

MINE NEWS SAFETY

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Department of Mineral Resources

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NSW Minister for Mineral Resources, Eddie Obeid and Qld Minister for Mines & Energy, Tony McGrady working on national guidelines during the inaugural Joint Coal Safety Forum, with Qld's Ted Campbell and Tim Conroy



Joint Coal Safety Forum facilitator Professor Jim Joy helped to focus discussion from all sides of industry on the vital issue of safety

NEW SOUTH WALES AND QUEENSLAND GOVERNMENTS MEET TO TARGET COAL MINE SAFETY

The NSW and Queensland Governments are working together with the coal industry and unions to better protect the safety of Australian mine workers, and joined together at a major forum in Wollongong, last month.

The inaugural Joint Coal Safety Forum was co-hosted by the NSW Minister for Mineral Resources, Eddie Obeid and the Queensland Minister for Mines and Energy Tony McGrady. Key industry personnel and union groups were also represented.

"This is the first forum to jointly target issues affecting the health and safety of mine workers in both states," Mr Obeid said.

"Australia is the world's leading coal exporter. Last year, we exported more than 169 million tonnes of coal, worth \$9.1 billion from NSW and Qld mines. The two states collectively employ 18,961 workers."

"The industry faces many challenges – one of the most important is to ensure we develop a national approach to implementing world's best practice in mine safety and legislation."

The NSW Government's commitment to protecting mine workers is well known."

"We've provided \$13.9 million over five years to improve mine safety, we've implemented the recommendations of the Mine Safety Review and the Greiley Inquiry," Mr Obeid said.

The Queensland Minister for Mines and Energy Tony McGrady said the meeting of key representatives has provided the opportunity to learn from each other as well as foster discussions from all sides of the industry on the vital issue of safety.

"After all, we owe it to the men and women at the coal face to constantly strive for a safer working environment."

"It's important for Governments and industry to meet and discuss safety because apart from anything else, safety should be the number one priority," Minister McGrady said.

Key issues discussed at the forum included:

- regulatory reform,
- work practices,
- training and education,
- compliance and enforcement strategies, and
- investigation procedures and protocols.

Mr Obeid said the Joint Coal Safety Forum provided the opportunity for both States to identify key safety issues and will help prevent duplicating resources in research, legislation. It will greatly assist the practical implementation of better safety practices. ■

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The Department of Mineral Resources is targeting a marked improvement in the safety record of all sectors of the mining industry in NSW

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SAFETY ASSESSMENTS TARGET ISOLATION OF EQUIPMENT

Assessment is an important work method



Paul Healey, Area Manager,
Hunter Region

used by the Department's Safety Operations Inspectors and Mine Safety Officers to assist industry to continuously improve its understanding of safety issues.

In response to two fatal accidents involving mine workers performing maintenance on continuous miners, Inspectors and Mine Safety Officers recently conducted assessments on the isolation of equipment in all coal mines, both open cut and underground, throughout NSW.

"Isolation" is the industry term for the disconnection of all energy sources to a piece of equipment. Effective isolation is a fundamental process which helps to ensure personal protection while working on mining equipment.

The isolation assessment process aimed at having an immediate impact on mine safety, identifying mine site status of isolation procedures, and recommending strategies for the improvement of mine site safety.

Assessment was carried out to evaluate the effectiveness of each mine's isolation procedures and to measure their application.

Assessment results

All coal mines in NSW participated in the targeted isolation assessment. Inspectors noted a very positive response to the assessment process with full co-operation from coal operations throughout the State. Discussions allowed identification of problem areas and are able to provide opportunities for improvement. The assessment also identified:

- inconsistencies across mine sites on basic maintenance terms and tasks

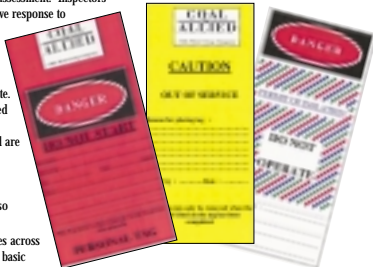


The isolation assessment process aimed at having an immediate impact on mine safety

- an over reliance on 'technical experts', which was attributed to a lack of competency-based training
- some instances where equipment design discouraged proper isolation
- not all energy sources and risks were identified by mines
- the effects of simple energy, such as gravity, were often overlooked (for example, material hung up in a raised dump truck).

The point at which energy is reapplied, either during or at the end of a task, is seen as a critical danger period. In most cases, systematic controls were limited: hand-over or change of status procedures were not generally formalised.

There was limited evidence of mines conducting systematic isolation compliance audits. Greater attention to hazard identification and interdependence of operating systems was identified. ▶



Examples of safety tags used in isolation procedures by Coal & Allied Operations Pty Ltd



Assessment outcomes

The following recommendations were made as a result of the isolation assessment process:

- That guidelines on isolation be published and address:
 - ✓ standard terminology
 - ✓ hazard identification,
 - ✓ hazard reduction processes,
 - ✓ consistency on similar equipment,
 - ✓ isolation hardware,
 - ✓ verification of isolation status procedures,
 - ✓ hand-over or change of status procedures, and
 - ✓ training.
- Mines consider the development of an integrated consultation, education and discipline process to ensure that procedures are appropriate and adhered to.
- The results of the isolation assessment report be provided to mines to assist in the development of, and improvement to, isolation procedures.
- A follow-up assessment be conducted in 12 months to determine improvements in implementation (both practice and documentation).



Underground coal mining equipment, such as this roofbolter (above), was the subject of the isolation assessment process

- Manufacturers and mine operators consider isolation as a key concept in equipment design and modification.

These proposals are presently under consideration by the Chief Inspector of Coal Mines.

Further work

Human and behavioural issues associated with the maintenance of continuous miners is an important area not examined in the scope of the isolation assessment.

Further work is required to understand why people do not follow procedures or why procedures do not adequately account for behavioural issues. The role of operator

behaviour, its modification and effective discipline also need to be understood.

There is already evidence that the isolation assessment process has positively influenced the development of isolation procedures. Continuing feedback from this process will further assist mining operations to comply with Clause 27 of the new Coal Mines (General) Regulation 1999 which requires isolation procedures to be developed and implemented.

