



**Queensland Government**  
Department of Mines and Energy

**DEVELOPMENT OF THE  
QUEENSLAND COAL MINING  
SAFETY & HEALTH REGULATION 2000**

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## **Introduction**

On 2 March 2001, the Coal Mining Safety and Health Act 1999 and the Coal Mining Safety and Health Regulation 2000 will come into effect.

This paper covers the initial concepts of regulation development, the tripartite nature of the regulation development process, the history of development, concepts embraced, the legislative framework and finally the major differences between the present Coal Mining Rules and the proposed Regulations.

## **History**

Development of new regulations for the Queensland coal mining industry started in 1991 shortly after the commencement of work on revision of the existing Coal Mining Act 1925.

For a period of time between August 1994 and February 1997 no work was undertaken on the Act and regulation development whilst awaiting the findings of the Moura Number 2 inquiry and developing amending rules to implement the key findings.

## **Committees**

To progress regulation development both Surface and Underground Regulation Review committees were established to decide on legislative strategy and develop the regulations.

The surface committee established in those early days is still in existence with three of the original members still serving.

Unfortunately, for a number of reasons, the underground committee had problems securing members and agreeing on the best way to develop regulations for the underground environment.

These problems were resolved following the Moura No 2 disaster with a new committee being established with clear goals and a determination to develop modern legislation.

The surface regulation committee established many subcommittees for regulation development in the various subject areas.

The underground committee, with the exception of sub committee established to implement the Moura findings and an electrical sub committee, undertook all regulation development without the aid of further sub committees.

In total over 80 personnel representing coal operators, employee organisations, mine management, supervisors, miners and mines inspectors contributed with hard work, perseverance and patience to the development of the new regulations.

Acknowledgment is made of the great contribution made by these past and present committee members.

### **Development**

The combined regulation committees decided in the initial meetings to try a completely fresh approach to the development of the regulations.

Instead of revising and updating the existing regulations the decision was made to develop the regulations by starting with a clean sheet.

This was in keeping with the intent and concept of the Coal Mining Safety and Health Act 1999 then being formulated and would establish a legislative framework and hierarchy that addressed the hazards in the most appropriate way.

To this end hazard control sheets were developed for each subject area.

These sheets described the hazard, the mechanisms that could cause that hazard, and the indicative controls to manage the risks determined.

The sheets also determined whether it was more appropriate to control the risks by the application of:-

- (a) prescriptive regulations
- (b) enabling regulations
- (c) standard operating procedures; or
- (d) duty of care provisions of the Act (no specific regulations)

### **Hazard Data Base**

The work undertaken by the regulation committees to capture the hazards and to decide the appropriate controls to manage the risks has now been developed and published on the Department of Mines & Energy web page at [www.dme.qld.gov.au/safety/pubs.htm](http://www.dme.qld.gov.au/safety/pubs.htm) as the Mining -Hazard control database.

## **Legislative Framework**

The legislative hierarchy adopted utilises the following concepts:-

1. Coal Mining Safety and Health Act 1999
2. Regulations
3. Recognised Standards
4. Safety Management systems including Standard Operating Procedures (S.O.P's)

The Coal Mining Safety & Health Act 1999 sets the framework for the mining legislation and incorporates "duty of care" ("obligations") encompassed in modern Workplace Health and Safety Acts. Observance of many obligations is left up to the mines to manage with no further legislative instruments.

In contrast to many other national and international mining statutes the Coal Mining Safety & Health Act 1999 is a stand alone Act which does not come under the jurisdiction of a State Workplace Health and Safety Act.

The Coal Mining Safety & Health Regulation 2000 is the second leg of the legislation

This regulation is divided into 4 Chapters:-

Chapter 1.Preliminary

Chapter 2 General

Chapter 3 Surface; and

Chapter 4 Underground

The Regulations either prescribe specific ways of controlling risks, describe specific outcomes to be achieved or prescribe absolute values that must be observed or not exceeded.

The third tier of the legislation is Recognised Standards. These standards describe a method of controlling risk and advice on the control of risk.

Recognised standards must be followed unless the mine adopts some other way or method, which is equal to or better in the management of risk.

