



NSW mine safety update

Promoting safety in the NSW mining industry

Public comment sought on MHS Regulation 2007

The NSW Government is seeking public comment on new legislation developed to protect the health, safety and welfare of people working in the NSW metalliferous, extractive and opal mining industries.

Industry stakeholders are encouraged to participate in the consultation process by having a say on how the draft *Mine Health and Safety Regulation 2007* will apply to the mining sector.

The sector is a major contributor to the NSW economy, directly employing more than 5400 people and is forecast to generate more than \$4.2 billion in production value during 2006-07. Metallic and industrial minerals, construction materials and gemstones, including opals, are mined by the sector.

"By introducing new mining industry safety laws the Government is aiming to supplement the *Occupational Health and Safety Act 2000 and Regulation 2001*, which is the primary legislation regulating safety in NSW workplaces," NSW Minister for Mineral Resources Ian Macdonald said.

"The new laws address risks to health and safety that are specific to the mining industry and build on previous legislation."

The MHS Regulation 2007 will support the *Mine Health and Safety Act 2004*. The *Mines Inspection Act 1901* and *Mines Inspection General Rule 2000* currently regulate safety in the mining sector and will be repealed upon commencement of the new legislation.

The MHS Regulation 2007 supplements the *Occupational Health and Safety Regulation 2001*. The OHS Regulation 2001 sets out safety measures for risks common across all industries, including the mining industry. The MHS Regulation 2007 sets out safety measures for risks that are particular to the mining industry.

The OHS Regulation 2001 will apply to mines in the manner described in the *Explanatory Paper: How will the Occupational Health and Safety Regulation 2001 apply to mines?*

Comment is also being sought on a proposal to



Photo: Jai McDermott

Innovation Awards focus on safety at OHS Conference

One of the highlights of the 2007 NSW Minerals Industry OHS Conference at Leura during May was the annual Safety Innovation awards. Celebrating their victory as the overall winner with NSW Minerals Council chief executive officer Dr Nikki Williams (second from left) are Centennial Coal - Myuna representatives Steve Screen (operator), Bill Grundy (operator) and Terry O'Brien (mine manager).

Turn to pages 6 and 7 for more on the OHS Conference

provide for the registration of powered winding systems under the OHS Regulation 2001.

A Public Comment Package is available including the following four documents:

- Draft Mine Health and Safety Regulation 2007
- Regulatory Impact Statement on Mine Health and Safety Regulation 2007
- Guide to making public comment on the draft Mine Health and Safety Regulation 2007
- Explanatory paper: How will the Occupational Health and Safety Regulation 2001 apply to mines?

The documents can be accessed online at

www.dpi.nsw.gov.au/minerals/safety/legislation/mines or by telephoning NSW DPI on 02 4931 6632.

Submissions should be directed to:
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 Mine Safety Performance
 NSW Department of Primary Industries
 PO Box 344
 Hunter Region Mail Centre NSW 2310
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 Email: mine.safety@dpi.nsw.gov.au

Submissions close at 5pm Friday 28 September 2007.



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

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Editors please note: any articles in this issue of NSW Mine Safety Update can be reproduced with suitable acknowledgement of their source.

Information provided in this newsletter to promote the enhancement of the safety culture of NSW mining and to alert a wide range of people to potential risks and to potential risk controls. Each site must manage its own risk according to its own hazard identification, risk assessment, control systems and monitoring process. Whereas all care is taken in producing NSW Mine Safety Update, NSW Department of Primary Industries accepts no responsibility for accuracy of information supplied. Inclusion of any product, service or company in NSW Mine Safety Update does not imply NSW Government or NSW Department of Primary Industries endorsement.



The Coal Competence Board comprises (front) Helen Parker (secretary), Gavin Taylor (NSW Minerals Council), John Maitland (Chairman), Robert Gibbons (independent member); (back) Ian Murray (CFMEU), Dave Mellows (NSW Minerals Council), Rod Morrison (NSW Department of Primary Industries), John McKendry (independent member), Keith Shaw (CFMEU). Absent is Rob Regan (NSW Department of Primary Industries).

NSW Coal Competence Board

The Coal Competence Board has been created to ensure that people employed in the NSW coal mining industry are sufficiently competent to work safely. Competency is a key factor for the ongoing health and safety of mining workers.

The new board was constituted under section 130 of the *Coal Mine Health and Safety Act 2002*. The board will advise the Minister for Mineral Resources on relevant issues as well as oversee the development of health and safety standards and the assessment of competencies.

The board comprises:

- the Chairperson - John Maitland
- two independent representatives with expertise in the development and assessment of competence - Robert Gibbons and John McKendry
- two representatives from NSW DPI - Director of Mine Safety Operations Robert Regan and Director of Mine Safety Performance Rod Morrison
- two representatives from the NSW Minerals Council – Centennial Coal General Manager Southern Operations Gavin Taylor and XStrata Coal NSW Group Safety Manager David Mellows
- two union representatives – CFMEU President Northern District Ian Murray and CFMEU District Check Inspector Keith Shaw.

The new Coal Competence Board has assumed the role of the former Coal Mining Qualifications Board, however the existing Examinations Boards will continue to operate. During the transition period a quorum of board representatives was established to ensure that existing certificate of competency examinations were not disrupted. All examinations processes will continue seamlessly and certificates of competency will continue to be issued to candidates who have been assessed as competent.

