

NSW mine safety update

Promoting safety in the NSW mining industry



New unit to provide assistance to mine sites

Assistance that will help the mining industry reach its goal of achieving world-leading OHS management will soon be available with the creation of a new Industry Assistance Unit by the NSW Department of Primary Industries.

The Industry Assistance Unit will work closely with the Mine Safety Advisory Council to develop and deliver integrated education and assistance programs directly to the NSW mining industry. The programs will range from one-on-one assistance through workshops for mine sites that require improvement on specific hazard management or general systems, to broader group presentations for management, technical specialists, unions and check inspectors.

The education and assistance programs will be designed to improve understanding of the impact of priority issues on health and safety and to improve performance and outcomes.

The programs will support new and

existing industry standards including;

- consultation
- contractor management
- fatigue management
- developing and implementing a health management plan
- management of musculoskeletal disorders, and
- safety incentive schemes.

The Industry Assistance Unit will also design programs to promote the value of safety leadership, development of a positive safety culture and non-technical skills including decision making, two-way communication and team work.

All of the education and assistance programs will be developed in line with recommendations from the Wran Mine Safety Review and the Mine Safety Advisory Council's Digging Deeper research report. While the Wran Review identified a 'disconnect' between OHS

systems and OHS practice (ie the implementation of procedures to worker level), Digging Deeper established a baseline for OHS performance that categorised sites as being 'reactive', 'transitional' or 'proactive' regarding their OHS implementation.

The aim of the Industry Assistance Unit is to identify and understand the barriers to effective OHS system implementation. The unit will then design and deliver education and assistance programs directly to industry that will improve the percentage of 'proactive' sites within the NSW mining industry, ultimately helping industry meet its agreed goal of 'World-leading OHS culture'.

You can keep up to date with the activities of the new Industry Assistance Unit through the NSW DPI website at:

www.dpi.nsw.gov.au/minesafety

Meet the new Assistance Unit: page 2



OHS Conference helps build our health wealth

The State's mining industry came together at the NSW Minerals Industry OHS Conference in April to discover new ways of improving OHS performance. The theme for this year's conference was Fighting Fit: Building your health wealth. More than 500 delegates attended the four-day conference. A highlight was the annual Safety Innovation Awards. Pictured at left are Centennial Coal Newstan Colliery's Peter Bergin, Paul Berryman, John Rose and Trevor Hartley celebrating their Innovations Award success with NSW Minerals Council chief executive officer Dr Nikki Williams.

Photo: Vincenzo Amato

For a full OHS Conference review turn to pages 6 and 7



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Stacie Kendall, Heather Jackson and Tony Anthony of the DPI Mining Industry Assistance Unit.

Meet the new Industry Assistance Unit

Heather Jackson, *Manager*

Heather has over nine years experience in OHS. As a team coordinator at WorkCover she was responsible for managing the inspectorate's service delivery functions including incident investigation, workplace advice and assistance and targeted projects. She is a qualified occupational therapist with 10 years experience in managing rehabilitation and return-to-work programs for injured workers, including miners. Heather will be involved in developing programs to meet the strategic direction set by the Mine Safety Advisory Council, consulting with industry stakeholders about proposed services and overseeing their implementation, and will have direct involvement in the musculoskeletal disorders prevention and management program. **Phone: 4931 6491, mob 0448 496 522, email: heather.jackson@dpi.nsw.gov.au**

Tony Anthony, *Practice Leader OHS Management Systems*

Tony has an honours degree with diplomas in education and OHS. He was an OHS consultant across a range of sectors, including manufacturing and heavy industry. His most recent position was senior OHS coordinator in the civil division of a large construction company. His solid background in education and management systems, combined with his hands-on approach, has provided him with an excellent understanding of the industry's needs. Tony's role will see him give specialist systems advice, develop assistance materials and provide guidance on how to connect systems to practice at a site level. **Phone: 02 4931 6430, mob 0427 211 613, email: tony.anthony@dpi.nsw.gov.au**

Stacie Kendall, *Education Officer*

Stacie has a Bachelor in Training and Development and has developed a specialisation in OHS training within the mining industry, working as a trainer for several registered training organisations delivering coal competency and coal safety courses. She has also taught business at TAFE. Stacie is experienced in change management, staff development, curriculum design, organisational development and workplace training. She will liaise with stakeholders within the mining industry and provide guidance regarding education and OHS issues, analyse and identify current and potential skill and competency gaps and develop and implement OHS assistance programs and learning material to address these gaps. These programs will be made available to the industry and ancillary organisations. **Phone: 02 49316446, mob 0437 401190, email: stacie.kendall@dpi.nsw.gov.au**

ISSN 1444-5174

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Photography: David Barnes, Mine Safety staff, contributors

Design: Brooke Lewis, Tony Linnane

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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.

Musculoskeletal disorders a priority issue

Musculoskeletal disorders (MSD) are a serious health concern for the NSW mining industry. With musculoskeletal injuries accounting for more than 40 per cent of workers compensation claims, the hazards leading to these injuries were recently included in the NSW Health Working Party's list of priority health issues for the industry.

To help manage this issue the MSD Project Steering Group is developing a new guide that will provide advice and technical assistance to mine sites. The draft *Guide to the Management of Musculoskeletal Disorders in the Mining and Extractives Industry* was recently released for industry consultation to ensure the document addresses the needs of the mining industry.

The guide has been designed to help sites take planned preventative measures to deal with risks associated with musculoskeletal injuries. It includes practical examples, case studies, resources and easy to use tools. A major benefit of the guide is that it provides information and management processes that are consistent with regulatory requirements and world-leading practice and utilises capacities that already exist on-site.