For further information, contact Paul Healey, Area Manager Hunter, Safety Operations.
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This section of Mine Safety News is devoted to publicising industry initiatives in mine safety.

We can all do something about safety.

In promoting the sometimes simple, yet innovative ideas, we can all work on safety together and learn from one another to make our industry safer and more efficient.

If your company or someone you know has taken the initiative in introducing new safety ideas at your work, Mine Safety News would like to hear about it. Simply send or phone some details through to:

Gillian Macmillan, Communication / Education Officer

Mine Safety and Environment

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GOOD NEWS ON MINE SAFETY

Innovations in isolation

During the course of the Department's isolation assessment of equipment in all NSW coal mines (see story page 2), innovations were observed which had been developed at some sites.

A sound and practical example is a 'lock-box' device, developed by Chain Valley Colliery, which allows a simple and effective method of group isolation.

The box allows for multiple technicians to isolate and secure remote equipment and provides a clear indication of who is involved in working on the piece of equipment.

The lock-box works by removing the isolating mechanism from a piece of equipment and placing it in the box which is then locked. An identification tag attached to the lock contains all information on which technician is working on the equipment while isolated. Each separate technician places their own lock through one of the holes on the box. The isolation mechanism in the box cannot be removed until all the locks have been opened.

The box is portable and can be taken from the isolating point (for example, a belt starter or electrical sub-station) to where the work is being performed.



An innovation in isolation procedures, the 'lock box' was developed by Chain Valley Colliery



Quarry industry representatives welcome the new Safety Management Plan - Workbook, from left: Fred Stevens - CSR Readymix, Rob Regan - DMR, Graham Terrey - DMR, Steve Frost - Quarry Products, Greg Goodwin - Boral and Institute of Quarrying Australia President, Geoff West - Rocka, Ian Scainton - Penrith Lakes Development Corporation, Les Cadzow - Pioneer Concrete, and George McLelland - Consultant

SAFETY SYSTEMS FOR A SAFER NSW MINERALS INDUSTRY

Whether you call them Mine Safety Management Plans or Core Risk Assessments or Safety and Health Management Systems, they all work towards a common goal: Better on-site safety

The overriding objective of new legislation for the coal, metalliferous and extractive industries is to make mines safer. The introduction of coordinated and systematic safety systems is aimed squarely at operations assuming the responsibility of the control of health and safety on site and the application of duty of care in providing safe places of work by identifying and managing hazards.

Mine safety management plans and systems specifically look at particular site safety hazards and provide a means to identify, address, act, monitor and review. They are about coordinating safety documentation into a controlled and systematic approach, then having in place procedures for the ongoing improvement of the system.

Operations may already have their own system or plan implemented on site and be addressing safety issues and have proper management of them. The new legislation simply requires that site safety is managed, is systematic and is ongoing.

Site health and safety management systems, plans, assessments, approaches or processes must be documented and be able to be reviewed and assessed to demonstrate that where hazards exist they are simply not ignored.

Risk management provides a basis for the assessment of risk and the development of appropriate risk controls for identified or generally known hazards. Quality assurance provides consistent application. Effective audit and review of risk controls as developed through the risk management process can then be applied.

The level of fatalities and injury in the NSW minerals industry is unacceptable. It is imperative industry improve its OH&S performance.

By working together on systems and plans for mine site safety, the Government and all stakeholders can achieve an improved safety performance and a sustainably safer industry for all.

For further information, contact Graham Terrey, Chief Inspector of Mines and Director, Mine Safety and Environment.

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MINE SAFETY MANAGEMENT PLANS: FREQUENTLY ASKED QUESTIONS

With the greater focus on a general duty of care through the Coal Mines (General) Regulation 1999 and the General Rule 2000 under the Mines Inspection Act 1901, all mining operations throughout New South Wales are required to have in place Mine Safety Management Plans.

Duty of care means having safe systems of work in place to do everything reasonably practicable to ensure a workplace is safe.

A Mine Safety Management Plan (MSMP) is a way of actively seeking out hazards unique to each mine site and dealing with them systematically and in priority. Each site will be required to have MSMP in place to demonstrate that safety is being improved and major risks are being effectively identified and managed.

In order to discuss queries about MSMPs and reduce inconsistencies in interpretation, the following list of questions and answers have been compiled to assist sites comply with new legislation.

Q Does a MSMP mean more paperwork?

A No. MSMPs are simply about bringing together relevant documentation so that a site's safety can be managed in a consistent and systematic way. ▶



Your company may already have safety systems available to it or are in place. What a MSMP does is provide one major document that points to other material or information for a controlled approach to the management of site safety and health.

Q Why is there not a standard MSMP that I can just put my company name on the top?

A Each site has its own specific needs. A MSMP must be developed through consultation with the workforce if it is to be effective. This also provides an opportunity to strengthen good working relationships.

Additionally, involvement of the whole workforce in the MSMP will lead to an increased understanding of your site's health and safety systems. Implementation of plans will be more effective if the workforce has an ownership of the MSMP.

The use of a 'generic' type plan common to a number of mine sites will not fulfil the intent of the legislation changes.

Q We haven't had an accident for 10 years. Why do we have to have a MSMP now?

A New legislation requires each operator/employer to prepare and implement a MSMP particularly targeted to low frequency high consequence accidents. A non-occurrence of a serious accident on your site does not

mean that it will not happen. It simply means that it has not happened yet.

Major hazards are required to have critical controls in place which must be able to be rigorously and reliably applied. A more systematic approach to the management of such hazards is required and will result in increased reliability, and address the duty of care required by legislation.

Q How do I set up a MSMP for my organisation?

A A quality assurance system approach would be to document what systems you have in place now, looking at your company's existing systems and utilise these as a starting point.

The MSMP is critical in organisation and control of your site's approach to safety and health. Remember that critical appraisal of how a site identifies and manages risk is an essential part of developing a MSMP. A formal risk assessment to MDG 1010 is an excellent starting point.

The Department is happy to provide direction and there are a number of consultants who are well qualified to provide help.

The Department of Mineral Resources in conjunction with Institute of Quarrying Australia (NSW Branch), have published a Safety Management Plan - Workbook for the metalliferous and extractive industries, which provides a solid reference (refer to page 6).

