



NSW

# mine safety update

Promoting safety in the NSW mining industry

## Mine safety priority for new Minister

The safety and wellbeing of mine workers is on the agenda for the new Minister for Mineral Resources in New South Wales, Paul McLeay.

"I view safety as a major priority and I am committed to working with the mining industry to ensure it's a safe, prosperous and environmentally sustainable industry.

In taking up this portfolio I am meeting with stakeholders to understand the issues and challenges confronting safety in the mining industry".

Paul McLeay is also the Minister for Forest Resources, Minister for Ports and Waterways, and Minister for the Illawarra.

"I look forward to continue working with the Gillard Government, industry and unions to create a framework that ensures our mines are

safe and sustainable," Mr McLeay said.

NSW compares very favourably with other states and countries when it comes to overall safety performance.

"Despite our strong performance, there is more that can be done to improve safety. To further this, it's important to maintain constructive dialogue with industry stakeholders," Mr McLeay added.

"I am currently visiting and meeting with stakeholders across the state to ensure our mineral resources are mined safely and sustainably.

Co-existence within our communities is critically important to ensure our state continues to grow and prosper with the mining industry".



*The Hon. Paul McLeay MP, new Minister for Mineral and Forest Resources in NSW*

## 2010 OHS conference cracks the code

More than 450 delegates attended the 2010 NSW Minerals Industry OHS conference at Cypress Lakes Resort in the Hunter Valley from 3-5 May 2010. This year's theme "Communicating Safety – Cracking the Code" focused on how the industry communicates its health and safety messages.

The annual conference is one of the most well attended on the OHS calendar. The central focus of the conference, the prestigious Innovation Awards, are keenly contested by the industry.

The large number of entries vying for top honours was whittled down to 10 finalists by an expert panel. The high calibre of all entries demonstrates that the industry is committed to improving health and safety.

This year NSW Premier, Kristina Keneally presented the award winners at a gala awards dinner and spoke of the Government's commitment to the NSW minerals and extractives industry. The top honour went to Centennial Coal's Manning Colliery.

Mr Ian Macdonald, former NSW Minister for Mineral Resources, officially opened the conference telling the packed auditorium of the Government's support for OHS education and training and applauded the mining industry for genuinely seeking to improve OHS performance.

He congratulated the NSW Minerals Council on its commitment to hosting the annual OHS Conference and the Safety Innovation awards.

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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, Industry and Investment NSW 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 Industry and Investment NSW endorsement.



*From Left to Right Kevin Poynter (Inspector of Mines, NZ), Wayne Green (Mine Manager), Stuart Rabone (Mine Owner) and Mark Stephens at the Broken Hills Gold Mine in North Island, NZ.*

## Endeavour award

Mark Stephens, of Industry & Investment NSW is the recent recipient of a Federal Government sponsored Endeavour Award. Mark was awarded for his project on mine safety in New Zealand. The project involved the mutual exchange of information to benefit mine safety practices in both New Zealand and NSW. Mark spent two months in New Zealand holding discussions and visiting numerous mines and quarries during October and December 2009. The project was fully funded by the award.

The project's aim was to exchange information with the NZ Department of Labour which could assist in achieving continuous improvement in mine safety performance.

Information on risk management, educational workshops, investigations, auditing tools and enforcement policy were well received by the New Zealand Department of Labour. A number of Industry & Investment NSW publications were purchased with the view to helping New Zealand develop similar products.

Since Mark's return there has been an exchange of technical information with New Zealand. Inspectorate personnel have been invited to NSW to witness the standards of safety being employed in the NSW mining and extractives industry.

"The project was a great success. It was a rare opportunity to experience and to exchange information that could save lives and reduce the number of serious injuries as well as improve efficiencies in operating mines and quarries" Mark said.

The Endeavour Awards are administered by the Department of Education, Employment and Workplace Relations and are open to everybody. They aim to develop ongoing education, research and professional linkages and provide opportunities for individuals to increase their skills and global awareness.

Information on Endeavour Awards is available at:

[www.endeavour.deewr.gov.au](http://www.endeavour.deewr.gov.au)

# Project to develop non-technical skills

The NSW Mine Safety Advisory Council (MSAC) has commenced an important project to build the capacity of the NSW mining and extractives industry. The Associated Non-Technical Skills (ANTS) project aims to assist industry in improving key non-technical skills of the workforce.

ANTS are the cognitive, social and personal resource skills that complement technical skills and contribute to safe and efficient task performance. This initiative is targeting the key non-technical skills of:

- situation awareness;
- leadership;
- teamwork;
- communication, and;
- decision making.

The NSW mining and extractives industry has already embraced a range of initiatives to underpin the development of a world-leading OHS culture and practice. Under the umbrella of MSAC, the industry has developed a comprehensive world-leading OHS Culture Action Plan.

One of the key elements of the Action Plan to build this capacity

is to foster and promote the usefulness of ANTS. Competence in ANTS enables all who work in the industry to interact effectively. Research relating to incidents in high risk industry sectors such as aviation, medicine, oil and gas, and mining, indicates that the failure of work systems to produce the OHS outcomes often result from inadequacy of ANTS.

ANTS are one of MSAC's key tools for delivering the mining industry's 2009 CEO Summit Vision to build the capacity of the NSW mining and extractives industry.