Musculoskeletal disorder is an umbrella term for related injuries and disorders including;

- **sprains and strains of muscles, ligaments and tendons** (eg shoulder muscle strain leading to rotator cuff tear)
- **back injuries**, including damage to the muscles, tendons, ligaments, spinal discs (eg, ruptured discs), nerves (e.g. sciatica), joints and bones
- **joint injuries or degeneration**, including injuries to the shoulder, elbow, wrist, hip, knee, ankle, hands and feet
- **bone injuries** (eg fractures)
- **nerve injuries** (eg carpal tunnel syndrome of the wrist)

- **soft tissue hernias** (eg abdominal hernias)
- **muscular and vascular disorders** as a result of hand-arm vibration.

Based on research conducted in Australia and overseas, the key musculoskeletal hazards and risk factors in a mining / extractive environment include awkward postures, forceful exertions, repetitive actions / duration, vibration of hand / arm and whole body (including jolting and jarring), slips, trips and falls and other environmental factors.

Musculoskeletal disorders can occur suddenly as a result of a single forceful action or develop over long periods as symptoms associated with minor tissue injuries are ignored, eventually resulting in a more serious injury. Many workers performing repetitive tasks or work of a similar nature fall into the longer-term category.

The MSD Steering Group was formed by the NSW Mining Industry Health Working Party as a focus point for industry efforts to improve musculoskeletal disorder management. It includes members from government agencies, employer and union representatives and an independent musculoskeletal disorder expert.

As well as the expertise provided by the working party, input from end-users was seen as an integral part of the guide's development process. The MSD Steering Group would like to thank everyone who contributed to the development of the guide during the industry consultation period. A number of helpful submissions were received and this feedback is now being incorporated into a final review to ensure the guide is clear, effective and user friendly.

The *Guide to the Management of Musculoskeletal Disorders in the Mining and Extractives Industry* will be available on the NSW DPI website in the near future. The consultation draft is currently available at www.dpi.nsw.gov.au/minesafety

Intrinsic safety expertise available at technology centre

The Mine Safety Technology Centre has recently been accepted as a test laboratory by the International Electrotechnical Commission System for certification to standards relating to equipment for use in explosive atmospheres (IECEX System).

The acceptance was granted following audits and assessment of the Mine Safety Technology Centre by international auditors during 2008 and means the centre is now internationally recognised as having expertise in intrinsic safety.

This expertise is available to the NSW DPI inspectorate and the mining industry if they have any concerns about intrinsic safety equipment or assessments. Test



Senior engineer electrical assessor Mohamed Abdelkrimi at the Mine Safety Technology Centre.

reports from the centre can now also be used by manufacturers to obtain certification of their products from a certifying body, or the centre can directly assist in product testing and coordination of product certification.

The IECEX test laboratory acceptance complements the Mine Safety Technology Centre's existing NATA accreditation and its Australian and New Zealand explosion protection testing laboratory acceptance (ANZExTL) and expands the range of services the centre can provide to the mining industry.

This recognition also puts the Mine Safety Technology Centre within the worldwide network of IECEX Test Laboratories and Certification Bodies, which in turn enhances the centre's ability to share knowledge through the IECEX Technical Advisory Group.

For further information please contact Mohamed Abdelkrimi at the Mine Safety Technology Centre on 02 4924 4009.

Guide to help industry manage health risks

To improve coordination of health issues in the mining and extractives industries the Mine Safety Advisory Council (MSAC) has endorsed a new guide to assist sites manage contemporary and traditional health issues. The guide provides assistance to mines in developing and implementing health management plans.

Traditionally health issues have played 'second fiddle' to safety issues when addressing the risks facing employees in the mining industry. While safety often presents the most immediate risk, the long-term health of employees is of no less importance. Both health and safety need to be integrated within a mine's health and safety management system or plan.

The new *Guide to the Development and Implementation of a Health Management Plan* aims to help the industry manage occupational health risks in the same systematic way they address safety risks. It will also help mines to better understand their existing legislative obligations in managing occupational health risks. The guidance is provided in the form of suggested approaches but is flexible so individual operators can develop a health management plan suited to their specific needs. Each section of the guide considers a specific aspect of the plan and provides an overview, information on the actions required by legislation, other desirable actions and a list of resources.

There is a strong focus within the guide on the development and implementation of the Health Management Plan. This includes:

- early and ongoing consultation
- making a firm policy commitment to effective health risk management
- establishment of roles and responsibilities
- risk identification, assessment and control
- development of assessment and monitoring procedures
- training and supervision
- development of a strategy to implement the plan
- implementation of the plan

- ongoing performance monitoring and evaluation of the risk management process
- regular review and resultant modification of the plan
- integration of the plan with the overall health and safety management plan.

Consultation and good communication are the first steps to developing a health management plan and are central to its effectiveness, as workers are likely to have the best practical understanding of work processes and the potential for exposure to hazards. However policy commitment, early identification of roles and responsibilities and training are equally important to the plan's successful implementation. The policy should make it clear to management, employees, contractors and visitors that the operator is committed to the health management plan and should be reflected in the actions of senior management.

The guide also incorporates surveillance, exposure monitoring, risk assessment and recording of the priority health issues identified by the NSW Health Working Party (see story below). Although health management should not be limited to these contemporary issues, other exposures that have a lower overall priority because they are generally already well controlled (including silica, coal and asbestos) still require management.

Ongoing performance monitoring and evaluation are also key components of a successfully implemented plan to ensure adverse health effects arising from work are effectively being reduced and adjustments can be made to suit site-specific issues as they arise. Health management plans are also required to be assessed and audited by authorities so ongoing monitoring and evaluation will help an operation ensure their plan achieves its purpose and maintains effectiveness.