The Coal Competence Board will play a significant role in ensuring a high level of competency and improved health and safety standards within the coal mining industry. It will be considering a number of key issues during the coming months including:

- Developing partnerships and relationships
- Adapting existing written exam assessments to become competency based by registered training organisations (RTOs)
- Identifying additional tasks that should be competency assessed
- Introducing a maintenance system for competencies
- Development/control of competencies by an industry training board
- Adoption of competencies from other national training packages
- Establishing accreditation systems for national training providers
- Formation of occupational associations to qualify and set standards for mine managers and officials.

Health and safety action plan for industry

The Mine Safety Advisory Council, made up of employers, unions and the NSW Department of Primary Industries, recently endorsed the NSW Mining Industry Health and Safety Action Plan.

This document is the mining industries' response to the NSW Government's 2005 Workplace Safety Summit and commits the mining industry to meet targets of reductions in both fatalities and serious injuries during the coming years.

This is aligned with the targets from the National Occupational Health and Safety Strategy 2002–2012.

Specifically, the Action Plan has reaffirmed the NSW Government's commitment to:

1. Reduce workplace fatalities by at least 20 per cent by 2012
2. Reduce the incidence of workplace injuries by at least 40 per cent by 2012.

The priority areas for the mining industry arising from the summit are:

1. Manual handling and musculoskeletal injuries
2. Unplanned movement of plant
3. Contractor safety
4. Vulnerable workers
5. Fatigue
6. Atmospheric contaminants.

Each priority area has an action plan with tangible tasks that need to be completed to fulfil industries' commitment to achieving the targets. Performance measures will monitor the implementation of these actions to ensure targets are being met.

Projects currently underway include:

- A profile development project: identifying the "real" issues within the mining industry for manual handling and musculoskeletal injuries, unplanned movement of plant, vulnerable workers and atmospheric contaminants
- Manual Handling and Musculoskeletal Disorders Project: which will develop guidance and manual handling good practice and manual handling and musculoskeletal risk management.
- Contractor Safety Project: which will devise a contractor selection tool. Industry guidance will also be compiled on good practice for contractor selection from use of the tool.



- Vulnerable workers case studies development: which will identify and develop case studies of good practice for vulnerable workers based on the groups of priority workers identified in the vulnerable workers profile.
- Examination of issues relating to airborne contaminants.

The Mine Safety Advisory Council will keep the NSW mining industry informed of the progress of these significant projects. The Action Plan is available online at:

www.dpi.nsw.gov.au/minerals/safety/consultation

Safety seminar presentations available for free download from website

A new section of the NSW DPI Mine Safety website has been created to publish presentations from NSW DPI seminars and conferences.

Presentations and papers are already available from the 2007 Plant Safety in the Mining Industry Seminar and the 2006 Coal Mine Health and Safety Act and Regulation Industry Information Seminars. There are also presentations from NSW DPI representatives at the 2007 NSW Minerals Council OHS Conference and general presentations on

mechanical and electrical engineering issues.

As more information is added to the new section, it will also become a valuable online facility for researching past presentations.

To check out what is already available, visit the NSW DPI website at:

www.dpi.nsw.gov.au/minerals/safety/publications/seminar-presentations

Passenger restraint devices and protection prevent serious injury and death

A recent rollover of a bulldozer working on a slope has highlighted the importance of wearing a seatbelt when operating any mobile plant.

On 26 May 2007 the operator of a Caterpillar D6 H bulldozer was constructing a berm across a slope of soft soil. The blade of the dozer struck a large hidden rock in the soil causing it to ride up on an angle and tip over onto its side, coming to rest on the operator's cabin. The cabin was fitted with a rollover protection (ROP) cabin which met AS2294 Earth Moving Machinery - Protective Structures.

The operator escaped uninjured as he was following the company policy of wearing seatbelts in all mobile plant. To reinforce the importance of this policy the company asked NSW DPI to facilitate a risk management workshop for company management and operators, using the incident as a case study.

The following points were emphasised:

- When operating mobile plant on mine sites there is a foreseeable risk of overturning
- In this instance the fitting of appropriate restraints and protective devices, clear direction as to their use and regular training successfully prevented an injury or fatality.

In early 2006 NSW DPI released the *Safety Bulletin SB06-01 Use of operator/Passenger Restraint and Protection Devices*, warning that the



Wearing a seatbelt helped protect a bulldozer driver from suffering serious injury or death when the vehicle rolled over while working on a slope. Fitting appropriate passenger restraints and protective devices should be considered for plant used at mines.

lack of fit-for-purpose mobile equipment, poor workplace practices and inappropriate management systems were contributing to an unacceptable number of incidents.

The bulletin reminded industry of its obligations under the *Occupational Health and Safety Act 2000* and the *Occupational Health and Safety Regulation 2001* to provide a workplace that is safe and without risks to health.

All mine sites were directed by the bulletin, as a matter of priority, to ensure appropriate seatbelts or restraints are fitted and worn. The bulletin also highlighted the need for the correct fitting of guarding to protect personnel and provision of appropriate overhead protection depending on the assessed operational risks.

Baker Report highlights failings in process safety

A report into the 2005 BP oil refinery explosion in Texas provides learnings for high-risk industries, such as mining. Fifteen people were killed by the explosion at the BP Texas City refinery.

The Report of the BP US Refineries Independent Safety Review Panel, otherwise known as the Baker Report, was released in January 2007. It found BP's senior management had failed to provide adequate safety planning and safety monitoring systems and had not promoted a process safety culture within the organisation. Basic process safety elements like hazard analysis, designing for safety, equipment maintenance and material verification were mostly overlooked in favour of personal safety measures.