The final part of the legislation is Standard Operating Procedures (SOP). Some procedures are specified in the regulations, however the mine under the requirements of the Safety Management System must develop other procedures i.e. SOP's.

Generally standard operating procedures have been prescribed in the regulations where multiple persons are engaged in a difficult task or activity, or where the skills and experience of operators may add value to the process.

The regulations detail the method of developing S.O.P's and the way disagreements on S.O.P. development should be handled.

Although agreement on the development of S.O.P's is highly desirable the ultimate decision on acceptance lies with the Site Senior Executive (SSE) based on the SSE's evaluation of the risks and controls reviewed in the development process.

### **Exemptions and Variations.**

The new regulations do not provide for any exemptions or variations.

As the regulatory basis is risk assessment and outcome driven, it is the responsibility of the mine to ensure the risks are eliminated or managed to an acceptable level using a formal methodology.

### **Regulations**

As stated earlier the regulations comprise 4 chapters. The Preliminary chapter deals with the purpose of the regulations and commencement.

### **Chapter 2 - All Coal Mines**

This deals with all those matters that apply to both surface and underground coal mines.

The chapter deals with the basic elements of the required safety and health system, the development of S.O.P's and the development and implementation of training schemes.

This section also deals with the reporting and treatment and investigation of accidents and high potential incidents and the management of emergencies at mine sites.

A further requirement of the general regulation is the duty imposed on the site senior executive to ensure that workers are notified about matters affecting their safety and procedures to be used for life threatening situations.

The general regulation introduces a new concept in risk management into mining legislation called "Fitness for Work".

The part covering "Fitness for Work" encompasses sections on consumption of alcohol, implementation of S.O.P's for excessive consumption of alcohol, improper use of drugs, personal fatigue and other physical or psychological impairment.

"Fitness for Work" in connection with alcohol also places emphasis on the development and implementation of S.O.P's dealing with education and employee

assistance programs, health assessments to decide fitness for work, voluntary self testing, random testing and testing on suspicion.

There are also requirements for the development and implementation of S.O.P's dealing with education and employee assistance programs in connection with drugs.

This section also deals with the provision of personal protective equipment, ways of reducing, monitoring and recording noise and dust levels on site and issues connected with fixed and mobile equipment.

To complete this section other matters such as fire prevention, first aid, the provision of bathing facilities, hygiene, defect reporting, working near bodies of water, working at heights, tagging and isolating of equipment and those electrical matters that are common to both surface and underground mines are dealt with.

### **Chapter 3 - Surface Mines**

The surface regulations cover those matters generally covered by the present Opencut Rules 1988.

The surface regulation covers only those things that are exclusively contained in surface mining operations.

As many of the hazards encountered in surface operations are of a more general nature this section covers only a small number of subject areas.

The subjects covered in this area are those dealing with the appointment and duties of Opencut Examiners, inspections of surface excavations, Electrical activities, Explosives, S.O.P.'s for spoil dumps, excavated faces, and unstable, hazardous or broken ground.

The surface regulation also deals with the issue of highwall mining and in particular the conditions under which persons may be permitted to go into the highwall excavation.

Part of the surface regulation deals with specification for design and construction of mine roads and for the maintenance of roads.

The regulation makes specific mention of managing the risks associated with the use of dredges, stockpile and waste dump operations.

The provision of lighting is covered as are the development of S.O.P's. to protect persons from the risks connected with flammable or toxic gases and anything that may lead to heat stress, heat exhaustion or heat stroke.

### **Chapter 4 - Underground Mines**

The underground regulation encompasses all those subject areas covered by the existing:-

- General rules for underground coal mines
- Special rules for underground coal mines

- Underground belt conveyor rules
- Underground coal mines electrical rules
- Coal mine certificate and winding licence rules
- Underground coal mines fire precaution rules.
- Moura recommendations that were legislated.

The development of modern underground regulations has been a difficult task to accomplish in the face of often competing interests.

The problems of

- providing a means of effectively managing risk in an often hazardous working environment,
- moving to a less prescriptive legislative regime,
- getting rid of years of outdated and ineffective rules
- not encumbering industry with intolerable costs
- allowing mine management to manage individual mine site risks

has in some cases resulted in compromises. These compromises however were never allowed to lower the level of safety required to protect mine workers.