The guide is supported by the Minister and will be rolled out by NSW DPI in partnership with industry stakeholders. It will be supported by an education and assistance program overseen by MSAC. The program will be part of MSAC's world-leading OHS culture agenda and will be led by the Mining Industry Assistance Unit. Access the guide at www.dpi.nsw.gov.au/minesafety

Nine priority health issues require industry attention

The NSW Health Working Party recently identified nine priority health issues that are seen as a current focus for industry attention.

A lack of available information and prevention activity on work-related diseases in the NSW mining industry was first identified in the Wran Mine Safety Review. The NSW Health Working Party responded to this finding by undertaking a literature review with the aim of identifying priority issues and making them known.

The literature review identified a range of hazards and the conditions and / or diseases they cause. A matrix was then applied to assess these as high, medium or low based on their frequency, latency, severity and other relevant factors. Those with the highest rating have become the priority health issues.

The literature review included information from throughout Australia and overseas as published information was lacking in NSW. Workers compensation was also used to identify the

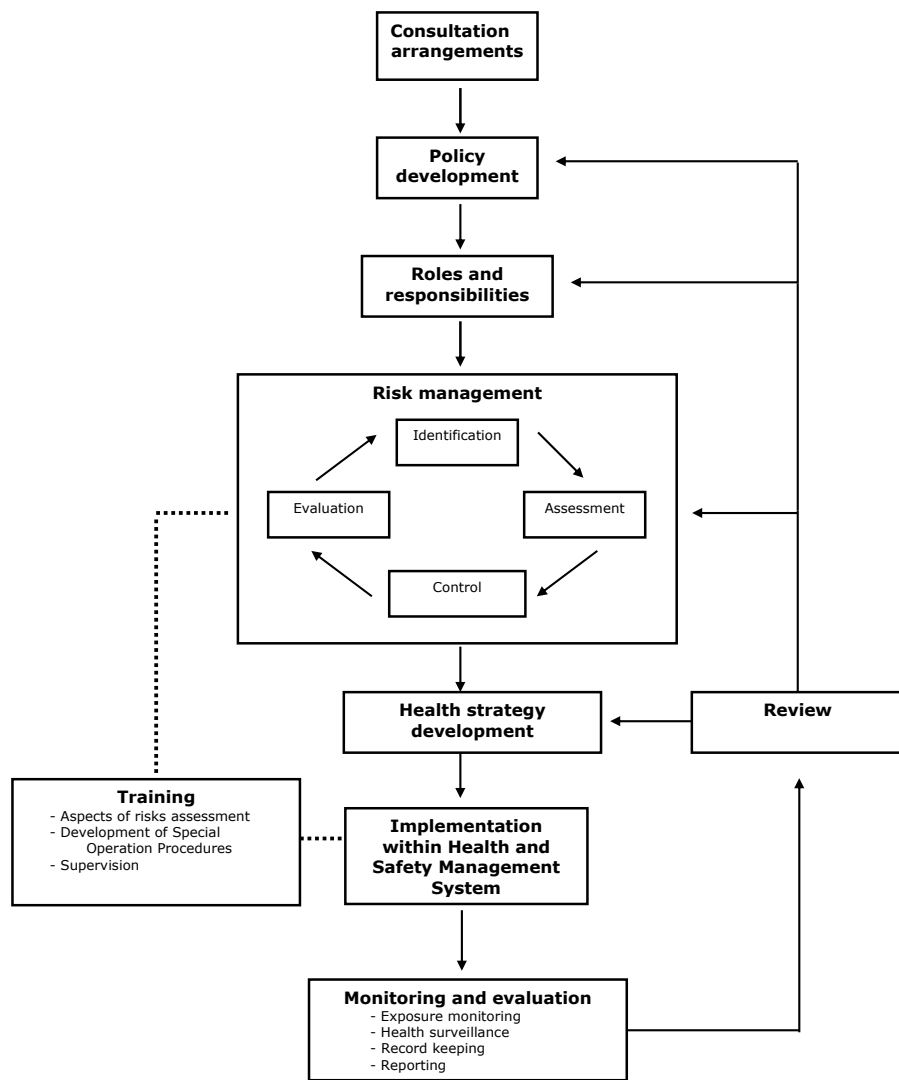
priority health issues. The scope of the review included all non-injury health issues (ie work-related diseases) and the exposures that cause them.

Traditional health concerns for the mining industry have been silica, coal dust and asbestos and their resulting respiratory diseases. These were excluded from the final priority list as they are becoming far less common due to increased control measures. This does not mean they are any less important.

The Mine Safety Advisory Council has agreed to the nine priority health issues and urges the NSW mining industry to take necessary preventative action to reduce risks to workers.

The priority health issues are also being used as a basis for new education and assistance programs being developed and implemented by NSW DPI's Industry Assistance Unit.

Get further information at www.dpi.nsw.gov.au/minesafety



Overall approach to the development and implementation of a Health Management Plan

Priority health issues for mining

- Noise causing hearing loss
- Vibration causing musculoskeletal disorders
- Diesel exhaust fumes leading to respiratory disease
- Hazardous substance exposure causing dermatitis
- Ergonomic stressors causing musculoskeletal conditions
- Ergonomic stressors causing back disorders
- Ergonomic stressors causing fatigue and related disorders
- Psychosocial hazards causing mental disorders
- Ultraviolet radiation and skin disease.