The coal sector has undergone a series of workshops throughout late 1999 to assist with the implementation of MSMPs as introduced through the Coal Mines 1999 Regulations. The Department is also in the process of developing resource material that will provide direction for mines to develop their individual MSMPs. This resource material is expected to be available later this year.

Q Do I need to submit my MSMP to the Department for approval?

A No. However, your company is required to demonstrate all measures necessary for the prevention and mitigation of major OH&S hazards have been addressed, including: an OH&S policy; a management system for implementing for policy (including arrangements for developing, implementing and maintaining the system and its capacity to control design, construction and operation); an effective method for identifying, assessing and preventing major hazards that might occur; and measures (such as safe plant and safe operating procedures) to prevent and mitigate major accidents.

A MSMP is designed to draw all the documentation to address these issues to one systematic reference point.

For further information please contact your Regional Office (see back page for details). ■



DMR Safety Operations managers meet at Orange Regional office in June to discuss approaches to MSMPs, from left: Dave Bedford, Leo Roberts, Rob Regan, Les Gardner, John Moss, and Paul Healey

A SAFETY PLAN WORKBOOK FOR THE METALLIFEROUS AND EXTRACTIVE SECTORS

The General Rule 2000 requires all mine sites to develop Mine Safety Management Plans. The new General Rule 2000 is due to come in effect on 1 September 2000.

The NSW Government and the Institute of Quarrying Australia (NSW Branch) have been working together in the development of a comprehensive program for designing Mine Safety Management Plans for metalliferous and extractive industries in NSW.

The culmination of this work has been the production of the Safety Management Plan - Workbook, which was launched during the Institute of Quarrying Australia (NSW Branch) Annual Seminar in Port Stephens, last May.

Why a Safety Management Plan - Workbook?

The Workbook has been developed to assist operations, large and small, to develop and implement methodical safety management plans and procedures specific to individual sites. A Mine Safety Management Plan (MSMP) is a means of identifying and controlling risk in a systematic and consistent way, and outlining roles and responsibilities.

The workbook is a practical guide to complying with legal obligations applicable across Australia. It is modelled on Quality Systems and reinforces hazard identification, risk assessment and risk control approaches.

What the workbook contains

The Workbook is divided into three main categories:

- administration - developing and maintaining the safety system (risk assessment, job safety analysis, workplace inspections, review and audit, injury and illness recording),
- people programs - providing people with skills and knowledge (communication and consultation, training, health), and
- core risk programs - emergency preparedness and systematic management of hazards (fixed and mobile plant, manual handling, explosives, noise, electricity).

Guidelines which have previously been published in NSW have recently been regrouped and divided into complementary



Workbook developers from left: Susan Fields - Occupational Health and Training Consultant, Graham Terrey - Director Mine Safety Environment DMR, Greg Goodsir - New Business Manager at Boral and Institute of Quarrying Australia President, David Cileto - Pioneer Concrete and Crushed Stone and Sand Association of NSW, and Tony Ingram - Boral and Crushed Stone and Sand Association of NSW.

sections to parallel the Workbook structure. The Guidelines for Safe Mining are presently in draft form. General Rule 2000 has been restructured to align with the guidelines and the Workbook for greater legal compliance.

Both the Draft Guidelines for Safe Mining and the Safety Management Plan - Workbook, will be available from the Department of Mineral Resources by late September 2000.

The emphasis is on the involvement of employees in the development of safety management plans, rather than focussing on a plan document. Employees are often in the best position to see changes in risk assessments and to be able to respond to changing risk situations and make up for any inadequacy in engineering controls.

The Department's experience in investigating accidents over many years is that, simply put, people knew of the existence of hazards but often took no deliberate action regarding hazard identification, risk assessment or control.

Smaller scale mines and quarries, in particular, have a disproportionately high rate of injuries. The introduction of Mine Safety Management Plans is a decisive step towards improving on site safety especially in the small mine sector. However, the cooperation and collaboration of the industry is required to ensure the rate of incidents and accidents are addressed.

Involvement of the workforce in the development of Mine Safety Management Plans is essential to achieve improvements in

safety performance. Employees must have an understanding of safety and health systems and why changes may be required. Their ownership of such systems is integral to the successful implementation of the site based safety management systems, and the effective application of General Rule 2000.

The NSW Government will actively enforce the new legislation to ensure better protection for mine workers.

For further information, contact Graham Terrey Director, Mine Safety and Environment.

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The Institute of Quarrying Australia Safety Management Plan - Workbook



A NEW GENERAL RULE 2000

Safety on metalliferous and extractive industries sites has been targeted in a new General Rule 2000. The new Rule focuses on mine sites taking responsibility for developing safety management plans and policies and monitoring safety performance.

The Mine Inspection General Rule 1994, which 'sunset' at the end of August 2000, was replaced on 1 September 2000 with the new Rule. The General Rule applies to all metalliferous and extractive industries sites.

The General Rule 2000 clarifies aspects of the 1994 Rule including a provision to allow NSW to comply with International Labour Organisation conventions, and improvements to standards of safety performance.

The Department has planned for 6 regional workshops within the next 12 months to help explain the requirements of the new legislation. All mine managers will be invited to attend and are expected to take part in a session, or send a representative.