The existing legislation can be confusing with rules scattered in various sections, which adds to the confusion. The existing legislation can also promote a minimalist approach to compliance by mines only following prescriptive rules, rather than getting people to focus on the risks.

Overall however the regulation committee believes that the proposed underground regulation will enable mines to more effectively manage their risks.

### **Major Differences**

Because of the large number of subject areas covered by the Coal Mining Safety and Health Regulation 2000 - Part 4 Underground Mines this paper only covers those items where there has been a major departure from the current regulations.

### **Explosion Risk Zones**

The regulations have been changed to more accurately reflect the methane environment in which mines are now working. A difficulty over the past few years has been the necessity to exempt mines from the outdated “gassy mine” concept.

The regulation now removes the 100 metres outbye the face concept to allow mines to determine the extent of the explosion risk zone by reference to those areas of the mine that can have above 0.5% methane.

## **Provision Of Methane Detectors.**

The new regulation requires that methane detectors be provided on continuous miners, shearers, exhausting auxiliary fans, L.H.D.'s and in all intake airways of longwalls and panels irrespective of whether methane has been detected at the mine or not.

## **Stonedusting**

For a long time considerable doubt has been raised about the effectiveness or otherwise of providing water barriers only in belt roads.

Allied with the greater degree of protection provided by a greater methane monitoring capability the new regulations will not require water barriers or stone dust barriers to be provided.

However Stone Dusting standards and analysis has been simplified and improved.

All areas within 200 metres of the last cuthrough must be maintained at 85% incombustibles, with returns and roadways within 200 metres at the start of a panel being maintained at 80% incombustibles. All remaining roadways in the mine are to be maintained at 70% incombustibles.

## **Use Of Aluminium**

From the commencement of the new regulations the existing restrictions on the use of aluminium underground will be largely removed.

The only restrictions are a maximum combined titanium and magnesium content of 6% and a combined titanium and magnesium content of 0.6% for exposed rotating parts.

## **Welding**

It is proposed that welding and cutting will be allowed underground without the prior approval of the mines inspectorate and persons other than those carrying out the welding operation will be allowed to remain underground.

## **Inspections**

In the area of inspections substantial changes have been made to the requirements for mine inspections.

Under the proposed regulations each mine site is responsible for developing an inspection schedule necessary to ensure the safety of the mine.

In the case of new mines and mines that have not developed an inspection schedule there is a fall back inspection regime that must be followed until sufficient employees have been engaged to undertake the development of a standard operating procedure for the conduct of inspections.



## **Potential Inrushes**

The major changes in this area are the requirement for the mine to carry out a risk assessment to determine the potential for inrush from any direction and from any distance.

These regulations capture any relevant findings of the New South Wales Gretley Inquiry.

There is no requirement for the mine to notify the inspectorate prior to working in a potential inrush area.

## **Escapeways**

Quite significant changes are proposed in the provisions for egress of people from the mine. The old concepts of second means of egress and belt road segregation have been removed.

In the new regulations a primary escapeway must be provided in an intake airway (except single or two heading developments). This primary escapeway must be separated from other intakes by stoppings of substantial construction that are reasonably airtight.

The primary escapeway must as far as practicable be free from the risk of fire, and fire suppression equipment must be provided for any equipment installed in the escapeway.

## **Firefighting**

Each mine site will now decide what provisions must be made for fire fighting equipment and the facilities and firefighting capability required.

## **Failure Of Main Fan**

Due to the increase in atmospheric monitoring required, each mine will be able to decide its own procedures for the evacuation of people when the main fan stops.

This new regulation also allows mines to keep the electrical power on with the main fan stopped. Again this is to be governed by relevant mine site developed procedures after a risk assessment on their operational conditions.

## **Conclusion**

The Coal Mining Safety and Health Regulation 2000 as presently drafted comprises over 200 pages which contain around 350 different sections.

This paper has attempted to cover only the major changes that mine operators and mine workers will need to be aware of and address, to successfully implement the Coal Mining Safety and Health Act 1999 and the Coal Mining Safety and Health Regulation 2000.

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