A series of fact sheets have been developed to assist employers, unions, workers, contractors and the regulator to promote the use of ANTS within the industry.

The factsheets can be downloaded at:

[www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/ants](http://www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/ants)



## MSAC looks at culture change

A significant project on culture change sponsored by the Mine Safety Advisory Council is being undertaken by a consortium led by Shaw Idea Pty Ltd.

The project will develop the tools and programs to be used in achieving the industry's vision of world-leading OHS culture in the NSW mining and extractives industry.

Nine mine sites in NSW will be directly involved in the project and will have the opportunity to help create the NSW mining industry of the future.

The project will establish the current OHS culture of the industry. It will deliver self-assessment tools to enable mines to assess their own OHS culture and performance and will deliver a data collection methodology for ongoing use. It will also provide a model against which sites can assess their culture and OHS systems maturity and it will provide assistance to sites to build an OHS culture.

This is a significant project which will run until the end of the year and will provide the base for future industry development in OHS culture and systems.

The project builds on the outcomes of the CEO OHS Culture Change Summit in November 2008 that included a vision for OHS culture in the NSW mining and extractive industry in 10 years time. At that Summit, industry, unions and Government committed NSW to achieving a world-leading performance in health and safety.

The culture change project will use the CEO OHS Culture Summit Vision to establish the current OHS culture of the industry. Ultimately, the project will deliver a self-sustaining method for achieving and monitoring continuous improvement in OHS culture and practice to the NSW mining industry.

The project will also build the capacity of industry champions to foster continued OHS culture improvement within the industry and enable benchmarking into the future.

The consultancy project commenced in April 2010 and it is anticipated that the pilot interventions will begin in July 2010.

For further information you can contact Project Manager Heather Jackson on (02) 4931 6491 or by email at : [Heather.Jackson@industry.nsw.gov.au](mailto:Heather.Jackson@industry.nsw.gov.au)

# Competence Board meets with miners

The Metalliferous Mines and Extractive Industries Competence Board (MMEICB) is continuing to undertake consultation with the mining industry about its draft Action Plan.

The Board met with representatives from five major regional metalliferous mines during its February meeting at Cobar on 24 February 2010.

The feedback received during the consultation indicated strong support for the priorities identified in the Board's draft Action Plan.

These priorities include:

- the development of standards of competence for functions in the mining industry;
- the maintenance of competence of those people performing functions; and
- the development of standards for registered training organisations servicing the metalliferous mines and extractive industries.

Representatives from CSA Mines, Peak Gold Mines, Endeavor Mine, Tritton Mine and Perilya Mine met with the Board at Cobar. The Board will consider the feedback received as part of its consultation process before finalising the Action Plan.

The Board was established in 2008 following the introduction of the *Mine Health and Safety Act 2004* and advises the Minister



**Metalliferous Mines and Extractive Industries Competence Board members (back row, left to right) Danny Duke, Glenn Seton, Rob Regan, Greg Braes, Greg Goodsir, Leanne Parker, (front row) secretary Tony Linnane, chairman Peter Black and Coal Competence Board chairman John Maitland. (Photo by Mark Ingram, Cobar Age.)**

for Mineral Resources. It was established to improve mine safety performance by ensuring the competence of people to work safely in the NSW mining industry.

Peter Black OAM was appointed the inaugural Chairman and the Board has representation from the NSW Minerals Council, Cement Concrete and Aggregates Australia, the Australian Workers Union (AWU), the Construction Forestry Mining and Energy Union (CFMEU), people with expertise in the development and assessment of competence in the mining industry and senior officers from Mine Safety within Industry & Investment NSW.

## Release of Coal Audit Report

More than 290 audits were conducted by Industry and Investment NSW at coal mines across the State in the 12 months from January 2009 in response to recommendations from the 2004 Wran Mine Safety Review. This was part of the department's occupational health and safety audit program at coal operations in NSW.

The audit program assessed the legislative compliance of four key systems and plans that form part of the health and safety management system required under the *Coal Mine Health and Safety Act 2002* and *Coal Mine Health and Safety Regulation 2006*. The following systems and plans were included in the audit program:

- Health and Safety Management Systems
- Contractor Management Plans
- Electrical Engineering Management Plans
- Mechanical Engineering Management Plans.

The audit provides information which will allow evidence based policy and strategies to be devised by the Government to achieve improved compliance now, along with a baseline to assess improvement in legislative compliance over time.

The results of the audit program provide tangible evidence of areas where compliance with the legislation could be improved. This will see a cooperative approach between industry and mine safety inspectors to address areas of concern, both at an industry-wide level and for individual coal mines.

The results also show that many in the mining industry demonstrate commitment and innovation in developing and improving systems to manage the health and safety of mine workers and contractors.

A copy of the Report is available at:

**[www.dpi.nsw.gov.au/minerals/safety/publications/statistical-publications](http://www.dpi.nsw.gov.au/minerals/safety/publications/statistical-publications)**

# NSW and Queensland Boards cooperate

The NSW Coal Competence Board (CCB) has agreed to meet with the Queensland Board of Examiners on a regular basis as part of its ongoing commitment to people working in the NSW coal mining industry.

CCB Chairman John Maitland said the cooperation being shown by the two Boards will help achieve consistency, where possible, across the states.

The joint meetings will allow the sharing of information with regard to certificates of competence issued by both jurisdictions; competencies from the national training packages; the provision of training by registered training organisations; assessments; and the conduct of examinations.

