I&I NSW

February 2010

NSW mine safety update

Promoting safety in the NSW mining industry

Fatigue guide to help mining industry

A significant milestone has been reached by the NSW Mine Safety Advisory Council (MSAC) with the release of the Guide to the development and implementation of a fatigue management plan in December.

MSAC represents mining industry employers, employees and government and advises the Minister on mine safety issues.

The guide was developed jointly by the major mining industry stakeholders and is designed to assist the State's mining and extractives industry manage the significant risks to health and safety posed by fatigue.

Fatigue has been a long-standing issue within the mining and extractives industry and has been identified as a contributing factor to many injuries and fatalities.

The 2004 Wran Mine Safety Review identified hours of work and fatigue management as a priority issue. The Digging Deeper research project, which flowed from the Wran Review, recommended a strategy to educate and assist industry in addressing fatigue issues. The fatigue management guide is a major element in that strategy.

The guide:

- identifies who needs a plan
- explains how to develop a plan
- explains the process of consultation for all relevant parties
- identifies everyone's role
- identifies the need for a policy commitment to manage fatigue
- is risk management based, requiring:
  - hazard identification
  - risk assessment
  - control of the risks
  - evaluation of the effectiveness of the risk control process
- provides risk assessment advice with triggers and action points
- requires all mines with fatigue risks to have a documented fatigue management plan
- applies to all employees and contractors working on sites
- explains required training, documentation, and record keeping
- provides practical advice on how mines, through consultation, develop and implement a fatigue management plan.

Mining operations will be able to use this extremely useful guide to ensure they properly manage fatigue and improve their occupational health and safety performance.

The guide will be followed up with an education strategy to raise awareness and an assistance program to provide practical approaches to managing fatigue.

The release of the guide addresses two of the recommendations of the Digging Deeper Report and demonstrates the vital role of MSAC within the mining industry in setting a strategic direction and delivering practical resources and information.

The MSAC partnership began to address fatigue management in 2007 with the formation of the Fatigue Working Party. MSAC endorsed the guide in August 2009 and is now working to develop an educative and assistance program, led by Industry & Investment NSW, to support the guide's implementation. Later there will be a follow-up of industry use of the guide. The guide can be downloaded at:

www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs

Safety awards for quarry operators

Peter Watson of Hanson Quarries accepts the Quarry OHS Performance award from Rodger Seaman of IntoTraining. (Photo: John Nichols CCAA)

Quarries which have demonstrated outstanding commitment to addressing OHS issues have been recognised at the Cement Concrete and Aggregates Australia (CCCA) NSW Environment Health and Safety Awards.

The awards are co-sponsored by the NSW Mine Safety Advisory Council and reward and encourage best practice in the areas of health and safety in the heavy construction materials industry.

More than 170 people attended the awards dinner at Sydney's Olympic Park during October.

The Quarry OHS Performance Award for outstanding performance in the management of risk within a quarry was won by Hanson Quarries, Eastern Region for their Zero Harm program.

Zero Harm is a behavioural-based observation and feedback process where employees observe each other and give one-on-one feedback regarding safety-related behaviours. Observation data was collected and analysed to identify where barriers to safe behaviour needed to be addressed. The program has resulted in a significant decrease in recordable injuries across Hanson's Metro Quarry operations.

continued page 5

NSW GOVERNMENT | Industry & Investment

In this issue...

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Thornton laboratory's new toxicity testing equipment.

Toxic test to identify material hazards

New toxicity-test equipment at the Mine Safety Technology Centre (MSTC) in Thornton will help industry determine the levels of toxic emissions from burning materials.

The equipment is capable of testing materials to Australian Standard 60695.7-2006–Fire Hazard Testing and can be used to test, for example, polymeric compounds and plastic components used on conveyors.

The test simulates the behaviour of a material when subjected to three different fire scenarios:

- a low temperature combustion fire
- a developing fire
- a fully developed fire with low ventilation.

Different gas mixtures can develop from the various fire scenarios and affect the toxicity of the fire effluent. The MSTC will measure oxygen, carbon monoxide, carbon dioxide, nitrogen oxides and acid gases generated during the test.

The results of a test can be used to estimate the fire toxic potency for a given installation and hence the hazards of using that particular material.

The main components of the equipment are: the sample pushing system, air supply distribution controllers, tube furnace, gas receiving box and the gas analysis train. Samples will be placed in a quartz glass 'boat' and pushed through the furnace. The toxicity of the resulting gas will then be determined.

For further information on this test or the work of the MSTC please ring (02) 4924 4000.

Workshops zero in on health issues

The new Mining Industry Assistance Unit (IAU) has commenced its program of workshops promoting the release of new industry guidelines on health management.

IAU members attended the NSW Minerals Council OHS Forum in Dubbo in October to promote the NSW Mine Safety Advisory Council-endorsed Guide to the management of musculoskeletal disorders and the Guide to the development and implementation of a health management plan.

Practice Leader Ergonomics, Julie Pengelly facilitated a workshop on the management of hazardous manual tasks, highlighting the process and tools captured in the new musculoskeletal guide. The workshop was an interactive session focusing on:

- hazardous manual tasks in the mining industry
- risk factors contributing to musculoskeletal disorders
- provision of a targeted manual task risk assessment tool
- controlling hazardous manual task risks.