The General Rule 2000 contains substantive changes as well as replicating many of the provisions contained in the 1994 Rule. Important changes include:

- All mines (now including those with less than 5 employees) are required to have occupational safety and health policies in place (cl. 10)
- More formalised Mine Safety Management Plans are now required (cl. 9)
- Mines are required to measure, monitor, evaluate and communicate safety and health performance (cls. 24, 28)
- Reinforcement of the move toward recognised industry competency standards and on-going professional development of mine managers (cls. 10, 12)
- Strengthened provisions for all on site to have authorised entry (cls. 16, 17)
- Contractors and sub-contractors to have their own approved safety and health system or be subject to the mine's system (cl. 11)
- Requirement for a consultative process in development of a site 'fitness for work' procedure, including fatigue, alcohol and drug measures (cl. 31)



The General Rule 2000 takes effect on 1 September 2000. It applies to all metalliferous and extractive operations in NSW, such as the Peak Hill gold mine (above) located near Parkes in western NSW

- Specific safety measures are required including:
 1. mining geomechanics expertise to be readily available; (cl. 46)
 2. risk assessments to be conducted when mine workings approach old workings; (cl. 47)
 3. specialist mine ventilation expertise at each mine; (cl. 39)
 4. preparation of hazard management procedures for high consequence events (cl. 20)
- Incorporation of requirements of various International Labour Organisation Conventions, including No 176, Safety & Health in Mines; No 139, Occupational Cancer; No 148, Working Environment (Air Pollution, Noise and Vibration); No 162, Asbestos; and No 170, Chemicals at Work (cls. 48, 51-58, 38, 43)

The General Rule 2000 has also been reformatted to provide for consistency of terminology and sequential arrangement with the Safety Management Plan - Workbook which was developed in conjunction with the Institute of Quarrying Australia (NSW Branch).

The Safety Management Plan - Workbook will be discussed during the information workshops, while the Draft Guidelines for Safe Mining will also be referred to.

Copies of the new General Rule 2000 are available on the Department's Internet site <www.minerals.nsw.gov.au>.

For further information contact Daniel Hoeng, Regulatory Development Officer,

Phone (02) 9901 8886

Fax: (02) 9901 8584

Email: hoenigd@minerals.nsw.gov.au ■■

SAFETY ALERTS

No.	Date	Title
SA 00-12	31 May 2000	Serious incident involving raiseborer hole protective canopy (this accident resulted in fatal injuries)
SA 00-13	21 June 2000	Near miss incident with ride-on lawn mower
SA 00-14	15 June 2000	Unplanned movement caused by faulty transmitter
SA 00-15	30 June 2000	Truck driver fatally injured in weighbridge incident
SA 00-16	27 May 2000	Security and safety highlighted in bobcat ride at quarry
SA 00-17	11 July 2000	Ineffective conveyor belt clamp
SA 00-18	13 July 2000	Electric shock from damaged fixed wiring

Copies of safety alerts can be down loaded from the Department's web site Safety page at <www.minerals.nsw.gov.au>.

For hard copies of safety alerts, please contact the Department's Steve Stewart on:

Phone: (02) 9901 8413

Fax: (02) 9901 8584

Email: stewart@minerals.nsw.gov.au

NEW ACCIDENT/INCIDENT FORMS

Amendments to the Mines Inspection Act 1901 and the General Rule 1994, on 30 July 1999, instigated the development of a more comprehensive accident / incident notification process.

This process redefined notifiable categories into three distinct groups, as defined in MIA section 47 (2) "serious accidents and dangerous incidents", section 47E "accidents prescribed as resulting in bodily injury" and General Rule 2000 clauses 25 and 26.

Former system

The previous "yellow" Accident Report and "pink" Incident Report forms were replaced with the two new forms as of 1 July 2000. These new forms were developed with industry through a consultation process.

New systems

All fatalities, serious accidents, dangerous incidents and emergencies can be notified via the new "Accident/Incident" Report.

Lost Time and Medical Treatment injuries

All non-serious accidents can now be notified via the "Monthly Injury Form - (Non Serious)", as per MIA section 47E. For the purpose of notification all accidents requiring off site medical attention and/or time lost from work of one day/shift or more shall be recorded.

Current legislation requires the General Manager of a mine to keep records of these prescribed accidents in a form approved by the Chief Inspector and to be available upon request to an inspector. All companies are asked to forward this information, as a matter of course, through local Departmental offices.

Why a new form?

The new forms will formalise data collection in order to maintain a comprehensive and state-wide database of events. This will also enable the Department to model and analyse statistics.

The forms will provide both industry and the Department with a tool that collates an increased level of information, ensuring more proactive outcomes. The new forms will also assist operations through the reporting process by providing additional information and guiding them through the procedure. The duplicate copy also assists sites to maintain the integrity of the information they report to the Department.

Performance reports

The Department will only use the reports to provide aggregated information for the NSW industry. The Department is currently developing procedures for a quarterly supply of a wide range of performance data to be available via the Department's web site and to be included in Mine Safety News (refer to page 10 for the latest figures).

The new accident/incident form has been designed to comply with the MIA 1901 as amended and the General Rule 1994. Minor reference changes will be required to the new GR 2000. These changes will be advised.

Please contact your Regional Office for further information (see back page). ■

N.S.W. MINERAL RESOURCES NEW SOUTH WALES

NSW Department of Mineral Resources
Accident/Incident Report

Please refer to the back page before completing this form

Report a
serious injury
or death
or a dangerous incident (see page 1)
or emergency (see back page)

A. About the mine where the illness/injury/incident occurred

1. Mine name
2. Mine address
3. Mine site address
4. Operation type
5. Mine type
6. Number of people
7. Employment status

B. About the injured or ill person

8. Family name
9. Given name
10. Home address
11. Date of birth
12. Sex
13. Date of death
14. Date of return to work
15. Date of return to normal duties
16. Date of return to normal duties
17. Date of return to normal duties
18. Date of return to normal duties
19. Date of return to normal duties
20. Date of return to normal duties
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C. About the illness (go to section D if reporting an injury)

1. Date of onset
2. Date of diagnosis
3. Date of diagnosis
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50. Date of diagnosis

D. About the injury (answer ALL QUESTIONS) or the incident (answer questions 29-32, 35-37, 39-41 only)

1. How did it happen?
2. How was the injury aggravated?
3. How was the injury aggravated?
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E. Details of person filling out this report

1. Name
2. Address
3. Address
4. Address
5. Address
6. Address
7. Address
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NSW Department of Mineral Resources Office use only

General Manager
Signature
Date

Send Original to nearest NSW Department of Mineral Resources Office (see back of form sheet)

These new forms will assist mining operations by providing additional information and guiding them through the procedure



CENTRAL WEST WELCOMES NEW AREA MANAGER

John Moss has joined the Department of Mineral Resources in the Orange Regional Office as the new Area Manager for the Central West. This region includes the Orange, Cobar and Broken Hill regional offices.

John comes to the Department with an extensive background in metalliferous operations having spent most of his 26 year working life travelling the world working in hard rock mines.