While BP had publicly declared a 'no accidents, no harm' goal and showcased a declining injury rate, their focus on personal safety and reducing lost time injuries left the organisation exposed to a catastrophic event. Focusing on reduced lost time is misleading as the statistics can be manipulated through injury management strategies and do not include fatalities. The overall safety culture within the organisation was also found to be poor, with near misses a regular occurrence, hazard identification systems under-utilised due to mistrust and fear of retribution, and a lack of supervision and inconsistent discipline for incident reporting.

The Baker Report also concluded that the use of performance contracts, budget cuts and serious flaws in the process hazard

analysis contributed to the incident. Budget cuts of up to 25 per cent were ordered by senior management in 1999 and 2005, without analysing the impact on safety. This led to a reduced level of equipment maintenance and engineering resources.

The findings of the Baker Report were also reflected in the official report from the US Chemical Safety Board issued in March 2007.

The lack of a process safety culture had also previously been found as a key contributor during investigations into the Esso gas plant explosion at Longford, Victoria in 1998.

The most damning evidence of BP's failure to focus on process safety was provided in BP's own audits and safety culture reports. These had been largely ignored by BP's board and senior management before the incident. BP has now publicly acknowledged its previous shortcomings on process safety and is currently implementing the recommendations of the Baker Report. The company has also hired an independent expert to monitor its progress.

Mines should have an appropriate focus on process safety by encouraging vigilance and accurate reporting, fostering a positive safety culture, implementing and monitoring relevant process safety systems and procedures and committing sufficient resources to process safety activities.

A copy of the Baker Report can be found at www.bp.com

Take what you've learned back to workplace

Benefiting from the experience of others and taking what they have learned back to their workplaces was the challenge issued to delegates at the 17th annual NSW DPI Mechanical Engineering Safety Seminar during August.

A record attendance of almost 200 people attended the seminar, opened by NSW DPI Director of Mine Safety Operations Rob Regan. The seminar focus was on learning from the wealth of experience within the industry, while keeping up with emerging trends and staying at the forefront of engineering practices.

Innovative solutions to common mechanical problems and human factor issues were also addressed during a number of case studies from industry representatives. Many of these solutions were derived from previous or regularly occurring incidents, such as prevention of articulated truck rollovers, guarding large-scale conveyor operations and operator protective structures on mobile plant.

Understanding risk and workplace culture were identified as key challenges for the future of the industry, along with the ability to learn from past incidents. Jim Knowles

from the Jim Knowles Group advised that the key to overcoming human error is prevention and developing a learning culture, rather than viewing incidents as a culpability issue.

Fiona Inverarity from Truman Hoyle Lawyers urged attendees to attach a safety file to all high-risk equipment and obtain statements as soon as possible after an incident from everyone involved. This can provide crucial documentation during an incident investigation and also provide accurate evidence when defending against a prosecution.

Paul Hartcher from UGM Engineers provided a unique insight into his 30-year career in the mining industry and the changing roles of contractors. He also outlined the many benefits of developing strong employer/contractor relationships. An insight into the history of mining at Broken Hill was also provided by Bob Johnson, NSW DPI Inspector of Mechanical Engineering.

A selection of papers presented at the seminar are available for free download online at:

www.dpi.nsw.gov.au/minerals/safety/publications/seminar-presentations



Sharon Carvolth from Audit Services International discusses OHS management systems during her presentation to the Mechanical Engineering Safety Seminar.

National framework goal is to uniformly advance mine safety

The National Mine Safety Framework is an initiative of the Ministerial Council on Mineral Petroleum Resources. The goal of the framework is to achieve a uniform nationwide approach to mine safety.

The framework also aims to enhance industry confidence through a clear and unambiguous approach to mine safety issues across Australia, remove duplication of effort (thereby reducing the costs of compliance and administration at both industry and government levels) and provide an environment in which further innovation and improvement can be fostered collaboratively and cost effectively.

The NMSF is made up of seven core strategies:

- a consistent nationwide legislative framework
- competency support
- compliance support
- a consistently applied enforcement protocol
- effective data collection, management and analysis
- consistent approaches to consultation
- a strategic approach to mine safety and health research.

The framework and the core strategies were initially developed in 2002 by the Chief Inspectors of Mines, a subcommittee of the Ministerial Council. In 2005, a tripartite steering group was established to further develop and guide the core strategies. It consists of

representatives from the workforce, industry and state, territory and federal governments. The steering group has already developed three of the core strategies through:

- an Overarching Principles and Key Features document that identifies broad legislative principles and establishes consistency, which all jurisdictions will be asked to implement
- a Consultation Protocol that ensures effective consultation between stakeholders at the workplace, which all jurisdictions will be asked to legislate
- a National Data Set that identifies safety and health statistics in order to ensure consistency in data collection and analysis, which all jurisdictions will be asked to collect.

A public consultation program was recently held on the three strategies to obtain input and comment from the industry. It involved an online forum, written submissions and a series of workshops.

The feedback obtained through this process is now being considered by the steering group to determine the key and recurring themes. A summary of these themes will be available in September 2007 from **www.industry.gov.au**

The steering group will then make final recommendations to the Ministerial Council on the implementation of the initial strategies, before focusing on the development of the four remaining strategies.

Safety Innovation Awards recognise excellence in the pursuit of improved OHS

The NSW Minerals Council Mine Safety Innovation of the Year Award for 2007 was recently won by Centennial Coal Myuna for its Hydraulic Advancing Temporary Support (HATS) System.