New publications

Mine Safety Management Plan Assessment

The *Mine Safety Management Plan Assessment* provides a simple evaluation of the development of a mine safety management plan at a mine. Download at:

www.dpi.nsw.gov.au/minerals/safety/resources/tools

OHS Act and Mine Health and Safety Act Legislation Compliance Audit Tool

The *OHS Act and Mine Health and Safety Act Legislation Compliance Audit Tool* is a useful reference to navigate through mining legislation and to find relevant sources of information. The tool in itself is not legislation, but should be read in conjunction with the legislation. Download at:

www.dpi.nsw.gov.au/minerals/safety/resources/tools

Explosion Drilling Hazard Checklist

A new version of the Explosion Drilling hazard Checklist is available. Download at:

www.dpi.nsw.gov.au/minerals/safety/resources/tools

Small Mines Safety Management Kit (ed. 3)

A new edition of the *Small Mines Safety Management Kit* has been developed. The kit can be purchased from NSW DPI at a cost of \$30 (plus postage and handling). Telephone 02 4931 6666 to order a copy or contact your local NSW DPI Mine Safety office.

Electrical engineering safety information sheets

Electrical engineering safety information sheets are aimed primarily at smaller extractive operations (quarries), however they are worthy of consideration by larger mining operations, both coal and metalliferous. Download at:

www.dpi.nsw.gov.au/minerals/safety/resources/electrical-engineering/guidance-material/electrical-engineering-safety-information-sheets

Technical Reference Electrical Engineering Safety EES-014

This technical reference is intended to bring together the various requirements and circuit design philosophies for generator installations, enabling inspectors of electrical engineering to provide consistent advice to colleagues, electricity workers and consumers. Download at:

www.dpi.nsw.gov.au/minerals/safety/legislation/coal-mines/support-documents

Mining industry leaders encouraged to build

More than 500 representatives of the State's mining industry were encouraged to build their health capital at this year's NSW Minerals Industry OHS Conference at Cypress Lakes Resort in the Hunter Valley.

The conference theme 'Fighting Fit: Building your health wealth' aimed to focus greater industry attention on the health component of occupational health and safety.

NSW Minister for Primary Industries Ian Macdonald MLC congratulated the industry for focusing its efforts, through the Mine Safety Advisory Council, on health and the production of the *Guide to the development and implementation of a Health Management Plan guideline*.

NSW Department of Primary Industries Director-General Dr Richard Sheldrake represented the Minister by delivering the

opening address at the conference.

"The Minister supports the Council-endorsed Health Management Plan guideline which will assist industry to meet their existing health obligations under the OHS legislative framework," Dr Sheldrake said.

"Indeed, this plan is helping putting the H back into OHS. The Health Management Plan will enable industry to manage contemporary health issues, such as musculoskeletal disorders and psychosocial issues, such as stress."

Dr Sheldrake said the industry had shown constant improvement in health and safety performance during the past 10 years but that two recent fatalities in the coal sector were a stark reminder that all stakeholders must work together and do more to achieve the common goal of zero harm.

Innovation award winner removes workers from risk

A design that limits human exposure to the failure of high-pressure fluid system components on longwalls has won the NSW Minerals Council Health and Safety Innovation Award for 2009.

Centennial Coal's Newstan Colliery won the main Innovations award with its purpose-built system to isolate longwall mining faces to allow for maintenance and repairs to be carried out. The system is known as the Centennial Hydraulic Isolation Control System (CHICS).

The awards judging panel said CHICS was "a major and timely innovation for control of high-pressure hydraulic systems, eminently transferable (to other industries)" and represented "a very

significant safety improvement".

The full list of 2009 Innovation Awards winners is:

- **Overall winner:** Centennial Coal (Newstan Colliery), Centennial Coal Hydraulic Isolation Control System (CHICS)
- **People's Choice:** Centennial Coal (Awaba Colliery), 20 Litre Oil Drum Cassette and Lifting Handle
- **Highly Commended (Safety):** Rio Tinto Coal Australia (Bengalla Mining Company), Handle with Care
- **Highly Commended (Health):** Centennial Coal (Awaba Colliery),

20 Litre Oil Drum Cassette and Lifting Handle

NSW Minerals Council chief executive Dr Nikki Williams said the Innovation Awards entries demonstrated the commitment being shown by the NSW mining industry to improving the health and safety of its workforce.

"Each year our Innovation Awards throw up amazing examples of ingenuity to eliminate risk from the workplace," Dr Williams said.

"As we have seen so tragically in recent times, the industry's objective of zero harm is a moving target which can never be taken for granted.



Innovation Awards judges Harold Lonsdale (MEMMES), Dr Sharann Johnson and Rob Regan (NSW DPI, Chief Inspector of Mines and Coal Mines) with Dr Nikki Williams during the presentation of the innovation designs.



Paralympians Liesl Tesch, Nigel Smith, NSW Minerals Council chief executive Dr Nikki Williams, Paralympians Kahi Puru and Heath Francis and golfing great and facilitator Jack Newton after a very successful panel session called Fittest Fighters.

their health wealth and tackle key issues

An impressive group of speakers gave presentations during the conference.

Dr Garry Egger, the Director of the Centre for Health Promotion and Research, said the principles of good health were exercise, nutrition, social support, weight control and stress management.

A lack of sleep can cause disease, Dr Egger said, and sleep debt could double the risk of injury.

Peter Simpson, the Director of BSS Corporate Psychology Services, talked about the need for industry to manage risks caused by fatigue and the inappropriate use of alcohol and drugs, which could have a negative impact on long-term health.

He also identified fatigue and the quality and length of sleep as key issues for the mining industry.