Most recently John worked for Pasminco at the Rosbery Lead/Zinc Mine in Western Tasmania for five years as Manager Mine Technical Services and for the previous 3 and a half years as Manager Mining. John has also worked in various other roles with Queensland's Mt Isa Mines, in the Sultanate of Oman in underground copper mines, Southern Ireland and Zambia.

John takes over the Area management of the Central West region from Dave Bedford who was Area Manager for 17 years. Dave will continue in the role of Area Manager for the Northern region and will be based in the Department's Armidale office.

John is looking forward to taking on the new and challenging role, especially in the area of improving mine safety and working with the numerous smaller metalliferous and extractive operations in the Central West.

"My expectation" said John "is that, as in the industry we serve, the Department of Mineral Resources will continue it's drive to explore and implement different ways of doing things if it is to provide quality service".

"I look forward to increasing my knowledge of mining operations in the Central West" said John, "although the sheer number of operations will



John Moss, new Area Manager Central West with the NSW Department of Minerals Resources

make sure that my life in Orange will be a busy one".

John's hobbies and interests include his family, rugby union, golf, gardening and music, having already signed up to play with the Orange Brass Band. As the city of Orange welcomes John and his family to the area, the Department of Mineral Resources also welcomes John to the Safety Operations team and looks forward to a productive and effective association.

John Moss, Area Manager Central West can be contacted at the Orange Regional Office on:

Phone: (02) 6360 8213

Fax: (02) 6360 8344

Email: mossj@minerals.nsw.gov.au ■



The Central Western Daily (Orange) newspaper highlights the contribution of the Department in the area

MINE SAFETY ON THE WEB

Departmental documents and reports referred to in these pages can be accessed from the Department of Mineral Resources' web site <www.minerals.nsw.gov.au>, under the Safety section.



Links to further information can be found on the Department's web site

These include:

- The NSW Government's policy on the Enforcement of Health and Safety Standards in Mines
- Gretley Inquiry Report
- Mine Safety Review
- Mines Inspection General Rule 2000
- New coal mines regulations:
 - ✓ Coal Mines (General) Regulation 1999
 - ✓ Coal Mines (Open Cut) Regulation 1999
 - ✓ Coal Mines (Underground) Regulation 1999
 - ✓ Coal Mines (Investigation) Regulation 1999
- A Study of the Risky Positioning Behaviour of Remote Control Mining Equipment
- The Oral Notification Checklist
- Mine Safety News newsletter
- Safety Alerts
- Safety Publications (including mine design guidelines)
- Legislation Updates

Links to further mine safety sites can also be found on the safety pages.

For further information on safety publications, contact the Department of Mineral Resources Information Counter
Phone (02) 9901 8269
Fax: (02) 9901 8247
Email: maniakak@minerals.nsw.gov.au

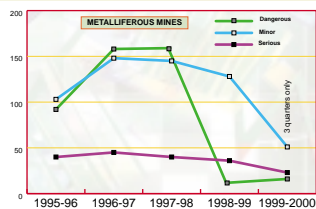
EFFECTIVE MEASUREMENT OF SAFETY PERFORMANCE

Performance measures can be powerful tools in both encouragement of and support for improvements in safety and health in the mining industry. Measures can be utilised to develop trends and to analyse data with the view of identifying preventative actions which can be taken. Data can be collated on an industry-wide basis or relate to a particular site or function.

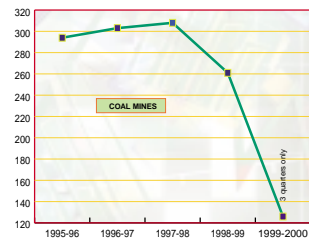
The Mine Safety Review of 1997 recommended adoption of a combination of performance indicators. It was suggested this combination could measure the processes in place to manage major risk and prevent serious injuries and death, and those which measure the outcomes of mine safety management systems (for example, Lost Time Injury Frequency Rate (LTIFR), first aid injury rate, medical treatment injury rate, etc.).

The report was highly critical of the use of LTIFR as the primary indicator of safety performance as it is a very poor indicator of how mine sites might be managing major risk. A number of new performance measures were proposed by the group, including workers' compensation cost per employee, a permanent disablement index (to capture permanent loss of a body part or body function, excluding back injury and industrial deafness), and reported incidents (lost time injuries plus medical treatments that do not involve lost time). A fundamental element of the improvement strategy for safety performance information is COMET (Common Mines Environment). This sophisticated relational database now contains over 12 months of 'real' data. This has substantially improved the Department's capacity to identify and analyse trends in safety and environmental performance.

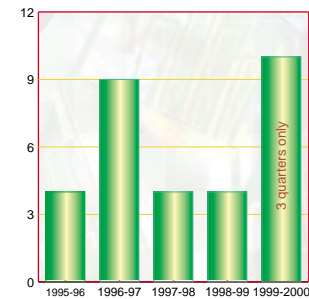
The measurement of safety performance continues to be a major issue for the industry and its stakeholders. Effective measurement is crucial to improving performance. It is generally accepted that a mixture of process- and outcome-based measures is the best way to identify risks by measuring performance at different levels and over different functions. The correct mixture of these indicators is still to be determined.



Reportable accidents (serious and minor) and reportable dangerous incidents



Reportable dangerous occurrences



Fatalities in coal, metalliferous, mineral and extractive sectors



REPORTING ON MAJOR MINE ACCIDENTS

The Department has a responsibility to ensure that minerals recovery in NSW is safe, responsible, effective and efficient for the benefit of all stakeholders and the community.

The NSW Government implemented an Enforcement Policy on 1 January 1999 in an effort to address safety concerns within the minerals industry in NSW. The Enforcement Policy aims to ensure compliance with legislation means a safer industry.

The Enforcement Policy is presently under review. The purpose of the policy is to describe how the Department will respond to industry needs and the Department's expectations of industry. The review will look at the effectiveness of the policy and make any suggested improvements.

A transparent procedure has been developed within the Department of Mineral Resources for considering investigation matters recommended for prosecution by officers. Information relating to each matter is compiled and submitted to the Assessment and Review Committee which provides appropriate recommendations to the Director General.