The system is designed to eliminate the risk of injury from roof collapse in longwall mining, by removing the need for mineworkers to be exposed to unsupported roof areas when carrying out repairs or maintenance. This is one of the greatest physical hazards associated with underground mining.

Centennial Myuna mine operator Bill Grundy said the award was "a testament to Centennial's safety commitment, from the management to the coal face".

"We would like to thank Centennial for their support and ongoing commitment to their workforce," Mr Grundy said.

NSWMC chief executive officer Dr Nikki Williams said the Safety Innovation Awards recognised excellence in the pursuit of new and better ways to improve OHS in the workplace.

"The commitment of everyone in the industry, from shop-floor employees to senior management executives, to encourage innovation and raise safety standards within the NSW mining industry has been critical to forging Australia's reputation as the world-leader in the area," Dr Williams said.

Centennial Coal Myuna's winning entry was selected from a field of 10 finalists, which had been short-listed from more than 30 entries from throughout the NSW minerals industry.

Other award winners included Xstrata Coal's Beltana mine, which received the Highly Commended Award for the development of a shuttle car tyre handler, while Xstrata United Collieries won the Commended Award. Xstrata's Ulan Underground Mine won the People's Choice Award.

For more information go to www.nswmin.com.au



Innovation Awards People's Choice winner Xstrata Coal NSW - Ulan Coal Mine representatives Craig Underwood and James Wormald with NSW Minerals Council chief executive officer Dr Nikki Williams.



Professor Jim Joy from the Minerals Industry Safety and Health Centre, Queensland and NSW DPI Director Mine Safety Operations Rob Regan help judge the Safety Innovation Awards.

Photos: Jai McDermott



Former Wallabies captain Nick Farr-Jones shares his views on leadership at the OHS Conference.



Radio announcer, author and former Wallabies player Peter Fitzsimons moderates an interesting and thought-provoking panel discussion with mine workers about contemporary safety issues in the workplace.

Delegates undertake the mission possible

Delegates at the 2007 NSW Minerals Industry OHS Conference at Leura in May were challenged to undertake a 'mission possible' of zero harm in the state's mining industry.

NSW Minister for Primary Industries Ian Macdonald MLC opened the conference and acknowledged that while safety performance had improved markedly since 1999, there was still "more work to be done" by Government and industry.

Mr Macdonald told conference delegates there had been a significant drop in fatality rates and a downward trend in all major performance measures, and that this had been achieved in a time of record production levels and a substantial increase in the use of contractors.

He highlighted initiatives that the Government has undertaken to further improve safety performance, including implementing the recommendations of the Wran Mine Safety Review, strengthening the Mine Safety Advisory Council, the Digging Deeper consultancy project into key issues such as fatigue and OHS management systems, the Board of Inquiry into enforcement and the legislative reform program across all

mining sectors.

A number of innovations were adopted at the OHS Conference, providing an opportunity for interactive participation.

A panel discussion was held with 'shop floor' workers and facilitated by former Australian Test rugby union player Peter Fitzsimons. The session involved real-life scenarios being put to the panel, with added participation from the audience.

The scenarios included questions like "how does the 'she'll be right mate' code of the Australian male work against safety procedures" and "how does the 'you don't dob in your mate' philosophy work in coal mine culture". The candid responses covered the dominance of the 'tough guy' culture in the mining industry and how this impacts on safety, the importance of avoiding adversarial relationships between management and workers, and the gap between young and 'youth challenged' workers.

Another interactive format was used during a court simulation by Sparke Helmore Lawyers, providing delegates with a glimpse into a mock court proceeding centred on a fatigue-related safety incident.



NSW Minister for Mineral Resources Ian Macdonald MLC opens the 2007 NSW Minerals Industry OHS Conference at Leura.

Photos: Jai McDermott

Fatigue and fitness for work come under the microscope

Fatigue and fitness for work were major talking points at the 2007 NSW Minerals Industry OHS Conference.

Keynote speaker Professor Till Roenneberg has studied the effects of prolonged exposure to artificial light and shiftwork on the human body clock. He showed how the brain and the body clock are regulated by light and if people don't sleep within their normal patterns, they can create difficulties for their body.

Imbalances in the amount of light and sleep received can lead specifically to depression, fatigue, addiction, cancers, reproduction and obesity problems, or an overall decline in both mental and physical health. This is a serious concern for the mining industry where many people are employed underground and/or in shiftwork.

Corporate wellness programs are another way of improving fatigue and fitness for work within the industry. Shivaunn Conn from Corporate Bodies International and Annette Zeman from Corporate Nutrition Solutions both outlined the impact wellness programs could have in helping reduce fatalities, injuries and chronic disease among workers.

A number of successful workplace wellness programs were showcased during the conference, including Newcrest's Cadia Valley operations. The program was implemented in response to increasing injury rates among sedentary occupations, such as mobile plant operators, and has been in place for more than two years.



Paul Hagarty from Ravensworth Operations talks about the mine's sleep study.

Participants in the program have reported an average 21% improvement in perceived wellness, while lower back injuries have fallen 34%, neck injuries 60% and upper back injuries 65%.

A recently published study undertaken by researchers at Duke University Medical Centre in the US has confirmed the link between health and injury, showing a clear relationship between body mass index and compensation claims. The researchers believe the study lends support to the emergence of company wellness programs, as they not only improve health, they also have a financial benefit.

Mine safety course chalks up 6000 attendees

More than 6000 people have now attended the Lightning Ridge Opal Miners Safety Awareness Course, run by the NSW Department of Primary Industries.