At the last meeting held in Queensland, a range of issues of mutual interests were discussed including the Boards reaching agreement on

consistent qualification standards from the national training packages for each certificate of competence. The next joint meeting of the two Boards will be held in NSW.

The CCB comprises Chairman John Maitland; two employer representatives, Dave Mellows and Steve Bracken; two employee representatives, Ian Murray and Keith Shaw; two independent representatives, John McKendry and Bob Gibbons; and two officers from Industry & Investment NSW, Rob Regan and John Flint.

Information on the NSW Coal Competence Board is available from the Industry & Investment NSW website at:

[www.dpi.nsw.gov.au/minerals/safety/consultation/coal-competence-board](http://www.dpi.nsw.gov.au/minerals/safety/consultation/coal-competence-board)

# ANZEx Recognised Service Facilities Program

Dowding and Mills (Australia) has become the first recognised workshop for explosion-protected electrical equipment. The Certificate of Recognition was issued by SAI Global after a rigorous and exhaustive audit of Dowding and Mills workshops. The workshops were audited against the requirements of AS/NZS3800 *Electrical equipment for explosive atmospheres—repair and overhaul* and Standards Australia Miscellaneous Publication MP 87.2:2007.

The *NSW Coal Mine Health and Safety Regulation 2006* requires the overhaul and repair of explosion-protected plant that may alter the explosion-protected properties of the plant to be carried out only by a person licensed to carry out that work. To fulfil this requirement, Mine Safety Operations at Industry & Investment NSW operates a program of licensing workshops to overhaul and repair electrical explosion protected plant.

Licensed workshops are required to meet set criteria that demonstrate the workshop has the facilities, competency, procedures and management systems to overhaul and repair electrical explosion protected plant in accordance with AS/NZS3800. The licence is issued for a twelve month period and to renew the licence, a workshop has to be reassessed by an accredited organisation.

Mine Safety Operations has the stated aim of transitioning from licensing of these workshops to workshops being certified in accordance with the Australian/New Zealand Certification Scheme for Explosion-protected Electrical Equipment (ANZEx Scheme) Recognised Service Facilities Program. The basic rules and procedures of this program are contained in MP 87.2:2007. The chairperson of the



**First certificate awarded under the ANZEx Recognised Service Facility Program. From Left to Right: Malcolm Carr (Corporate Quality Manager, Dowding and Mills Australia), Robert Contarino (Manager Rydalmere Branch, Dowding and Mills Australia), Mario Battaglia (Director of Assurance Services EMEA, SAI Global), Ian Dickson (Managing Director, Dowding and Mills Australia), John Waudby (Senior Inspector of Electrical Engineering, Industry & Investment NSW), Chris Langham (General Manager, Dowding and Mills Australia).**

management committee for the Recognised Service Facility Program is John Waudby, Senior Inspector of Electrical Engineering, Mine Safety Operations. To encourage this transition, workshops that are certified are issued a licence for the maximum period of five years, conditional on maintaining the certification.

A ceremony at SAI Global marked the occasion of the issuing of the first certificate under the ANZEx Scheme - Recognised Service Facility Program.



From Left to Right NSW Minerals Council Chief Executive Dr Nikki Williams, Mick Townsend & Derek Harrison (Centennial Coal – Mannering Colliery) winners of the Innovation Award & the NSW Premier, the Hon Kristina Keneally MP. (Photo by Enzo Amato)

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## Award winners

The winner of the Innovation Awards was the team from Centennial Coal's Mannering Colliery in Lake Macquarie. Their entry, the Mannering Strap Lifter, allows mechanical loading and unloading of roof straps and its introduction has reduced the number of manual handling injuries at the mine. The other winners were:

### People's Choice

Quick Detach System Stone Dust Carrier, Xstrata Coal NSW (West Wallsend Colliery)



From Left to Right, NSW Minerals Council Chief Executive Dr Nikki Williams, Robert Langford & John Colletti (Xstrata Coal NSW – Baal Bone Colliery), winners of the Highly Commended Safety Award, NSW Premier, the Hon Kristina Keneally MP. (Photo by Enzo Amato)

### Highly Commended (Safety)

Continuous Miner No Go Zone Indication Lights, Xstrata Coal NSW (Baal Bone Colliery)

### Highly Commended (Health)

Drill Rig Cable Mounted Pusher, Centennial Coal (Angus Place Colliery)

NSW Minerals Council CEO Dr Nikki Williams commended the high quality of the entries from both metalliferous and coal mines across the State. "This year's awards show that the industry remains at the cutting edge of innovation to improve the health and safety of our workforce", Dr Williams said.

The keynote speaker for the conference was international communications expert, Amanda Gore, known as a 'people whisperer'. Amanda used some innovative ways to get delegates to connect with each other and stressed the importance of open and honest communication. As a testament to her power Amanda had 450 delegates holding hands and exchanging words of endearment in a serious but often hilarious session.

Andrew Marty, Managing Director of SACS Consulting and one of Australia's leading speakers on the topic of change management spoke on how to bring about change with the least resistance and the greatest likelihood of success. Andrew was followed by Corrie Pitzer, Chief Executive Officer, SAFEmap International Pty Ltd, a specialist in behavioural safety and strategic safety management. Corrie's presentation, The Seven Deadly Delusions of Accident-Prone Companies warned that as we increase protection and controls we get better safety performance but behaviour is beginning to change as a result. "The less we have accidents, the more complacent we become", he said.