Dr Sharann Johnson, the president of the Australian Institute of Occupational Hygienists, presented a paper on occupational hygiene and sustainability and performance.

According to Dr Johnson, musculoskeletal disorders and noise were two health issues the mining industry “needs to get on top of”.

She called on the mining industry to agree on similar exposure groups; monitor health trends and performance; integrate health KPIs into the management OHS agenda and operating plans; share best practice; and implement sustainable health programs and deliver improved performance.

“It was very pleasing to see some of the initiatives which are underway in NSW mining operations which are focused on overall health and well-being. While the safety of our workforce on mine sites must always be our top priority, there must be an understanding that a holistic approach to healthy lifestyles has undoubted safety benefits for everyone. “Judges noted the very high standard of all entries, even some which were not selected as finalists, but most importantly acknowledged that all innovations would have benefits for mine workers, wherever implemented.”

The winners were selected from 10 finalists and 41 entries overall. There were 31 entries in the long-standing Safety Innovations category and 10 in the Health Innovations category, which was created for the first time in 2009. The entries ranged from simple, manual solutions to more complex, electronic innovations.

Photos: Vincenzo Amato



Dr Richard Sheldrake, Director-General of the NSW Department of Primary Industries, delivers the opening address at the OHS Conference



Steve Flannery, Kris Andrew and Ken Andrews (Rio Tinto Coal Australia - Bengalla Mining Company) are congratulated by Dr Nikki Williams on winning the Highly Commended Safety section of the Innovation Awards.



Human factors consultant David Nery gets hands-on to discuss musculoskeletal injuries.



Dr Garry Egger talks about the principles of good health.

Photos: Vincenzo Amato.



Trevor Hines and Ray Pepperall from Centennial Coal - Awaba Colliery with their 20-litre oil drum cassette and lifting handle innovation.



Fitness professional Michelle Bridges tackles the issue of health, fitness and weight management.

Competence board to tour mining regions

The NSW Metalliferous Mining and Extractive Industries Competence Board will be visiting regional locations during each of its upcoming board meetings to become familiar with local issues, visit sites and meet regional representatives.

In February the board met at Broken Hill and visited the southern operations of Perilya Broken Hill Ltd. During the site visit board members went underground to observe operations then met with key management personnel.

At the board meeting, Des Caulfield, CEO of Skills DMC gave members a presentation on how they could strategically partner with the board and an overview of their operations. The board also discussed shotfiring qualifications, engine driving competencies and suggestions by the examination panels to improve Certificate of Competence exams.

The Metalliferous Mines and Extractive Industries Competence Board was established in 2008 following the introduction of the *Mine Health and Safety Act 2004* and *Mine Health and Safety Regulation 2007*. It aims to improve mine safety performance by ensuring the competence of people to work safely in the NSW mining industry. The board advises the Minister and oversees the development of competence standards and the assessment of competencies. It will also develop a system for the maintenance of competence.

The board is chaired by Peter Black OAM and includes representatives from the NSW Minerals Council, Cement,



At the meeting of the NSW Metalliferous Mining and Extractive Industries Competence Board in Broken Hill were Greg Goodsir, Chairman Peter Black, Greg Braes, guest speaker Des Caulfield (CEO of Skills DMC), Danny Duke, Rob Regan, Leanne Parker, Rod Morrison, Allan Jones, Glenn Seton and Andrew Palmer.

Concrete and Aggregate Australia, AWU, CFMEU, NSW DPI and independent experts with experience in the development and assessment of competence in the NSW mining industry.

The board held its second meeting at the Penrith Lakes Development Corporation during May. Further information on the board's terms of reference and membership can be found on the NSW DPI website at:

www.dpi.nsw.gov.au/minesafety

Technology focus for mechanical engineering safety seminar

NSW DPI's popular Mechanical Engineering Safety Seminar is being held once again on 5-6 August 2009 at the Waterview Convention Centre, Sydney Olympic Park.

The theme for this year's seminar is OHS – coping with changing technology.

An inspirational key-note presentation will also be given by paralympians Kahi Puru and Nigel Smith. Both Kahi and Nigel had a leg amputated after workplace accidents (involving a forklift and a chain conveyor respectively) and have gone on to become world-class athletes. They will talk about how the accidents affected their lives and those of their families, as well as how they defied the odds to overcome their injuries.

A conference dinner will also be held during the seminar, hosted by Steven Bradbury. Steven has become well known as one of the world's most colourful Olympic athletes as the 'last man standing' at the 2002 Winter Olympics. Although some may believe his Olympic medal was pure



Winter Olympics gold medallist Steven Bradbury will be the guest speaker at the Mechanical Engineering Safety Seminar dinner.

luck, his career has been driven by determination, sacrifice and a will to succeed.

He is a true Aussie battler who overcame horrific injuries, including a broken neck, to achieve the ultimate goal in his chosen sport.

Presentations will be given on the following topics:

- technological changes in modern earth moving equipment,
- Residual risk and risk acceptance in risk management and risk

assessments

- Human interactions with plant
- Improvements in plant through the use of finite element analysis techniques
- modern maintenance management strategies
- changing technology in modern diesel engines
- competence of site maintenance people
- simulation training for people in mining
- modern mine winder control systems
- proximity detection in underground mining
- a range of industry projects covering ventilation fans, mine expansions
- modern developments in belt conveying.

