wardens inquiry into the Moura No 2 explosion was held in 1995 and a number of significant recommendations were made including a recommendation to revise the existing Coal Mining Act and regulations.

The Queensland Government committed to investigating each of the Wardens recommendations and a number of task groups were formed consisting of representatives from Government organisations, mine management, union bodies and the general workforce. The results of the task groups and subcommittee investigations have had impacts into the areas of legislative changes, operational changes and research activities.

A MOVE TOWARDS RISK BASED LEGISLATION

The Wardens inquiry saw no inherent objection to introducing self-regulation at mines. The Warden however commented that self-regulation must, however, be established within a framework of legislation that prescribes minimum requirements in respect to safety. It seems that high probability, low consequence matters might be suitably addressed by self-regulation but that low probability, high consequence matters should remain subject to prescriptive legislation.

The Coal Mining safety and Health Act (CMSHA) Qld Government 1999 and the Mining Quarrying Safety and Health Act (Qld Govt, 1999) were passed in 1999. The approach adopted in both Acts was one of self-regulation and advocacy of greater consultation between workers and employers. This was termed Robens style legislation in that the new legislation was structured around the findings of the UK 1972 Robens Report on Safety and Health at Work (Safety and Health at Work 1972a) CMSHA1999 and the Mining and Quarrying Safety and Health Act (Gld Govt, 1999) provide the framework for the legislative management of Safety. Both these Acts outline the goals or objectives of the legislation and provide the broad principals. The Acts are underpinned by specific Regulations, Codes of Practice, Recognised Standards and Guidance notes. Safety and Health Management Systems developed by the employer in consultation with the work force form the next tier of the scheme.

The Acts provide for placing safety and health obligations on those persons whose decisions affect the safety and health of others. The manner in which those obligations are discharged is through taking a systematic risk based approach to managing the hazards in the workplace. This necessitates consulting

with the workforce on safety and health matters and also providing ways to monitor the effectiveness of the systems.

This paper present further detail on the legal framework and policies that support the safe operation of the mines in Queensland. Specific reference will be made to the CMSHA) and the underpinning regulations and policies although the material presented here is applicable to both Acts.

THE OBJECTIVES OF THE ACT AND HOW IT INTENDS TO ACHIEVE THESE

The objectives of this Act are:

- (a) to protect the safety and health of persons at coal mines and persons who may be affected by coal mining operations;
- (b) to require that the risk of injury or illness to any person resulting from coal mining operations be at an acceptable level; and
- (c) to provide a way of monitoring the effectiveness and administration of provisions relating to safety and health under this Act and other mining legislation.

To ensure that risk is at an acceptable level, the legislation requires that management and operating systems must be put in place for each coal mine. The systems must incorporate risk management elements and practices appropriate for each coal mine to:

- Identify, analyse, and assess risk;
- Avoid or remove unacceptable risk;
- Monitor levels of risk and the adverse consequences of retained residual risk;
- Investigate and analyse the causes of serious accidents and high potential incidents with a view to preventing their recurrence;
- Review the effectiveness of risk control measures, and take appropriate corrective and preventive action; and
- Mitigate the potential adverse effects arising from residual risk.

This approach is in line with the Australian and New Zealand Standard *AS/NZS 4360:1999 Risk Management*.

CONSULTATION AND COOPERATION

The Act seeks to achieve cooperation between coal operators, mine management and coal workers to achieve the objects of the Act.

Cooperation is an important strategy in achieving the objects of the Act and is achieved at an industry level by:

- (i) the establishment of the coal mining safety and health advisory committee
- (ii) the appointment of industry safety and health representatives

Cooperation is achieved at a coal mine level by:

- (i) the election of site safety and health representatives; and
- (ii) the process of involving coal mine workers in the management of risk.

SAFETY AND HEALTH MANAGEMENT SYSTEMS

The CMSHA prescribes the requirements for the development of a safety and health management System. The CMSHR (Qld Govt, 2001) prescribe many of the components that must be included in the safety and health management system. The CMSHA has the force of legislation in that there is a requirement to comply with the procedures contained within.

It is the responsibility of the most senior officer employed by the operator who has responsibility for the mine Site Senior Executive (SSE) to develop the safety and health management system.