Trevor Currell from Wingham became the 6000th attendee when he participated in the course in mid-June. Rob Regan, NSW DPI Chief Inspector of Mines and Director Mine Safety Operations, presented him with a special certificate to mark the occasion.

The course is held over a day and a half and completion of the course allows participants to register an opal mineral claim. A claim cannot be registered unless the course has been completed, even by those with many years' mining experience.

According to Mr Regan, the courses are widely credited with the dramatic improvement in safety on the opal fields, with no fatalities recorded during the past decade. There had been an average of one death a year during the previous 10 years. "The Opal Miners Safety Awareness Course is a shining example of how Government and industry working together can improve mine safety. The safety performance of the opal mining industry prior to this course was unacceptable," Mr Regan said.

"However, 10 years without a fatality and a significant reduction in serious injuries is



Celebrating Trevor Currell's recognition as the 6000th attendee at the Lightning Ridge Safety Awareness Course are Danny Hatcher (president Lightning Ridge Miners Association), Bruce Kremmer (retired Senior Inspector of Mines and course presenter), Rob Regan (Director Mine Safety Operations, DPI), Trevor Currell, Patrick Fletcher (president GGSMA), Lesley Baker (secretary GGSMA) and course presenters Janet Town (Mine Safety Officer, DPI) and Jim McMahon (Mine Safety Officer, DPI).

a tribute not only to the course but to the presenters, the Department and the opal mining industry."

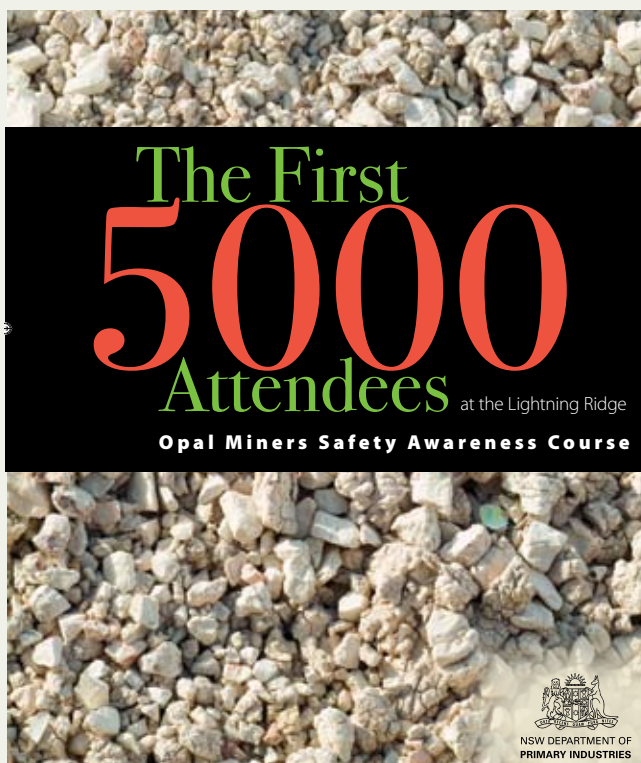
Some of the subjects covered in the course are ground support, ventilation, gases, dust and noise, electrical and underground surveying.

The course is attended by full-time miners, hobby miners and people without mining experience. While some are total beginners,

others have often mined in other areas, such as coal, and want to have their own opal mine. Many attendees come from as far away as Sydney, Melbourne, Brisbane and the Australian Capital Territory.

Attendance at the course was initially voluntary, but was made compulsory for all new claim holders in 1997.

The course is also held in White Cliffs and South Australia.



Book chronicles the success of opal mining safety initiative

A book chronicling the history of the highly successful Lightning Ridge Opal Miners Safety Awareness Course has been released by the NSW Department of Primary Industries.

The First 5000 Attendees at the Lightning Ridge Opal Miners Safety Awareness Course documents the establishment and early years of the course.

It was recently launched by NSW DPI Chief Inspector of Mines and Director Mine Safety Operations Rob Regan during a special session of the course that also celebrated the 6000th attendee.

The book was written by former Senior Inspector of Mines and course co-presenter Bruce Kremmer, with the assistance of NSW DPI Mine Safety and Titles staff.

The idea to write a book about the popular course was driven by its undeniable success. During the book's launch, the Opal Miners Safety Awareness Course was acknowledged as the reason for the dramatic improvement in safety on the Lightning Ridge opal fields during the past decade. The opal mining sector has been fatality free for the past 10 years.

SB07-03 Unplanned movement of plant

A recent incident at a Queensland coal mine has again highlighted the serious issue of unplanned movement of plant. In the Queensland incident the isolator on a shuttle car had been turned off. When the isolator was turned on and the pump start switch turned to start, the car lunged forward approximately half a metre. Fortunately no one was put at risk in the incident. The Queensland Department of Mines and Energy – Mines Inspectorate released Safety Alert No 162 (www.nrw.qld.gov.au/mines/safety_health.html) on the incident on 24 May 2007. All mines should review Safety Alert SA06-01 Dangerous Unplanned Movements - Shuttle Cars and Continuous Miners and Safety Alert SA06-12 Maintenance of Safety Critical Systems - Braking, Steering and Warning Systems released by NSW DPI in 2006. These Safety Alerts can be accessed at www.dpi.nsw.gov.au/minerals/safety/safety-alerts. Mines should also review Queensland Safety Alert No 162 Shuttle Car Lunged Forward. Consideration of these alerts is necessary to prevent future occurrences of like incidences.