The present status of major mining events is listed below:

Convictions

Company	Date	Penalty
Kembla Coal and Coke	16 August 1999	\$50,000 plus costs
Hoipo Quarry	15 March 2000	\$80,000 plus costs
Oberon Quarries	13 April 2000	\$10,000 plus cost
Corndale	22 May 2000	\$1,500 plus conditions on defendant

Prosecutions Proceeding

Berrima Coal Pty Limited
United Collieries Pty Ltd

Under Investigation

There are presently 16 separate matters under investigation by the Department.

Other Matters

Reports were considered in four further matters. In one, a warning was issued and in the three other matter, a decision was made to take no further action.

Where a serious breach occurs which can be substantiated by evidence the Department will take action to prosecute. In other cases, the

Department uses a range of sanctions to ensure enforcement.

A copy of the current policy 'The Enforcement of Health and Safety Standards in Mines' can be downloaded from the Safety page on the Department's web site at <www.minerals.nsw.gov.au>. ■■



Analysis of Investigation Unit findings will help in accident prevention

LEGISLATION UPDATES

No.	Title	Date
3/99	The Coal Mines (Investigation) Regulation	22 September 1999
4/99	Gazettal of specifications under the Coal Mines Regulation 1999	2 November 1999
1/2000	Introduction of new regulations that impact on the mining sector	21 January 2000
2/2000	Definition of "transport" within the Coal Mines (Underground) Regulation 1999	21 January 2000
3/2000	Employee participation in health and safety in coal mines	18 February 2000
4/2000	Exemptions from certain ventilation control system requirements	16 June 2000
5/2000	Status of approvals under the 1999 Coal Mines Regulations	16 June 2000
6/2000	Amended diesel fuel specification	16 June 2000
7/2000	Occupational Health and Safety Act 2000	30 June 2000

Copies of legislation updates can be downloaded from the Department's web site <www.minerals.nsw.gov.au> under the Safety section.

Please refer to your local Department of Mineral Resources Office (see back page) for further information or contact:
Chris Ellicott, Manager Regulatory Development:
Phone: (02) 9901 8412
Fax: (02) 9901 8584
Email: ellicotc@minerals.nsw.gov.au

BARRIERS TO ELECTRIC SHOCKS

There have been a significant number of electric shocks in the NSW mining industry in the year 2000.

Mines, quarries and processing plants use electricity in large quantities and often in difficult environments. Managers, engineers and maintenance personnel need to be able to recognise the barriers to electric shock, so they can review the effectiveness of their electrical equipment through design, commissioning, installation, operation, maintenance and decommissioning.

How can electric shock occur?

There are two main ways in which electric shocks are received.

- Direct contact (contact with a live conductor).
- Indirect contact (contact with the outer metal casing of electrical equipment, or some other metal structure which has become live because of a fault condition in the equipment).

Other types of electric shock deserve consideration, for example, lightning, static electricity, automotive ignition systems. However these shocks tend not to be directly related to wiring systems.

Barriers to direct contact

Well established barriers to direct contact have been documented:

- Insulation (the outer covering of cords or cables)
- Enclosures or barriers (conductive parts inside enclosures)
- Physical obstacles (fences around switchyards)
- Placement out of reach (overhead aerial conductors)
- Special designs (for wet situations).

Their effectiveness depends on good design and proper maintenance practices, and on the extensive use of warning signs, isolation procedures, lockable "Operating Areas" and the proper testing.

These barriers are all prevention barriers, however there are no measures designed to protect people after direct contact has occurred. A Residual Current Device (a sensitive earth leakage relay) is not a barrier



to direct contact, but may reduce the risk of electrocution.

Barriers to indirect contact

Identified barriers to indirect contact can be:

- Earthing (all exposed metal parts connected to earth)
- Disconnecting devices (fuse, circuit breaker, earth leakage breaker or RCD)
- Double Insulated Equipment (designed so that it cannot become live)
- Circuit Design (conductor sizes and lengths selected to ensure harmful voltages cannot appear on earthed metal parts, and that earth faults are detected and switched off).

Water and electricity don't mix

Certain situations increase the risk and severity of electric shock. These are generally associated with the presence of water, a situation which frequently occurs in mining and mining support operations.

Electrical equipment is available that has an Ingress Protection (IP rating). For example, electrical equipment in hose down areas, must have a rating of at least IPX5, which means it is capable of withstanding jets of water directed at it at all angles without failure.

Ensuring electrical installations are safe

Design, installation and commissioning to Australian Standards ensures that barriers are in place. Project specification should nominate the relevant Australian Standards and the means by which the provider will demonstrate that Standards compliance has been delivered.

Barriers to electric shock are maintainable items. It is essential that maintenance actions confirm that barriers are in place and effective



Maintenance and testing ensures the barriers remain in place and are effective.

Maintenance personnel need to be familiar with the requirements of the current Australian Standards, to the extent that any compromise in a barrier is noticed, prompting reporting and programming of rectification work.

Barriers to direct contact can fail gradually, and loss of protection may not be noticed by the casual observer. Insulation can be degraded over time by the effects of sunlight, metal enclosures can rust, fences gradually deteriorate, and clearance under power lines can be altered by build up of ground level, sagging lines and the like. Accurate reporting of the condition of electrical plant can allow maintenance managers to budget for rectification.

The barriers for indirect contact can be confirmed by implementing a rigorous testing regime. Circuit designs need to be checked at the time of installation, and reconfirmed after every modification. Routine independent auditing will not only bring fresh eyes to an operation but help to keep maintenance managers abreast of changing standards. ▶



Finally it is essential people carrying out electrically oriented tasks, whether it be system design or plant maintenance, possess the necessary competencies.



The Department of Mineral Resources is targeting a marked improvement in the safety record of all sectors of the mining industry in NSW.