The safety and health management system must be:

- Be a documented and auditable system for implementing the organisations OHS policy
- Define the management structure necessary for safety and health
- Outline the processes and resources needed to manage the mine so that risk is at an *acceptable level*
- Deliver the strategy and plan to ensure that the mine is run safely
- Include principal hazard management plans and standard operating procedures;
- Contain a plan to regularly review and continually improve so that risk to persons at the coal mine is or *an acceptable level*; and
- When there is a significant change to the coal mining operations of the coal mine—contain a plan to immediately review the safety and health management system so that risk to persons is at an acceptable level.

The prescribed structure of the safety and health management plan must be consistent with the Australian and New Zealand Standard AS/NZS 4804:2001 Occupational health and safety management systems.

Principal hazard management plans are developed to manage hazards that could result in multiple fatalities. The regulations prescribe the minimum principal hazard management plans that must be developed for underground coal mines.

These are;

- emergency response;
- gas management;
- methane drainage;
- mine ventilation;
- spontaneous combustion;
- strata control; and
- inrush management

Each principal hazard management plan outlines the preventive controls required to lower the possibility of an incident occurring, the monitoring controls to ensure the preventive controls are effective, first response procedures to mitigate the effects of an incident if the preventive controls should fail and emergency procedures to recover from an incident.

SELF-ESCAPE AND MINES RESCUE

Self-escape in the event of an emergency is a first response component of principal hazard management plans and is also prescribed under regulation.

An underground mine's safety and health management system must provide for the self-escape of persons from the mine, or a part of the mine, to a place of safety.

The system must be developed through a risk assessment that includes a consideration of at least the following matters;

- the location of devices for assisting self-escape;
- the number of devices, including self-rescuers, to be distributed throughout the mine;
- selecting and marking the location for reserve self-rescuers;
- the number and location of changeover stations and refuges;
- selecting and marking escape routes;
- communication equipment and ways of using the equipment;
- training persons in self-escape; and
- fitness of coal mine workers to enable self-escape.

It is a legislative requirement that an underground mine also has emergency response strategies for mines rescue services.

Mines rescue strategies must include a mines rescue agreement with the Queensland Mines Rescue Service. It must also include a system of providing mutual assistance to adjacent mines and be capable of being implemented whenever a person is underground.

The final legislative requirement is that underground coal mines must be capable of being safely sealed in the event of an emergency and provide for means to inertise the underground atmosphere in the event of an underground fire or explosion.

The Queensland Mines Rescue Service provides a jet engine that can introduce exhaust gasses into the mine to inertise the atmosphere.

COMPETENT MANAGEMENT AND TRAINING

There are a number of measures in the Queensland legislation to ensure competent management.

A Board of Examiners is established under the Act to examine and issue statutory certificates to certain statutory position holders. A written examination in Mining Safety Law is required followed by an oral examination to determine required technical knowledge to safely perform the function.

There is also a requirement that all supervisors have training in risk management.

Training schemes must be established for the workforce. Each person who performs work at a coal mine must be trained and assessed against a national competency standard.

DISCHARGE OF OBLIGATIONS

The Act provides for placing safety and health obligations on those persons whose decisions affect the safety and health of others. All coal mine workers or other persons at coal mines or persons who may affect safety and health at coal mines or as a result of coal mining operations, have safety and health obligations.

The following class of persons also have obligations under the legislation:

- a holder of the mineral tenure;
- a coal mine operator;
- a site senior executive;
- a contractor;
- a designer, manufacturer, importer or supplier of plant for use at a coal mine;
- an erector or installer of plant at a coal mine;
- a manufacturer, importer or supplier of substances for use at a coal mine; and
- a person who supplies a service at a coal mine.

There are three ways in which a person may discharge their safety and health management obligations;

1. If a regulation prescribes a way of achieving an acceptable level of risk, a person may discharge the person's safety and health obligation in relation to the risk only by following the prescribed way.
2. If a recognised standard states a way or ways of achieving an acceptable level of risk, a person discharges the person's safety and health obligation in relation to the risk only by:
 - (a) adopting and following a stated way; or
 - (b) adopting and following another way that achieves a level of risk that is equal to or better than the acceptable level.

3. If there is no regulation or recognised standard prescribing or stating a way to discharge the person's safety and health obligation in relation to a risk, the person may choose an appropriate way to discharge the person's safety and health obligation in relation to the risk.