Presentations at the conference were divided into three streams from which the delegates could choose, with topics relating to Communication, Leadership and Culture; Health and Well Being; or Safety. All sessions were well attended with standing room only at some. The final session of day 2 saw a packed auditorium hang on every word of Li Cunxin's incredible journey out of abject poverty and onto the world stage. Li's simple message was to keep striving to achieve your best which is an appropriate message when it comes to health and safety.



Amanda Gore weaves her magic about cracking the non verbal code

In conclusion Dr Nikki Williams thanked all the sponsors and delegates for making it a wonderful conference and acknowledged the award winners who she said "are the real reason we are here".



*Professor David Caple discusses if Associated Non-Technical Skills (ANTS) are the secret ingredient to break through the safety glass floor.*



*Corrie Pitzer, CEO of SAFEmap International Pty Ltd presents the Seven Deadly Delusions of Accident-Prone Companies*



*Mick Buffer, Chairman NSW Minerals Council welcomes conference delegates*



*Earth Moving Equipment Safety Round Table Panel*



*Li Cunxin, author of Mao's Last Dancer*

## New publications

### Coal Mine Safety Audit Report

This report collates and analyses the audit findings for each of the targeted health and safety management systems and plans required under the *Coal Mine Health and Safety Act 2002* and the *Coal Mine Health and Safety Regulation 2006*. It provides a snapshot of the coal mining industries' overall compliance with the statutory requirements regulating health and safety management systems. [www.dpi.nsw.gov.au/minerals/safety/publications/statistical-publications](http://www.dpi.nsw.gov.au/minerals/safety/publications/statistical-publications)

### Report into Emergency Management Systems in NSW Underground Coal Mines

Report into the findings of a program of audits of the Underground Emergency Systems (UES) at underground coal mines in NSW. The audits assessed the Emergency Management System against the requirements of the *Coal Mine (Underground) Regulation 1999* (Clauses 9 and 102 to 107), against the Management System Foundation Elements of AS 4801 and against the reference material contained in MDG 1020. [www.dpi.nsw.gov.au/minerals/safety/publications/statistical-publications](http://www.dpi.nsw.gov.au/minerals/safety/publications/statistical-publications)

### MDG 35.1 Guideline for Bolting and Drilling Plant in Mines – Part 1: Bolting Plant for Strata Support in Underground Coal Mines

Guideline to assist in formulating a management system approach for the design and safe use of bolting plant for strata support in underground coal mines. Provides a good industry benchmark for engineering standards and fit for purpose equipment. [www.dpi.nsw.gov.au/minerals/safety/publications/mdg](http://www.dpi.nsw.gov.au/minerals/safety/publications/mdg)

### EES-014 Technical Principles for the Use of "Stand Alone" Generators at NSW Mines and Extractives Operations

Framework for departmental officers to assess stand alone generators and their connection to electrical installations at mine operations. Guideline to assist mine operators and designers implement, manage or review their requirements for stand alone generators and associated electrical installations. [www.dpi.nsw.gov.au/minerals/safety/legislation/coal-mines/support-documents](http://www.dpi.nsw.gov.au/minerals/safety/legislation/coal-mines/support-documents)

### Associated Non-Technical Skills (ANTS) Factsheets

Series of factsheets to assist employers, unions, workers, contractors and the regulator to promote the use of the key ANTS of situation awareness, leadership, teamwork, communication, and decision making in the industry. [www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/ants](http://www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/ants)

### Health Management Plan Toolkit

Tools for the development, implementation and review of a health management plan for the NSW mining and extractives industry. Assists mines to build a health management plan with employee participation and integrate health management activities into the OHS management system. [www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops](http://www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops)

### Fatigue Management Factsheets

Series of factsheets for managers and workers that summarise the key elements contained within the publication 'Fatigue Management Plan: A practical guide to developing and implementing a fatigue management plan'. [www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops](http://www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops)

# Industry Assistance Unit workshops

Industry & Investment NSW (I&I NSW) is conducting a series of free workshops on health management, musculoskeletal disorders and fatigue management for the mining and extractives industry throughout the state until the end of this year. The workshops will provide information on developing and implementing systems to manage workplace risks that impact on workers health.

The Mine Safety Advisory Council (MSAC) has recently published three guides promoting an industry agreed approach to the management of occupational health hazards. The Health Management Plan covers all of the priority health issues identified through workers compensation claims including ergonomic hazards causing musculoskeletal disorders and fatigue. Musculoskeletal disorders and fatigue have been given a particular focus and are addressed specifically by the Managing Musculoskeletal Disorders guide and the Fatigue Management Plan guide.

MSAC represents industry, unions and government and advises the Minister for Mineral Resources on critical OHS issues. The focus on these issues arose from the recommendations of the Wran Mine Safety Review.

Long term health impacts affecting mine personnel are not as visible a problem as injury or fatalities resulting from safety risks. However, the cost of chronic illness or degenerative conditions to both individuals and industry is substantial.