A 10 point health check-up for electrical safety

- ✓ Are regular risk assessments conducted for the purposes of preventing electric shock?
- ✓ Has your site been audited recently to the latest electrical standards?
- ✓ Are your maintenance personnel well acquainted with the requirements of the latest standards?
- ✓ Have your maintenance activities been reviewed recently to see if you are inspecting for compliance with Australian Standards?
- ✓ When electrical systems are modified, are they assessed for Australian Standards compliance?
- ✓ Before modified electrical systems are put into service, do they undergo the commissioning as described in AS 3000:2000?
- ✓ Is there an thirty milliamp RCD protecting EVERY socket outlet?
- ✓ Does all electrical apparatus in general hosting down zones and other damp areas have at least an IPX5 rating?
- ✓ Are all enclosures with exposed lived parts locked to non skilled persons, and fitted with appropriate warning signs and labels?
- ✓ Do your safe work procedures demand the use of a non contact tester before working on conductors EVERY TIME?
Do your supervisors rigidly enforce this?

For further information, contact John Waudby, Senior Inspector of Electrical Engineering

Phone: (02) 4942 2300

Fax: (02) 4942 2323

E-mail: waudbj@minerals.nsw.gov.au
or

Steve Millington, Inspector of Electrical Engineering

Phone: (02) 6572 1899

Fax: (02) 6572 1201

E-mail: millings@minerals.nsw.gov.au ■■

LOCAL CHECK INSPECTORS EXAMINE ROLE

Wednesday 5th July saw the inaugural Industry Safety Seminar for Local Check Inspectors held at Penrith Panthers Leagues Club.

The day was organised by the NSW Department of Mineral Resources (DMR) and the Mining and Energy Division of the Construction, Forestry, Mining and Energy Union (CFMEU) in a joint effort to share information and exchange ideas on mine safety.

Presentations were organised to clarify the role of the Local Check Inspector, bring them up to date with a review of current legislation and proposed regulatory reform, and finally to examine the training needs of the Local 'Checkie' with a view to making them more effective as safety watchdogs.

Most attendees of the seminar were appreciative of the opportunity to examine their role as Local Check Inspectors and felt further seminars would be worthwhile. The opportunity to identify training needs in a specific group workshop session was also well received with much needed information on this matter provided to both the DMR and the four NSW District Check Inspectors.

The seminar was recognised as an important communication forum and a step forward in industry consultation in mine safety matters.

The day also saw a very entertaining presentation on the human factors in mine safety: perceptions of risk and risk taking. Corrie Pitzer's presentation on patterns of risk and behavioural responses left everyone in the room forewarned about kangaroos jumping from the right side of the road!

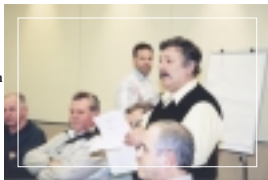
A lively open forum ended the day's activities and suggested that there is still a deal of work to be done in identifying training needs, addressing the responsibilities of Local Check

Inspectors and further defining their mine safety roles.

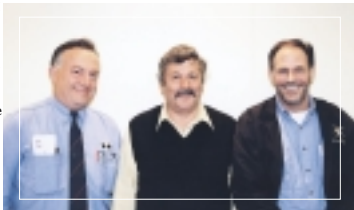
With over 90 Check Inspectors and DMR personnel participating in the day it was felt to be a significant success. It is hoped further information seminar days will be held to continue the groundbreaking work undertaken with the first Industry Safety Seminar for Local Check Inspectors. ■■



Industry feedback was an essential part of the first Industry Safety Seminar for Local Check Inspectors held on 5 July 2000



District "Checkie" Ron Stothard helps a group brainstorm ideas during the afternoon workshop session



District Check Inspectors (from left) Les Yates, Ron Stothard and Glen Dwyer. Dennis Ward is the remaining NSW District Check Inspector absent from this photo

HOT WORK: SAFE CUTTING AND WELDING

The duty of care responsibilities in legislation extend to all tasks performed in and around mines. Cutting and welding operations (also known as 'hot work') have been the cause of several incidents reported to the Department during the past 18 months:

Outbreak of fire incidents

Precautions should be in place to prevent the possibility of fire or explosion, which can result in harm to either people or property. The following reported incidents were caused by hot work procedural failures:

- oxy cutting, rubber lined pipe, minor fire
- oxy cutting, minor fire in waste material, metalliferous treatment plant
- oxy cutting, fire in conveyor belting and extensive damage to crushing plant - loss of production underground for one day, plant down for four days
- grinding steel pipe, grass fire from on surface of underground mine
- oxy cutting ignited nearby packing and rubbish, fire in underground workshop
- brazing a steel fuel tank, fuel ignited and tank exploded - fatality
- welding, rubber lined pipe, fire in lining, concentrator plant - minor equipment damage.

Hot work permit

Incidents associated with hot work (grinding, welding, thermal or oxygen cutting or heating, and other heat-producing operations) can be minimised by the development and implementation of a hot work permit.

Cutting and welding in hazardous areas are high risk activities and as such require additional safety precautions. Guidance for the development and implementation of hot work permits are contained in Australian Standard AS 1674.1-1997 Safety in welding and allied processes, Part 1: Fire precautions.

For further information contact Mark Freeman, Mine Safety Officer
Phone: (02) 6360 8329
Fax: (02) 6360 8344
Email: freemanm@minerals.nsw.gov.au



'Hot work' incident resulted in major damage to an operation's crushing plant

Guidelines for Hot Work

Precautions

- fire equipment available and within 10m of work area
- hot work equipment in good repair

Within 15m of work

The area within a radius of 15 metres from hot work, including the space above and below that area, should be cleared entirely of hazards.

The following precautions within 15m of hot work can essentially isolate any fuel from spark:

- good housekeeping
- flammable liquids removed from work area
- combustibles that cannot be removed protected with fire-resistant covering
- explosive atmospheres eliminated or hot work not performed
- wall and floor openings covered
- combustibles removed from opposite side of walls

Work near/on walls/ceilings

- combustibles moved from both sides
- no combustible coverings or insulation

Confined space/enclosed equipment

- cleaned of all combustibles
- purged of flammable liquids/vapours

Hot work monitoring

- monitor area during work
- monitor for at least 1 hour after



OTHER SAFETY MATTERS

Emergency towing hooks - Toyota Motor Corporation Australia Limited.

A Significant Incident Report (95/3) was issued by the Department in October 1995, following a serious injury sustained while a Toyota Land Cruiser was being towed out of a bog. Brackets designed for 'tie down' of the vehicle during transport were mistakenly used for towing lugs and broke away from the car causing the injury.