Information on accommodation and transport and registration forms are also available on the NSW DPI website at:

www.dpi.nsw.gov.au/minesafety

SA09-01 Driver injured in dump truck rollover

The driver of a dump truck lost control while travelling down a hill, failed to negotiate a bend in the road, rolled down an embankment and came to rest on the edge of a dam. He suffered severe injuries as a result of the incident. It appears the driver tried to change gears while travelling down a 210m grade, with a gross weight of 110 tonnes and while the exhaust brake was engaged. The engine stalled when the transmission was not engaged, so the drive wheels were no longer causing the engine to rotate. As a result, engine braking was lost. Once stalled, he could not put the transmission back into gear to slow the truck. As a result of the engine stalling, the hydraulic power supply for the steering was lost. The driver was unable to steer the truck around the bend at the bottom of the grade. It appears the driver tried to use the service brake, but it failed to stop the vehicle before the bend. Mine operators should provide emergency steering to enable equipment to be brought safely to rest in the event of engine or power failure. Refer to *MDG 15 Guideline for mobile and transportable equipment for use in mines* for further guidance.

SA09-02 Diesel engines run on methane-enriched atmosphere

Methane-enriched mine air passed over two diesel explosion-protected load haul dump (LHD) vehicles which were operating in a return airway during a longwall relocation. The methane caused both diesel engines to increase in speed and rev in excess of maximum engine speed. Both diesel engines suffered major internal damage. No one was injured as a result of the incident. The ventilation arrangements for the longwall panel were disrupted when both sets of doors were opened at the same time, resulting in the return air short-circuiting. The air velocity across the longwall face probably increased, which in turn drew a body of methane from the goaf. The methane-charged air entered the fuel system of the diesel vehicles, causing the resultant out-of-control revving and substantial engine damage. The length of the train was such that both sets of double doors had to be opened at the one time to allow passage. Initial investigations and inspections have indicated both diesel engines were in an 'explosion-protection' condition at the time of the incident. The poor state of the roadway surface in the return roadway contributed to the need for two vehicles to be used to tow the tail gate assembly.

SA09-03 Truck operator fatality

The operator of a road-registered truck was fatally injured when the vehicle's operator cabin was inundated with rock material during loading operations at a surface bin. Road-registered trucks transport reject material from a surface bin to the reject pad. A fleet of trucks was operating on the night shift to transport reject material. The bin operating door system can be operated in manual mode or automatic mode. In automatic mode the control system incorporates traffic lights, radio remote control and light positioning indicators. It is recommended that all mines with truck loading systems incorporating a storage bin and utilising automatic or radio remote control systems should review and assess the risk for the truck loading system, particularly the effectiveness of operator protection if the truck cabin passes under the bin discharge.

SA09-04 Hydraulic injection near miss

While setting up the hydraulic supply lines to install roof support shields on a longwall face during a longwall relocation a near miss eventuated when a fitter removed a staple from a manifold which was still pressurised. The plug (held in place with a staple) was ejected from the fitting and fluid escaped from the hose under pressure in close proximity to employees. To facilitate commissioning of the crusher on the beam stage loader, the longwall hydraulic supply lines isolation was moved from one isolation point to a second isolation point inbye utilising a 350 Bar working pressure ball valve. The fitter tested the circuit on the downstream side for 'no' pressure after closing the isolation valve (test that depressurisation was successful). There was a time delay after the isolation was

performed and before the fitter started to do his job, pressure had built up in the circuit by a leak through the ball valve. The investigation found that the second isolation valve ball valve seat had failed and had allowed the pressure to build up in the circuit. Refer to *MDG 40 Guideline for Hazardous Energy Control (Isolation or Treatment)*.

SA09-05 Mine worker crushed against rib by remote-controlled continuous miner

A continuous miner (CM) was being moved out of a heading when it slewed unexpectedly and trapped a mine worker, who was acting as a cable hand, between the rib and the head of the CM, causing life-threatening injuries. A CM operator was training a new operator and was acting as one of the cable hands. The trainee CM driver tripped over an object on the roadway while walking backwards and fell to the floor. As the trainee fell, he kept one hand on the remote control and unintentionally slewed the CM towards the rib. At the same time the victim had stepped forward and was trapped between the rib and the head of the CM. All mines utilising remote-controlled mining equipment should review risk assessments. Refer to *MDG 5002 Guideline for the use of remote-controlled mining equipment in underground metalliferous mines*.

SA09-06 Fatality: repairs to shearer

A mine worker received fatal head injuries when he was struck by a shear shaft coupling during a routine repair procedure on a longwall shearer. A longwall crew was replacing a broken drive shaft on the ranging arm of a longwall shearer. The drive shaft had a spline on each end and required alignment of the splines to be completely installed. It appears that the drive motor rotated under power, catching and forcibly ejecting the shaft. A coupling housing was flung from the end of the rotating shaft, striking the victim. Mine operators should ensure that maintenance procedures include sufficient safeguards to control all energies present during each phase of the task.

SA09-07 Structural failure and collapse of drill rig mast

The mast on an open cut blast hole drill rig collapsed suddenly when the operator was attempting to lower the mast on a single pass over-burden drill rig before tramping off the bench and up the access ramp. The operator had unlocked the mast locking pins and was lowering the mast when the lower pivot points on the mast failed, causing it to collapse. The drill sustained substantial damage but there were no recorded injuries. After an onsite inspection it was identified the mast pivot points had failed where the bearing blocks were welded onto two RHS (rectangular hollow support) vertical supports. Further visual inspection of the drill rig identified additional cracking at the base of the bearing block support steel work. Pre-operational checks and visual inspections should be conducted on the mast pivot points, pivot shaft and supporting structure for any visual signs. Consult with the plant original equipment manufacturer (OEM) about the frequency of non-destructive testing of all critical structural elements to include, but not be limited to, mast pivot points, pivot shafts, locking devices and supporting structures as well as on modifications that have been made, or are required to be made and ensure design changes are assessed by the plant OEM or a suitably qualified person.