SB07-04 Safe use of electric welders

There has recently been an Industrial Relations Court of NSW hearing into the death of a person while using an electric welder and continued occurrences of poor work practices and welding equipment found in poor condition at mine sites. Testing during an investigation identified "...the presence of dampness or perspiration on clothing resulted in the welding task falling into a high-risk category of welding". AS 1674.2: 2007 - Electrical 'Safety in Welding and Allied Processes' identifies that "...where there is dampness or perspiration, 25 volt AC may be enough to give a fatal electric shock ...". If the welding equipment is in poor condition or the work practices are deficient, the risk of electrocution is also greatly increased. All mines should review their welding equipment, processes and procedures and ensure that: DC welders are used in preference to AC welders; welding machines, welding cables and welding appliances are suitable for the environment in which they are used; voltage reduction devices (VRDs) or equivalent devices are provided, used and maintained; welding machines, welding cables and welding appliances are in good condition; welding machines, welding cables and welding appliances are regularly checked by a competent person and defective equipment is restored to a fit-for-purpose state before it is re-used; procedures and processes comply with AS 1674.2 'Safety in welding and allied processes – Electrical' as a minimum; they have a risk assessment checklist and procedures for welding work, including the identification of different welding environments and the required risk controls for the type of environment; employees and contractors who carry out or supervise welding work are trained in the use of these checklists and procedures; the use of welding mats and other insulated mediums; procedures are in place for identifying when to change work clothing due to dampness / perspiration and dry clothing and welding PPE is always available.

SB07-05 Electric shocks

The number of electric shocks at voltages above 50 volts AC at underground coal operations has risen during the past three years. The Maximum Reasonable Consequence of contact with electricity above 50 volts AC is death of at least one person. (This is clearly demonstrated by figure 14 in AS 60479.1 Effects of current on human beings and livestock - General aspects). It is unacceptable

that workers receive electric shocks while going about their normal duties. The engineering risk controls for preventing electric shocks are well known and they are supported by well-known procedural risk controls and requirements that only electrically qualified people work on electrical equipment and installations. If all of these are implemented and well managed, electric shocks should be prevented. When a person receives an electric shock it indicates that there are systemic failures in the management of electrical engineering safety. Coal operators should review their mine site risk assessments and ensure that electrical energy has been identified as a hazard; their Mine Health and Safety Management System to ensure that it provides for the prevention of electric shock; the adequacy and reliability of the risk controls that are implemented for preventing electric shock and their management structure to ensure there is sufficient electrical engineering supervision to manage programs for the prevention of electric shock.



SB07-06 Electrical fuse safety

A number of incidents have occurred where fuses have failed, resulting in arc blast damage to electrical enclosures in a motor control centre. The latest incident involved a fuse-type 500NH3G-690 OEZ fuse. Arc blast is a known source of serious injury or death. Fuses are used in electrical circuits to disconnect faulty circuits (short circuits) to prevent injury to people and equipment damage. They are designed to contain the arc energy within the fuse when used within their rating. They are widely used in the mining and other industries. On 27 June 2006 an electrical fuse link supplier used the Australian Product Recalls system to recall fuses - some part numbers included NHG3-630 to NH63-315 (see www.recalls.gov.au).

continued next page

Safety Alerts and Safety Bulletins

NSW DPI issues Safety Alerts following the occurrence of an event such as a fatal accident, dangerous occurrence or incident which is considered to be of significance to the industry, with the aim of preventing a similar occurrence. Safety Bulletins are also issued by NSW DPI. Like Safety Alerts, they contain information relating to safety issues but are not directly linked to a specific incident.

If you would like to receive an email copy of Safety Alerts and Safety Bulletins, email your contact details to mine.safetyalert@dpi.nsw.gov.au

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Since that date a second electrical fuse link supplier has been required to recall fuse links identified as 'Bussman OEZ Czech catalogue 630NH3G-690' fuse links. The failure mode of the catalogue 630NH3G-690 fuse links was "under certain overload conditions the integrity of the fuse ceramic body and metal end caps can rupture ...". All mines should review all fuses they have in service and all spare fuses at the site. If the above fuses are in use, the mine must contact the fuse supplier for advice, assess the risks and take immediate action to control the risks. Where these fuses are in use, it may be necessary to prevent access to the associated switchgear locations while ever the switchgear is energised, until suitable replacement fuses are installed. Known suppliers of the above fuses are Alstom Industrial Products Limited (fax 1300 550 187) and Cooper Electrical Australia Pty Limited (fax 02 9725 5318). Other suppliers may supply this type of fuse under an alternative name.

SB07-07 Strata support failure

An underground mine in Queensland has identified numerous strata support roof bolts that appear to have manufacturing defects. The Queensland Department of Mines and Energy – Mines Inspectorate released Safety Alert No 164 Strata support failure (www.nrw.qld.gov.au/mines/inspectorate/safety_alerts.html) on the incident on 8 June 2007. All underground mines should review Queensland Safety Alert No 164 Strata support failure and thoroughly check their strata support bolts for manufacturing defects that may inhibit correct installation.