However, the person discharges the person's safety and health obligation in relation to the risk only if the person takes reasonable precautions, and exercises proper diligence, to ensure the obligation is discharged

A recognised standard is made by the Minister and states ways to achieve an acceptable level of risk to persons arising out of coal mining operations.

The requirement for a person to take reasonable precautions and exercise proper diligence is fundamental to the concept of self-regulation using risk management principles.

INDUSTRY SAFETY AND HEALTH REPRESENTATIVES AND SITE SAFETY AND HEALTH REPRESENTATIVES

There are a number ways in which worker representation on safety and health matters is facilitated through the legislation. At an industry level, the union representing the majority of coal mine workers may elect, after ballot of their members, up to three persons to be Industry Safety and Health Representatives.

An Industry Safety and Health Representative has the following functions;

- to inspect coal mines to assess whether the level of risk to the safety and health of coal mine workers is at an acceptable level;
- to review procedures in place at coal mines to control the risk to safety and health of coal mine workers so that it is at an acceptable level;
- to detect unsafe practices and conditions at coal mines and to take action to ensure the risk to the safety and health of coal mine workers is at an acceptable level;
- to participate in investigations into serious accidents and high potential incidents and other matters related to safety or health at coal mines;
- to investigate complaints from coal mine workers regarding safety or health at coal mines; and
- to help in relation to initiatives to improve safety or health at coal mines.

The Industry safety and Health representative has considerable powers under the Act including the ability to suspend operations if he believes that there is an unacceptable level of risk.

At a site level coal mine workers at a coal mine may elect up to two of their number to be Site Safety and Health Representatives for the mine for the term decided by the coal mine workers.

The Site Safety and Health Representative for a coal mine has the following functions—

- to inspect the coal mine to assess whether the level of risk to coal mine workers is at an acceptable level;
- to review procedures in place at the coal mine to control the risk to coal mine workers so that it is at an acceptable level;
- to detect unsafe practices and conditions at the coal mine and to take action to ensure the risk to coal mine workers is at an acceptable level; and
- to investigate complaints from coal mine workers at the mine regarding safety or health.

THE ROLE OF THE REGULATOR

The Chief Executive appoints officers to be Mines Inspectors. Inspector's functions include;

- Inspecting, auditing and monitoring coal mines
- Investigating accidents
- Provide help, advice and assistance
- Ensure corrective actionis taken

- Investigate complaints and
- Issue directives and recommend prosecutions as necessary

Inspectors are highly experienced industry professionals with tertiary qualifications. They are also holders of statutory qualifications and are highly trained by the department.

The inspectors have considerable powers under the legislation to ensure that corrective actions are taken at mines to achieve an acceptable level of risk.

Where it is necessary for a compliance action to be taken against persons who have safety and health obligations under this Act, the department has developed a compliance policy to give guidance on the appropriate action.

The compliance policy recommends five possible levels of action from simply providing advice up to a prosecution under this legislation.

THE COAL MINING SAFETY AND HEALTH ADVISORY COMMITTEE

One of the objectives of the Act is to provide a way of monitoring the effectiveness and administration of provisions relating to safety and health under the Act and other mining legislation.

The Coal Mining Safety and Health Advisory Committee primary function is to give advice and to make recommendations to the Minister about promoting and protecting the safety and health of persons at coal mines. To achieve this, the committee must periodically review the effectiveness of the Act, regulations and recognised standards.

The committee is a tripartite arrangement appointed by the Minister and has representatives from Government, coal mine operators and industrial organisations representing coal mine workers.

As soon as practicable, but within 4 months, after the end of each financial year, a report must be prepared and given to the Minister outlining the committees operations for the year.

CONCLUSIONS

This paper has outlined how the risk based legislative framework is applied in Queensland to manage the risks at coal mines. The paper provides an overview and for the sake of brevity, has omitted some aspects of the legislative framework.

This Robens style legislation adopted after the Moura No. 2 disaster has led to a dramatic improvement in mine safety in the state. It has now been twenty years in Queensland since there has been a major underground disaster.

There still remain challenges however in ensuring that the current provisions are not diluted in the pursuit of cost savings in difficult economic times. It is also imperative that the lessons learnt from the past disasters that shaped this legislation are not forgotten by subsequent generations.

The Queensland legislative framework has been effective in assisting coal mine workers to return home safe and healthy every day.

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