Safety Bulletins

SB09-01 Fatality involving mobile crushing plant

The Queensland Department of Mines and Energy (DME) released a Safety Alert on 24 December 2008 about a worker sustaining fatal injuries when struck by the hopper door of a mobile crushing plant. The worker was in the process of removing the hopper doors so they could be taken off site for repair. All hold-down bolts, supporting cross bars and the rear door had been removed. The hydraulic ram used to raise and lower the hopper door was the only thing holding the door in a vertical position. When the pin was dislodged from the hydraulic ram, the hopper door fell uncontrolled.

A number of safety alerts have been issued in other Australian states that have relevance to the NSW mining industry.

QLD Mines Inspectorate Significant Incident Report 74 Falling borehole pump causes uncontrolled movement of cables and cable reels

A borehole pump had to be recovered after an electrical fault. As the pump was being lifted it was discovered that the cables were twisted around the rod string, so each rod had to be rotated using wrenches as it was lifted out of the borehole. When 130m of rod had been removed (from a total of 450m) the cables were suddenly drawn back down the borehole with two drums pulled rapidly towards the collar. The larger drum ricocheted off the crane outrigger and struck the sheave above where the operators had been standing before striking a truck and coming to rest 15m away. The employees took evasive action to avoid being hit. See the report at www.dme.qld.gov.au/mines

QLD Mines Inspectorate Safety Alert 223 Apprentice injured while maintaining mobile crusher

A third-year apprentice was assisting a plant operator and a mechanical tradesperson to maintain the internal wear plates of a mobile crusher hired from a contractor. When the apprentice dropped a tool onto the conveyor below, it was decided to run the conveyor to recover the tool. The pendant controller was plugged into the machine, and the ignition switch for the onboard diesel motor was turned to the 'run' position. The apprentice started to exit the interior of the crusher by walking along the crusher impactor rotor. The rotor appears to have turned, causing the apprentice to fall onto the impact zone wear plates within the crusher. The rotor struck him in the pelvic region causing multiple fractures. See the report at www.dme.qld.gov.au/mines

ACT Office of Regulatory Services WorkCover Hazard Alert 44

Vehicle loading crane fatality

An employee sustained fatal injuries while unfolding a vehicle loading crane. A full scale investigation is currently being conducted by the Office of Regulatory Services. See the report at www.ors.act.gov.au/workcover

WA Department of Mines and Petroleum Mines Safety Significant Incident Report No 151 Crushed in a pinch point of fixed EWP – fatal accident

While undertaking a pump change and repair work on a fixed scissor lift elevating work platform (EWP), an engineering tradesperson was crushed in a pinch point, sustaining fatal injuries. The deceased was an experienced tradesperson and had been trying to identify the cause of an ongoing problem in the lift ram circuit of the EWP. Work included fitting a new pump and modifications were made to the hydraulic circuit to power the EWP by means of the installation of a manual ball valve control and an external portable pump. The deceased

was found lying face down trapped between the EWP safety prop or bar and the safety prop securing bracket. See the report at www.dmp.wa.gov.au

QLD Department of Mines and Energy Safety Alert 219 Man basket security

There have been a number of incidents in which man baskets have detached and fallen from either tele-handler or integrated tool carrier type machines. The two most recent examples were in underground mines. The first was a fatality at a metalliferous mine and the second a high-potential incident involving two persons working from a man basket. The common factor in these incidents was that the machines were fitted with a quick hitch-type mechanism which allows for the interchange of components. See the report at www.dme.qld.gov.au/mines

WorkSafe Victoria Alert March 2009 Haul truck passenger safety

This alert highlights the dangers of operating heavy vehicles in pedestrian areas, following the fatality of a passenger alighting from a heavy earthmoving vehicle on a mine site. The deceased was working as part of a contract team extending a tailings embankment for a mine. See the report at www.worksafe.vic.gov.au

QLD Department of Mines and Energy Significant Incident Report 72

Lifting lug failure

During maintenance on a cone crusher, two lifting lugs were welded onto the mantle and lifting chains attached. The mantle was lifted out of the crusher using a crane and placed on the ground. The supervisor then attached a lifting chain to one of the lugs and, using a crane, lifted the mantle on its edge so he could inspect the seat for signs of wear. After he had inspected the mantle seat the lug suddenly snapped off and the mantle fell. The 360kg mantle struck his left foot behind the protective steel cap of his boot. He sustained a severe crush injury which resulted in the amputation of all the toes on his foot. See the report at www.dme.qld.gov.au/mines

WA Department of Mines and Petroleum Mines Safety Significant Incident Report No.153

Truck driver fall from deck of Caterpillar 777D haul truck – fatal accident

During normal haul truck operations at an open pit mine, an operator was found on the ground at a location directly below the access ladder to the driver's deck of a Caterpillar 777D haul truck. The truck was stationary in a designated park-up area at the time of the accident. The work area on the deck was clear of obstructions. The operator subsequently died in hospital the following day. Although there was no direct witness to the accident, the circumstances revealed by the investigation indicate that the operator fell from the deck while cleaning the truck's windscreen. See the report at www.dmp.wa.gov.au

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

New audit tools will provide support for mines

Two new audit tools will help metalliferous and extractives mine sites identify their progress in implementing mine safety management plans and compliance with legislation.

NSW DPI Inspectors have recently commenced mine safety management plan assessments of metalliferous and extractives mines. A specific contractor management plan audit will also commence shortly.