SB07-08 Portable power tools

There have been a number of electric shock incidents involving Class II (Double insulated) 240 volt alternating current hand-held power tools. Contributing factors have included the work environment not appropriate for the use of 240 volt alternating current power tools and associated leads (or the work environment changing) with a



consequent ingress of water into the tool, use of damaged tools not adhering to the tool manufacturer's safety instructions, poorly maintained associated flexible leads in poor condition, associated power outlets not correctly IP rated and deficient contractor management practices. It is recommended that all mines should consider reviewing the use of 240 volt alternating current hand-held power tools at their site (as part of that review, the mine should assess of all work environments where these power tools may be used to determine the suitability of the tool for the environment - Note: tools in good condition can still be a source of electric shock when used incorrectly or in the wrong environment), applying the hierarchy of risk controls and substitute 240 volt alternating current power tools with extra-low voltage battery-powered tools or other less-hazardous energy sources, incorporating the manufacturer's instructions in safe work procedures, implementing an inspection and testing regime for hand-held power tools, associated leads and power outlets that are consistent with relevant Australian Standards and other publications, implementing a contractor management plan that includes appropriate equipment specifications, inspections and tests and an appropriate level of supervision by mine management.

Find all Safety Alerts at: www.dpi.nsw.gov.au/minerals/safety/safety-alerts

Wheel separation is a risk for vehicles carrying explosives

A Safety Alert was issued recently by the Queensland Department of Mines and Energy in response to several incidents during the past 12 months where wheels have separated from vehicles carrying explosives.

Due to the nature of the products being carried, this could potentially cause serious damage or injury through an accident with other road users, or possibly an explosion due to impact, friction, shock or heat.

The most common reasons for wheels to separate from vehicles are loose or absent wheel nuts. Loose wheel nuts are usually due to undertorquing, overtorquing and/or improper mating surfaces.

Both undertorquing and overtorquing are common when using air impact wrenches. Many people also purposely overtorque, believing 'more is better'. However, this can reduce the clamping force, cause cracked, seized, cross-threaded or loose nuts, and increase the

frequency of stud failure.

Improper mating surfaces include those that are damaged, such as worn or elongated bolt holes, or contaminated by excess dirt, sand, rust, metal burrs or paint.

Of particular concern recently was an incident that occurred shortly after maintenance on the vehicle, where the wheels had been removed and replaced.

The alert reminded industry to always follow manufacturer's standards when servicing or replacing wheels on explosives vehicles. It also urged licence holders to review their safety management systems, create checklists for post-maintenance checks and to test the wheels on all recently maintained vehicles.

For more information and a full list of recommendations visit:

www.nrw.qld.gov.au/mines/explosives/safety_alerts



John Skinner from Pilz makes a point during his presentation at the Plant Safety Seminar.

Seminar focuses on plant safety

'Nothing can be safely ignored' was a key message of the NSW DPI Plant Safety in the Mining Industry seminar held at Penrith during May.

This was highlighted by Chris Ellicott of Jim Knowles Group and Fiona Inverarity of Truman Hoyle Lawyers, who both advised delegates to read all available information, especially Safety Alerts, as being unaware of a reported safety issue is not a legal defence.

Gerry Gibb of Safetywise canvassed the importance of considering human factors when designing and modifying plant. By removing the probability of human error, the risk of an accident occurring can be greatly reduced.

If equipment is poorly designed or modified it can often make tasks difficult, allow for unplanned usage, require unusual maintenance, or lead to the equipment being extended beyond its limits.

Peter Standish from SP Solutions also outlined the dangers involved when using equipment in a way that it was not designed for. This has the potential to create significant safety hazards if risks have not been assessed.

Relevant information on new and updated safety standards was provided by John Skinner from Pilz and Marcus Punch from Connell Hatch. Officers from NSW DPI also gave presentations on new plant registration and gazettal requirements, licensing requirements for explosion-protected and cable repairs, risk management information that should be generated for all plant and examples of common plant safety issues.

A selection of papers presented at the seminar are available for download at:

www.dpi.nsw.gov.au/minerals/safety/publications/seminar-presentations

Collaborative effort to share safety knowledge

The NSW Regional Electrical Engineering Safety Seminars are a collaborative effort between NSW DPI, western NSW mines and suppliers to the industry and provide a unique opportunity for industry representatives to work together and share vital information.

The joint seminars aim to improve the quality of electrical engineering safety work practices and equipment in the NSW mining industry. They are held quarterly and are each hosted in turn by participants.

The most recent seminar was hosted by Perilya Broken Hill in early June, and co-sponsored by ITT Flygt (Craig Stone), Toshiba (John Worley and Michael Butchers) and Shannon Electrics (Kevin Taylor). More than 50 industry representatives attended. NSW DPI and Perilya wishes to thank all who participated in the June seminar for helping to make the day an outstanding success, especially those who travelled long distances. The commitment of everyone involved ensures this important joint venture continues, with clear benefits for the whole industry.

For further information contact Stan Maginnis (NSW DPI Inspector Electrical Engineering) on 02 6350 7891 or email stan.maginnis@dpi.nsw.gov.au

Proper implementation vital for effective safety management systems

Mine workers can be unnecessarily exposed to the risk of serious injury and death if safety systems are ineffectively implemented. A recent court judgement found that the most carefully planned safety management system will be ineffective if it is not properly communicated, documented and regularly monitored, or if workers are not competent to carry out the task safely.

Perilya Broken Hill Pty Ltd pleaded guilty to a breach of s8 (1) of the *Occupational Health and Safety Act 2000* in the Industrial Court of NSW after a fatal winder cage incident in 2002. The fatality occurred when Darren Andrew was crushed in a nip point while operating the cage.

The court heard that general confusion existed among workers at Perilya Broken Hill regarding who was authorised to operate the cage and there was no published list of authorised operators, so the cage driver was unable to check if an operator was authorised or not. Many workers incorrectly believed they were authorised after signing off on the safe work procedure.