Attend an industry briefing to gain:

- information on new industry guides for managing health hazards including musculoskeletal disorders and fatigue in the mine environment



Attendees at the Managing Fatigue workshop held at Newcastle on 5 July 2010

- an opportunity to review your mine's systems against the industry agreed guidelines
- information on desirable approaches to managing some industry wide priority health issues and in particular musculoskeletal disorders.

A series of one day Small Mines workshops covering the three topics of fatigue, health and musculoskeletal disorders are scheduled between July and November this year.

Workshops will be presented by I&I NSW Industry Assistance Unit in conjunction with Mine Safety Operations and Coal Services Pty Ltd.

Timetable and registration forms can be downloaded from:

**[www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops](http://www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops)**

## Queensland Mines Inspectorate visit

Three members of the Queensland Mines Inspectorate paid a visit to Lightning Ridge on 1 March 2010 to evaluate Industry & Investment NSW Mine Safety training courses. Wayne Scott, Steve Firth and Simon Cole made the trip with a view to implementing similar training in the opal and gem mining industry in Queensland.

The three Inspectors completed the Safety Awareness course and the Mine Operators workshop and over the ensuing days began formulating their approach to implementing similar training in Queensland.

Their visit included observing a formal inspection of an older tourist mine which was about to re-open. The inspection included roof support, ventilation, electrical installations and a new man-riding hoist. The group also visited a mining purpose lease to observe how the processing of opal dirt takes place and the machinery involved in the process.



From Left to Right: Jim McMahon (Industry & Investment NSW), Wayne Scott (Queensland Mines Inspectorate), Simon Cole (Queensland Mines Inspectorate), Janet Town (Industry & Investment NSW), Steven Firth (Queensland Mines Inspectorate) & Mick Babic (Industry & Investment NSW)

The Queensland Inspectors were impressed with the education program for miners regarding their responsibilities and accountabilities when it comes to mine safety. The sharing of mine safety knowledge between states can only serve to benefit the industry as a whole.

## Safety Alerts

### SA10-01 Longwall hydraulic system over-pressurised

A longwall hydraulic system became over-pressurised, resulting in the catastrophic failure of hydraulic isolation valves and other fittings in the pump station. These failures released fluid under high pressure. While no person was injured, the uncontrolled release of high pressure fluid in the workplace has potential for fatal injuries.

The pump station shut down on several occasions due to over-pressure trips. Two tradesmen isolated two of the three pumps and the face delivery line to assist in fault finding. When the third pump was started, pressure rose quickly throughout the remaining hydraulic system causing various valves and fittings to catastrophically fail.

The system pressure setting (transducer) was reading lower than the actual system pressure. Water contamination was identified as the cause of the faulty transducer. The failure resulted in the pumps not unloading, i.e. the transducer gave a signal for the pump to continue to operate even though the system design pressure was exceeded.

The trip point for over-pressure from the sensor (transducer) had a one second delay timer prior to shutting the pump motors down. With the face isolated and a single pump being run, the pressure rose very quickly beyond the system trip point (380bar) due to almost zero storage capacity.

The two mechanical system safety relief valves did not activate and were found to be corroded closed. These should normally prevent pressures rising above the system design points. The electric unloaders were checked and tested and found to be working as designed.

All mines should review their maintenance management systems to ensure safety-critical systems which control hydraulic pressure are periodically maintained and tested. In addition, all mines and OEMs should undertake a functional safety review of the pump-station control system.

Mines should use safe work procedures when interacting with high pressure fluids. Where there are no procedures available for a specific task at hand, a formal risk assessment should be carried out and a procedure developed prior to undertaking the task. Mines should specify minimum competency requirements for associated high-pressure maintenance tasks.

### SA10-02 Severe electric shock from power tool

A mine maintenance contract fitter, working on the screening level of a processing plant, received a severe electric shock from a 240V double insulated hand held impact power tool that was being prepared for storage after use. The contract fitter was removing the drive socket from the metallic chuck of the impact tool. A 240V electric shock was received across the body from hand to hand resulting in large area burns to the left hand and a single point burn to the right hand. The victim was not wearing gloves at the time of the incident.

The tool was plugged into a 20 metre, heavy duty, 10 amp extension lead which was plugged into a 240V socket outlet on a lower level of the plant. Electrical protection did not operate to remove the power. The power tool and extension lead had in date inspection tags.

The power tool chuck insulation failed due to an extremely dirty tool (internally) with fine dust/grime evident. The dirt entered the tool through ventilation slots at the chuck/gear box and commutator. An Electro Magnetic Interference (EMI) filter system was connected across mains conductors and the internal metalwork. An external metallic screw in the power tool pistol grip handle cover penetrated one of the insulated supply conductors.

Mines should apply the hierarchy of risk controls. Where the use of electric power tools cannot be eliminated, there should be tools that substitute the hazard of portable 240V tools with a portable tool that gives rise to as low as reasonably practical risk. Any tool used must be fit for purpose, and maintaining tools in a satisfactory condition for use is a key activity that is part of the work cycle

## Safety Bulletins

### SB10-01 Brake problems associated with road registered truck use at mines

The Queensland Department of Mines and Energy released Safety Bulletin No. 90 on 30 September 2009 about the lack of effective brakes on rigid on-highway trucks being used in off-highway conditions at mines. There have been a number of fatal accidents and serious injuries involving inadequate braking. Most incidents involve trucks used by contractors, and it seems lesser standards are being accepted for some contractors' equipment compared to mines' equipment.