The *Mine Safety Management Plan Assessment* and the *OHS Act and Mine Health and Safety Act Legislation Compliance Audit Tool* have been designed to assist mines prepare for these audits by providing an understanding of what NSW DPI inspectors will be looking for and what they will expect from mine sites.

The *Mine Safety Management Plan Assessment* provides a simple evaluation of the development of a mine safety management plan at a mine. It is useful to help identify gaps or deficiencies in the preparation of the plan and will identify additional programs or procedures that may be required or improved.

The assessment asks questions about typical programs and procedures and uses a rating system so mine sites can determine how well they have developed their plan or how

close they are to full development. It also includes regular hints and tips to assist in carrying out the assessment.

The assessment process provides a structured agenda for discussion during an audit which helps mine operators understand the requirements of a mine safety management plan that is relevant to their operation. It also enables an agreed action plan to be implemented if required.

The *OHS Act and Mine Health and Safety Act Legislation Compliance Audit Tool* is a useful reference to navigate through mining legislation and to find relevant sources of information. It includes a user-friendly table of contents where all sections and clauses from occupational health and safety and mine health and safety legislation have been combined, sorted and placed in a systematic safety system structure. It also includes a table providing the audit criteria, questions the auditor should ask, examples of what an auditor will look for to demonstrate compliance and a notes space to record outcomes of the audit and what actions need to be taken.

The tools are available on the NSW DPI website at:

www.dpi.nsw.gov.au/minesafety

UV radiation a health issue for mines

A recent study that found outdoor workers in New Zealand are exposed to significantly higher than recommended levels of ultraviolet radiation (UV) from the summer sun serves as a caution for outdoor workers on NSW mine sites.

The University of Otago found that workers participating in the study received an average daily exposure of 5.3 SED during the high risk period of 11am to 4pm. The internationally recommended level is 1.08 SED while an exposure of around 1.5 to 3.0 is capable of causing sunburn to someone with unprotected fair skin. Only 5% of the workers participating in the study were wearing a wide-brimmed hat and only one-third were wearing sunscreen. The study involved 77 construction, horticultural and road workers from 14 different workplaces during the 2007 summer. Study co-author Dr Reeder, Director of the Cancer Society Social and Behavioural Unit at the University, was concerned given that excessive UV radiation is associated with eye disease and skin cancers.

"Employers have an important role to play in protecting their workers from the summer sun. For example, since sunburning UV radiation is strongest around the middle of the day, providing practical and comfortable shade at the worksite during lunch breaks could significantly reduce a workers daily UV radiation dose," Dr Reeder said.

The serious health issue of UV exposure on worksites has also been raised by the NSW Health Working Party and is included as one of their nine priority health issues for NSW mine sites. Reducing worker exposure to UV radiation should be incorporated in every mine site's health management plan. Further findings from the study can be found in the latest issue of the international scientific journal *Public Health*. See pages 4/5 for information for NSW mine sites on developing a health management plan.

Fines for faulty truck braking system

In February 2006 a flat bed truck loaded with supplies was being driven down the decline entrance to Perilya Mine. The truck was owned and maintained by Symsong Pty Ltd, who also employed the driver and passenger. The truck met two light vehicles coming the other way. Despite the use of the foot brake and the emergency brake button, the truck continued to descend the ramp, without slowing or stopping, in first gear. The driver turned into the wall of the ramp in order to stop the vehicle. Investigation found a number of defects in the braking system, including excessively worn parts, missing elements, excessive build-up of residue in all four air tank reservoirs, and the slack adjuster mechanism caked with mine residue.

In his judgement, Magistrate Hart noted:

"I am satisfied that there is a need for a general deterrence factor in any penalty imposed by the Court. In this case, inspections ... revealed a number of specific faults that were clearly associated with wear and tear over a period of time ... There is a need for participants in industry to have their attention clearly drawn to the statutory obligation upon an employer to provide safe systems of work for its employees and others, and this includes the provision of plant and equipment which is safe to use. It is blindingly obvious that a heavy vehicle used to carry heavy loads down steep gradients inside a mine must have a secure braking system or systems, and regular checking and maintenance by qualified persons, to ensure that the brakes of the vehicle are in full working order at all times."

Magistrate Hart fined the company a total of \$30,000. A moiety was granted to the prosecutor and costs.

CALENDAR OF EVENTS

Mechanical Engineering Safety Seminar, 5-6 August 2009, Waterview Convention Centre, Sydney Olympic Park. For further information visit www.dpi.nsw.gov.au/minesafety, email minesafety.seminars@dpi.nsw.gov.au or call 02 4931 6624.

Electrical Engineering Safety Seminar, 11-12 November 2009, Waterview Convention Centre, Sydney Olympic Park. For further information visit www.dpi.nsw.gov.au/minesafety, email minesafety.seminars@dpi.nsw.gov.au or call 02 4931 6624.

Mine Operators Workshops, held regularly, next held 6-7 August 2009, Morilla Street, Lightning Ridge, contact Janet Town, NSW DPI, 02 6829 0678.

Mine Safety Awareness Course, held regularly, next held 4-5 August 2009, Lightning Ridge Bowling Club, contact Janet Town, NSW 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, NSW 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 NSW 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, NSW 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/minesafety 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 6776 0309 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 02 6571 8708.

Southern and Western Coalfields Electrical Engineers meeting, TestSafe, Londonderry, held quarterly (limited numbers), contact Bob Kennedy, Inspector of Electrical Engineering 02 4227 1699 or 0417226 362

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, held at various venues and dates throughout the year, contact Bernard Gittins, Inspector of Electrical Engineering, 02 6360 5351 or 0447 618 330

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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