The court was also told that the operating systems of the cage had previously been reviewed following two other minor incidents, with the intention that only authorised people should operate the cage. However, the outcomes of the review were ineffective as they did not clarify who was authorised to operate the cage. At the time of the incident, Darren Andrew was not authorised or competent to operate the cage but was required to do so in order to travel back to his worksite.

The court found that Perilya Broken Hill Pty Ltd had failed to ensure the premises were safe and without risks to health, failed to have in place an appropriate system to ensure only competent employees could operate the cage and failed to instruct and inform employees about who was competent to operate the cage.

During its deliberations, the court took into account Perilya's early guilty plea and subsequent efforts after the fatality to redesign the cage, publish lists of authorised operators and effectively re-design the safe work procedures. The company was fined \$95,000 and ordered to pay the Prosecutor's costs. A company director was also found guilty but no conviction was recorded. The director had previously agreed to pay the prosecutor's costs of \$45,000.

CALENDAR OF EVENTS

Mine Operators Workshops, held regularly, Morilla Street, Lightning Ridge, contact Janet Town, DPI, 02 6829 0678

Mine Safety Awareness Course, held regularly, Lightning Ridge Bowling Club, contact Janet Town, DPI, 02 6829 0678

Hunter Valley Underground Mine Mechanical Engineers Meeting, Mine Safety Technology Centre at Thornton, held quarterly, contact Paul Drain, Mine Safety Officer, DPI (02) 4931 6652

Hunter Valley Opencut Mine Mechanical Engineers Meeting, Mine Safety Technology Centre at Thornton, held quarterly, contact Matt Willoughby, Mine Safety Officer DPI (02) 6571 8788

Southern & Western Coalfields Mechanical Engineers meeting, held quarterly, contact Graham Johnston, Mine Safety Officer, DPI (02) 4222 8307 or Wally Koppe, Inspector Mechanical Engineering, DPI (02) 4227 1699

Introduction to Safety Management Workshop for small mines and quarries, at various venues and dates throughout NSW, see NSW DPI website www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops for further details or contact Institute of Quarrying Australia (education@quarry.com.au)

Refining Your Safety Management Workshop for small mines and quarries, at various venues and dates throughout NSW, see NSW DPI website www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops for further details or contact Institute of Quarrying Australia (education@quarry.com.au)

Mechanical Safety Presentations to the Extractive Industries, closed workshop 'onsite', held periodically throughout the year as required. Generally workshops are not open to broader industry however if you would like more information please contact Angus McDouall, Inspector Mines, DPI (02) 6738 8509 or Paul Drain, Mine

Safety Officer, DPI (02) 4931 6652 (Nth Coast) or Matt Willoughby, Mine Safety Officer, DPI (02) 6572 1899 (Mid North Coast)

Hunter Valley Electrical Engineers meeting, held bi-monthly on the first Friday of the month — venues change for each meeting, contact Steve Bentham, Inspector Electrical Engineering DPI (02) 4931 6653 or Owen Barry, Inspector of Electrical Engineering (023) 6571 8708

Southern and Western Coalfields Electrical Engineers meeting, TestSafe, Londonderry, held quarterly (limited numbers), contact Bob Kennedy, Inspector of Electrical Engineering (02) 4222 8305 or 0438 467 992.

NSW DPI 17th Annual Electrical Engineering Safety Seminars, Penrith Panthers, 14 and 15 November, for further information contact Steve Bentham, Inspector of Electrical Engineering DPI on (02) 4931 6653 or Owen Barry, Inspector of Electrical Engineering DPI on 0418 618 337. Bookings email minesafety.seminars@dpi.nsw.gov.au

HIESN (Hunter Industry Electrical Safety Network) meeting, held monthly on the first Thursday of each month — venues change, contact Peter Henderson, Tomago Aluminium 0408 683 544

Western & Central Western NSW (Cobar, Broken Hill, Orange) Mine Electrical Engineer meeting, December, contact Stan Maginis, Inspector of Electrical Engineering, (02) 6350 7891 or 0417223 875

Remote Control Equipment Advisory Group meeting, invite required, held quarterly, contact John Waudby, Senior Inspector of Electrical Engineering, (02) 4931 6641 or 0418 295 656

MEMMES (Mining Electrical and Mining Mechanical Engineers Society of the IEAust) Meeting, held monthly, contact Peter Whipp, President 0427 425 798.

For more information go to: www.dpi.nsw.gov.au/minerals/safety/resources

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NSW Department of Primary Industries
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516 High Street, Maitland NSW 2320
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NSW Department of Primary Industries,
Earth Sciences Building (C2)
University of New England, Armidale NSW 2350
Phone: (02) 6738 8500, Fax: (02) 6772 8664

BROKEN HILL

Level 2, 32 Sulphide Street,
Broken Hill NSW 2880
(Note changed PO Box number)
(PO Box 696 Broken Hill NSW 2880)
Phone: (08) 8088 9300, Fax: (08) 8087 8005

COBAR

Government Offices, 62–64 Marshall Street,
Cobar NSW 2835
(PO Box 157 Cobar NSW 2835)
Phone: (02) 6836 6000, Fax: (02) 6836 4395

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Phone: (02) 6829 9200, Fax: (02) 6829 0825

LITHGOW

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Lithgow NSW 2790
(PO Box 69 Lithgow NSW 2790)
Phone: (02) 6350 7888, Fax: (02) 6352 3876

LONDONDERRY

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947–953 Londonderry Road,
Londonderry NSW 2753
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161 Kite Street, Orange 2800
(Locked Bag 21, Orange NSW 2800)
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After hours – emergency only – (02) 6360 5343



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