All mines that allow road registrable trucks to operate on the mine should understand the conditions in which the truck will operate, and adhere to the vehicle manufacturer's specification for loads, gradients, etc, and have a competent person inspect the truck before use at the mine. The inspection should be documented and should ensure that the truck is in a fit for purpose condition to use; all safety critical systems are functional (brakes, steering, warning systems and operator protection); the truck has been properly maintained; a structural inspection is carried out of the undercarriage, body, suspension, brakes and all other structural areas; the tyres on the mobile plant are in a good condition; a brake test is performed which verifies the truck is capable of stopping on the maximum grades at the mine; and appropriate operator protection is provided. Refer MDG 15 (as amended).

The mines maintenance regime for on-highway trucks should take into account the accelerated deterioration rates for tyres, rims, brakes, steering and other safety critical systems when used in off-road mining environments. Brake components should be inspected and brakes tested periodically. Routine dynamic brake testing should be employed as part of a maintenance system that captures brake operation problems and deteriorating performance.

### SB10-02 Handling earthmoving equipment tyres

The Western Australian Department of Mines and Petroleum (DMP) released Safety Bulletin No. 89 on 13 November 2009 about a series of incidents involving earthmoving equipment tyres and the operation of tyre-handling machinery. There have been seven fatalities involving the handling of tyres at various Australasian mines in the past few years. Earthmoving equipment tyres, rims and wheel assemblies must be regarded as safety critical items that need to be maintained by competent people in accordance with documented systems of work addressing all of the risks involved.

Employees carrying out tyre-fitting work must undertake formal training. Tyre-fitting workshop facilities should be constructed and arranged to minimise risk to operators and others in the vicinity. Tyre-fitting procedures must be established and tyre-handling machinery must be maintained in a fit-for-purpose condition with appropriate supporting maintenance records. Tyre pressure must be monitored from a safe distance during tyre inflation. Hydraulic pressure-limiting devices should be fitted to clamping arms.

### SB10-03 Mobile plant – safety critical systems

All mine operators are reminded to investigate the operation and maintenance of safety critical systems on mobile plant as they assist operators to safely bring mobile plant to rest. The components

commonly referred to as safety critical items include braking systems, steering systems, warning systems, operator restraints and operator protection.

The investigation of a recent near miss has again highlighted the lack of understanding and testing procedures of critical safety systems by operators, managers and mine operators. A front end loader was tipping sand into a raw feed bin when the engine cut out due to a fatigued wire on the stop solenoid. As a result, the loader rolled backwards eight metres before the emergency park brake brought the machine to rest with the load still suspended.

It was determined that the service brake and bucket circuits were not operational in a loss-of-power situation because both circuits had failed accumulators. The operator of the machine was helpless, despite his repeated attempts to bring the machine to a stop, until the emergency park brake activated.

While the site used original equipment manufacturer (OEM) service personnel to perform major services, there was an absence of any routine testing program to ensure the proper function of critical safety systems between services. Also, personnel did not understand the role of stored energy (accumulators) in providing emergency services in a loss-of-power event. Clause 137 (1) (c) of the Occupational Health and Safety Regulation 2001 requires all safety features and warning devices of plant to be maintained and tested.

All mine operators should review their Mine Safety Management Plan (MSMP) to ensure that in assessing risks associated with earthmoving machinery, the OHS risk assessment takes into consideration the failure of systems that are critical to safety (Mine Health and Safety Regulation 2007 clause 39 (b) ). This should include the identification of all safety critical systems on mobile plant; a review of OEM manuals to establish how the machine is intended to operate in a loss-of-power event; the development of testing procedures to ensure the machine operates in its intended manner; and a review of MSMP documentation to ensure that it accurately reflects how the testing is to be performed.

Operators, supervisors and maintenance people involved with mobile plant should be familiar with all safety critical systems, trained and competent to perform their task. Daily prestart safety checks should be rigorously carried out, including determining the proper function of the safety critical systems. Operators of mobile plant should be familiar with warning systems that highlight the failure of safety critical systems.

## **SB10-04 Two-post light vehicle maintenance hoists**

The increased installation of two-post hoists is causing concern due to recent incidents of vehicles becoming unstable on the lifting arms and subsequently falling off the hoist.

Prior to the purchase of any vehicle hoist, consideration should be given to AS 1418.9:1996 Cranes (including hoists and winches) Vehicle Hoists and the design registration compliance requirements of clause 136(3) of the Occupational Health and Safety Regulations 2001 and AS 2550.9:1996 Cranes – Safe Use – Vehicle Hoists.

All mines operating two-post light vehicle hoists should ensure that periodic maintenance complies with the OEM's recommendations and site requirements and condition. The wire balance ropes used by these

hoists should be thoroughly inspected by competent people and correctly adjusted.

Only competent people with the relevant skills, knowledge, experience and capabilities should be employed to maintain and operate the hoist. Service personnel must complete a pre-operational inspection prior to using the hoist to ensure all safety critical systems comply with the original design criteria as a minimum.

Specific training and information for people servicing light vehicles on these hoists should be provided, if required, to ensure personnel are aware of the centre of gravity for each type of vehicle to be serviced to enable them to correctly position the lifting arms and ensure the load is in equilibrium prior to lifting. Personnel also need an understanding of centre of gravity changes and the likely consequences if components are removed or added while servicing. Personnel should be aware that excess material, loose tools and anything that may roll or move are removed from utility trays prior to servicing and the area in and around the hoist is isolated when raising and lowering vehicles.