At the time local dealers and mine sites were able to remove the offending brackets, however, the intervening years have seen more leased vehicles on site which may still have the brackets attached.

Toyota Motor Corporation Australia Limited has issued a service bulletin (ER035-00) to all NSW Toyota dealers instructing them to have the brackets removed from all vehicles operating on mine sites.

The Department requests that sites audit their light vehicle fleets to check for the offending brackets and facilitate removal if found.

Queensland safety fuse incident

A recent incident in Queensland, which could have resulted in a very serious accident, is also very relevant to NSW.

A safety fuse incident highlights the risks to shotfirers around safety fuses not functioning at the designed rate. It is advised that industry in NSW take note of the recommendations contained in the Qld Department of Mines safety alert.

Copies of information outlined above can be obtained from the Department's Steve Stewart on:

Phone: (02) 9901 8413

Fax: (02) 9901 8584

Email: stewart@minerals.nsw.gov.au

New OH&S Act 2000

The Occupational Health and Safety Act 2000, was passed by both Houses of Parliament in June this year. The OH&S Act 2000 applies to mines similarly to the 1983 Act (provisions relating to inspectors continuing to be an exception). The new Act is substantially a restructure and plain English re-write of the 1983 Act. ■

PAMPHLET ON INVESTIGATION UNIT

The Department's Investigation Unit is believed to be the first of its kind in Australia, having commenced operation on 30 July 1999. It is an autonomous Unit, established within the NSW Department of Mineral Resources for the purpose of determining the causes and circumstances of a mine accident or incident and for making recommendations for improving mine safety.

The Investigation Unit is responsible for investigating all fatal accidents, and other accidents deemed to be prescribed matters.

To effectively communicate the Investigation Unit's aims and objectives with all stakeholders, an information brochure on the Unit has been released.

The brochure is available from the Department of Mineral Resources and can also be downloaded from the Department's web site <www.minerals.nsw.gov.au>. The brochure should serve as a general reference point for all industry and other stakeholders.

For further information, contact Stede Coundouris, Investigation Unit Manager
Phone: (02) 9649 8959
Fax: (02) 9649 5631
E-mail: coundous@minerals.nsw.gov.au ■



The Department's process of response in the event of an accident or serious incident

MINING EVENTS AUGUST-NOVEMBER 2000

SEPTEMBER 3-8

Minesafe International 2000
Venue: Perth
Contact: www.minerals.asn.au/minesafe
Ph: (08) 9325 2955

SEPTEMBER 19-22

Mining 2000 International Convention and Trade Exhibition
Venue: Melbourne
Contact: www.mining2000.com.au
Ph: (08) 9485 1166

SEPTEMBER 30-1 OCTOBER

2000 Mining Industry Skills Expo and Training Awards
Venue: Lismore
Contact: www.qmitab.com.au
Ph: (07) 3852 3911

OCTOBER 9-12

Minexpo International 2000
Venue: Las Vegas
Contact: kboscia@nma.org
Ph: 202 463 2611

OCTOBER 18-20

Goldfields Mining Expo
Venue: Kalgoorlie
Contact: www.gmexpo.com.au
Ph: (08) 9021 2970

OCTOBER 29-2 NOVEMBER

AusIMM's Massmin 2000
Venue: Brisbane
Contact: www.jkmrc.uq.edu.au
Ph: (07) 3365 5888

NOVEMBER 3-4

Fill and Mass Mining
Venue: Brisbane
Contact: www.acg.uwa.edu.au
Ph: (08) 9380 3300

NOVEMBER 8

DMR Electrical Engineering Safety Seminar
Venue: Penrith
Contact: www.minerals.nsw.gov.au
Ph: (02) 9901 8413

NOVEMBER 13-16

Australian Coal Preparation Conference and Exhibition
Venue: Nelson Bay
Ph: (02) 4961 2201

SAFETY PUBLICATIONS

No.	Title	Issued	Cost
MDG 3004 SR2000/2	Strain and Sprain Injury Claims in Surface Coal Operations Guidelines for Safe Mining	April 2000 Currently being reprinted; available from late September 2000	\$25.00
	Safety Management Plan Workbook	Currently being reprinted; available from late September 2000	

Where indicated, publications can be downloaded from the Department's web site free of charge <www.minerals.nsw.gov.au>.

**To obtain copies of safety publications, contact the Department's Information Counter:
Phone: (02) 9901 8269 Fax: (02) 9901 8247 Email: maniakak@minerals.nsw.gov.au**

DEPARTMENTAL CONTACTS

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Ph: (02) 9901 8888
Fax: (02) 9901 8777

ARMIDALE

Ph: (02) 6770 2100
Fax: (02) 6770 2121

BROKEN HILL

Ph: (08) 8080 0620
Fax: (08) 8087 8005

COBAR

Ph: (02) 6836 4392
Fax: (02) 6836 4395

GATESHEAD

Ph: (02) 4942 2300
Fax: (02) 4942 2323

LIDCOMBE

Environmental Geochemistry, Lidcombe

Ph: (02) 9646 1344
Fax: (02) 9749 1405

Mine Safety Technical Services
Assessment and Advice, Lidcombe

Ph: (02) 9646 1644
Fax: (02) 9646 3224

Specialist Services and
Applied Research, Lidcombe
Investigation Unit, Lidcombe

Ph: (02) 9649 5266
Fax: (02) 9646 3224
Ph: (02) 9649 8959
Fax: (02) 9649 5631

LIGHTNING RIDGE

Ph: (02) 6829 0678
Fax: (02) 6829 0825

LITHGOW

Ph: (02) 6351 3052
Fax: (02) 6352 3876

LONDONDERRY

Core Library

Ph: (02) 4777 4316
Fax: (02) 4777 4397

ORANGE

Ph: (02) 6360 8305
Fax: (02) 6360 8344

SINGLETON

(Inspectors) Ph: (02) 6572 1899
(Geology) Ph: (02) 6572 4200
Fax: (02) 6572 1201

WOLLONGONG

Ph: (02) 4227 1699
Fax: (02) 4226 3851

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