## **SB10-05 Airborne dust – Inhalable dust control**

The Notice under *Coal Mine Health and Safety Act 2002* issued by the Chief Inspector dated 17 December 2007 and published in the Government Gazette dated 21 December 2007 imposed a limit of 10 mg/m<sup>3</sup> inhalable dust on all coal operations in NSW. Measurement of the inhalable dust component of airborne dust was also included into the monitoring requirements of the NSW coal mining industry by the same Notice.

The results to date indicate that improved dust control measures will be required in the underground coal mines of NSW. Of concern are results relating to longwall mines in the Newcastle & Hunter District. In addition, but less frequently, there have been non-conformances recorded at longwall mines in the Southern District.

Continuous miner units have fared better but results overall tend to compare unfavourably with results achieved with respect to respirable dust monitoring. Observations recorded at the time of sampling give some indication as to the likely causes of high dust levels including inadequate ventilation; inadequate water or dust control; poor operator positioning; damaged equipment and poor work practices.

Strategies to remedy non-conformance are isolation or capture of dust at source via sealing of transfer points, BSL, crushers; operating water sprays at appropriate locations and as near as possible to the point of breakage with sufficient water volumes, pressure and correct sizing of water jets/droplets; ventilation of the correct quantities and at the right location; advance ventilation ducting/brattice to mine ventilation standard; regular maintenance of dust suppression equipment; operator positioning, job rotation and automation; control of dust levels along travelling roads; and respiratory protection by personal protective equipment (PPE).

Site specific safe work procedures need to be developed and work planned to identify and control risks. If eliminating the risk is not possible, then the remaining hierarchy of controls needs to be applied. This can include improved ventilation, dust suppression, maintaining equipment, closer supervision and wearing PPE.

**Find all Safety Alerts at: [www.dpi.nsw.gov.au/minerals/safety/safety-alerts](http://www.dpi.nsw.gov.au/minerals/safety/safety-alerts)**

## SB10-06 Failures of explosion protected diesel engine systems

Clause 56(1)(m) of the *Coal Mine Health and Safety Regulation 2006* (CMHSR) requires notification to the Chief Inspector of any incident or matter involving – *‘the in-service failure of the explosion-protection characteristics of explosion-protected plant’*.

Between December 2006 and December 2009 there were over 465 reported failures of explosion protected diesel engine systems (DES) by mine operators. Industry & Investment NSW has approximately 1,080 explosion protected DES items registered for use in NSW. This means approximately 15% of explosion protected DES in use in NSW mines would fail to be in an explosion protected condition at some stage during the year. This is an unacceptable failure rate in view of contemporary engineering standards and the consequence of failure may be an explosive catastrophic event.

Designers, manufacturers and suppliers should refer immediately to clause 88 Occupational Health and Safety Regulation 2001 (OHS Regulation) as designers have a duty to review risk assessments whenever information is provided about a design fault. I&I NSW will distribute relevant incidents to each OEM.

Information should be provided to relevant stakeholders on improvements resulting from risk assessment reviews. Designers,

manufacturers and suppliers should comply with AS/NZS 3584.2 and provide fail-to-safety engine-shutdown systems which are verified by risk assessment. They should also provide realistic lifecycle maintenance information compliant with clause 96 OHS Regulation and AS/NZS 3584.3 that if followed will ensure explosion protection properties of the DES are maintained for life.

A finite life for each component of the DES should be provided. Owners of explosion protected DES should ensure people undertaking safety inspections, examinations or maintenance activities on DES are competent for the particular DES in use at the mine. They should provide a maintenance management system compliant to AS/NZS 3584.3. Competent people should investigate and document all failures of explosion protected DES and report the relevant information to the Manager of Mechanical Engineering and I&I NSW.

Mine Operators should have an inspection/maintenance system that ensures all safety features and warning devices on the DES are maintained and tested at appropriate intervals by appropriate methods (refer to clause 137 of the OHS Regulation). Code D examinations should be carried out by an organisation with appropriate quality systems, equipment, procedures, and competent people for such work.

**If you would like to receive Safety Alerts and Bulletins by email, enter your details at: [www.dpi.nsw.gov.au/minerals/safety/signup](http://www.dpi.nsw.gov.au/minerals/safety/signup).**

## PROSECUTIONS UPDATE

### Jason Symonds fatality at Perilya Broken Hill Mine

On 9 January 2007 Jason Symonds was fatally injured whilst operating a remotely controlled load haul dump machine (bogger) to remove ore from an underground draw point at the Perilya Broken Hill Mine.

The radio remote control of the loader operation relied on line of sight by the operator to monitor the work undertaken.

Charges were filed in the Industrial Court of NSW against Perilya Broken Hill Limited.

Perilya Broken Hill Limited entered a plea of guilty to a charge alleging a breach of section 8(1) of the Occupational Health and Safety Act 2000 (OHS Act). The breach of section 8(1) arose in circumstances where;

1. Employees were exposed to the risk of being struck by load haul dump machines while using line of sight remote controlled equipment;
2. Employees were exposed to the risk of being crushed by load haul dump machines whilst using line of sight remote controlled equipment; and
3. Perilya Broken Hill Limited had failed to provide appropriate engineering controls so as to prevent workers from being able to move up to, alongside or past remote controlled loaders whilst they were operating and/or able to be operated.

In his judgment, Justice Haylen said that:

*“the immediate circumstances that led to Mr Symond’s death were unknown, apart from the fact he was working alone with the remote control operated loader on the night shift”.* [Morrison v Perilya Broken Hill Ltd [2010] NSWIRComm 66 at 33]

The investigation found no evidence of machine malfunction.

The Court was provided with a plan showing the position of the loader and the point where Mr Symonds was crushed which demonstrated

that the loader had been brought back behind the five metre mark from the brow of the draw point.

Justice Haylen said that:

*“For a reason or reasons unknown, Mr Symonds was unable to or did not maintain a five metre distance between himself and the loader. The defendant’s safe work procedure also allowed operators to move up to the side of the loader to visually check the work but the loader was to be disabled when this occurred”.* [Morrison v Perilya Broken Hill Ltd [2010] NSWIRComm 66 at 33]

The Court found that the risk of such an incident occurring was foreseeable. Justice Haylen said that Perilya Broken Hill Limited:

*“accepted that laser technology was available at the time of the incident and that the failure of the company to adopt that measure essentially constituted the breach.*

*It was reasonably practicable to use the laser technology to address the risk of serious injury in the use of remotely controlled loaders”.* [Morrison v Perilya Broken Hill Ltd [2010] NSWIRComm 66 at 39].

At the date of Mr Symond’s incident Perilya Broken Hill Limited had two tele-remote loaders that were being trialled at the mine to remove the operator from the work area and avoid the risk of being struck or crushed by the loader.

On 25 May 2010, Perilya Broken Hill Limited was convicted by the Court of a breach of section 8(1) of the OHS Act and fined \$130,000.

**The Investigation Unit publishes information from major incident investigations to assist industry to become better informed of causal factors and industry best practice: [www.dpi.nsw.gov.au/minerals/safety/major-investigations/investigation-reports](http://www.dpi.nsw.gov.au/minerals/safety/major-investigations/investigation-reports)**

# CALENDAR OF EVENTS

**Mechanical engineering safety seminar**, 11-12 August 2010, Sydney Olympic Park, contact Julie Downie, I&I NSW, 02 4931 6624.

**Electrical engineering safety seminar**, 10-11 November 2010, Sydney Olympic Park, contact Julie Downie, I&I NSW, 02 4931 6624.

**Mine operators workshops**, held regularly, next 18 August 2010, Miners Association Building, Morilla Street, Lightning Ridge, contact Janet Town, I&I NSW, 02 6829 9200.

**Mine safety awareness course**, held regularly, next 18-19 October 2010, Lightning Ridge Bowling Club, contact Janet Town, I&I NSW, 02 6829 9200.

**Hunter Valley underground mine mechanical engineers meeting**, Mine Safety Technology Centre at Thornton, held quarterly, contact Paul Drain, Inspector of Mechanical Engineering, I&I NSW 02 4931 6652.

**Hunter Valley open cut mine & coal preparation plant mechanical engineers meeting**, Next meeting will be in July 2010. Contact Matt Willoughby, Inspector of Mechanical Engineering I&I NSW 02 6571 8788.

**Southern & Western Coalfields mechanical engineers meeting**, held quarterly, contact Graham Johnston, Inspector Mechanical Engineering, I&I NSW 02 4222 8307 or Wally Koppe, Inspector Mechanical Engineering, I&I NSW 02 4222 8303.

**Introduction to safety management workshop for small mines and quarries**, at various venues and dates throughout NSW, see I&I

NSW website [www.dpi.nsw.gov.au/minesafety](http://www.dpi.nsw.gov.au/minesafety) for further details or contact Institute of Quarrying Australia ([education@quarry.com.au](mailto:education@quarry.com.au)).

**Refining your safety management workshop for small mines and quarries**, at various venues and dates throughout NSW, see I&I NSW website [www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops](http://www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops) for further details or contact Institute of Quarrying Australia ([education@quarry.com.au](mailto:education@quarry.com.au)).

**Hunter Valley electrical engineers meeting**, held bimonthly (normally held on the first Friday of every second month) at Mine Safety Technology Centre, 8 Hartley Drive, Thornton, contact Owen Barry, Inspector of Electrical Engineering I&I NSW 02 6571 8708 or Peter Davidson, Mandalong Mine 02 4973 0922.

**Southern and Western Coalfields electrical engineers meeting**, TestSafe, Londonderry, held quarterly (limited numbers), contact Stan Maginnis Inspector of Electrical Engineering I&I NSW Lithgow Office 02 6350 7891 or Wollongong Office 02 4222 8300 or 0417 223 875.

**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.

**Remote control equipment advisory group meeting**, invite required, held quarterly, contact Steve Bentham, Senior Inspector of Electrical Engineering, I&I NSW, 02 4931 6653 or 0409 836 286.

**MEMMES (Mining electrical and mining mechanical engineers society of the IEAust) meeting**, held monthly, contact Peter Whipp, President, 02 4946 7817 or 0488 495 620.

*For more information go to: [www.dpi.nsw.gov.au/minerals/safety/resources](http://www.dpi.nsw.gov.au/minerals/safety/resources)*

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