OHS Systems Practice Leader Tony Anthony conducted a workshop focusing on the implementation of a health management plan.

Objectives of the workshop were to:

- provide a background on the current focus on health management in NSW
- examine elements in the regulator's approach (the guide and a toolkit)
- examine overcoming barriers at site level
- discuss health hazards and risk control, using a noise example.

Future workshops are planned as a follow-up to the proposed industry-wide briefings on the guides in 2010.

The IAU is currently working on a Health Management Plan Tool Kit that will provide practical assessment tools and worksheets to assist industry implement a systematic approach to health management at mine sites.

The unit is also developing a workshop program on fatigue management to support the new MSAC guide on fatigue management.

Further information about the Industry Assistance Unit can be found at:

www.dpi.nsw.gov.au/minerals/safety/resources/industry-assistance-unit

Information on upcoming workshops can be found at:

www.dpi.nsw.gov.au/minerals/safety/resources/training-and-workshops

Managing human error

As part of its strategy to reduce incidents, injuries and fatalities at mine sites, Industry & Investment NSW (I&I NSW) has been conducting workshops on the management of human error.

The objective of the workshops is to highlight an understanding of the types of human error and the role it plays in accidents. Possible managerial responses to reduce the risk of incidents occurring and reoccurring are looked at in the workshops.

The workshops provide information on:

- safety management systems
- risk (ALARP, etc)
- people, environment and equipment
- how people make decisions
- designing engineering controls to cater for human error

Held at various locations throughout NSW and run by the Mine Safety Operations of I&I NSW branch in conjunction with the Jim Knowles Group, the workshops are intended for everybody in the industry. Large mines, small mines, including quarries and gemstone mines, and mining contractors are all invited to attend.

Participants at the human error workshop.

The free workshops have been well received and well attended with many now oversubscribed. Numbers are limited so book early to ensure your place.

The next workshop will be held in Kurri Kurri on 25 February 2010. Further information is available from the I&I website at:

www.dpi.nsw.gov.au/minerals/safety/resources/seminars-and-conferences

Check inspectors urged to actively address OHS issues

Health and safety issues were the focus at the annual Check Inspectors Conference at Eastern Creek during November.

More than 100 check inspectors from across the state attended the event conducted by Industry & Investment NSW (I&I NSW).

NSW Mine Safety Advisory Council chairman Norman Jennings opened the conference and told delegates that, in partnership with unions, industry and government, the Council was working towards the industry achieving world-leading OHS through a sustained change in health and safety culture.

A number of publications have recently been endorsed by the Council, including the Guide to managing musculoskeletal disorders, the Guide to the development and implementation of a health management plan, the Guide to the development and implementation of a fatigue management plan and the Tool to Review Safety Incentive Schemes. Mr Jennings encouraged delegates to remember the 'H' in OHS.

I&I NSW Inspector of Electrical Engineering Owen Barry spoke about shocks and burns resulting from damaged cables, saying that an improved safety approach based on risk management was needed to combat the problem.

The importance of safety awareness was brought home to delegates by the presentation of Ben Houlison, who suffered a permanent spinal injury while working in an underground coal mine. He encouraged young recruits to stay aware and to speak up if they have concerns.

"A couple of minutes of feeling awkward can save a lifetime of pain," Ben told delegates.

Steve Costello, Barry Riley, Trevor Schram and Peter Tatton partake in a risk assessment exercise.

NSW Mine Safety Advisory Council Chairman Norman Jennings opens the conference.

Mark Shepherd and Mark O'Neill of Coal Services gave presentations on dust control and health surveillance respectively. A brief history of lung disease in the mining industry revealed that in 1947, 16 in 100 miners presented with lung disease, but none have presented with the disease during the past 15 years.

Mark Shepherd attributes the good record to improvements including independent monitoring, which is unique to the industry in NSW. He reminded participants that the dust you inhale today won't affect you now, but may do so in the future.

Pneumoconiosis (black lung) and silicosis, two major lung diseases, result from inhaling coal dust or rock dust containing silica. Silica particles get deep into the lungs and cause scar tissue, thus making it potentially more dangerous than coal dust. Approved respirators are essential for anyone working in a dusty environment.

A booklet on airborne dust is available on request from Coal Services which can also give tailored presentations on dust management to mine sites. Contact Mark Shepherd at Coal Services for further information. Mark O'Neill informed participants that for miners, working in certain hazardous conditions such as in the presence of silica dust, health surveillance is compulsory.

However, for those in non-hazardous conditions, health surveillance is equally important and can assist in promoting good health, safety and quality of life. With 8 in 10 workers suffering back pain and with musculoskeletal disorders being the second most common reason for a visit to a GP, health has become a priority issue for the mining industry.

Heather Jackson, manager of the I&I NSW Industry Assistance Unit, delivered a lively interactive session involving participants doing health risk assessments for their workplaces. The Industry Assistance Unit will help the mining industry achieve world-leading OHS and is in the process of developing a toolkit to aid mines in the development and implementation of a health management plan. Further information can be found on the I&I NSW website at:

www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/

continued from front page

The Concrete OH&S Performance Award was awarded to Boral Concrete Metro for their traffic management plan.

The OHS Practical Innovation Award is for outstanding achievement in developing and successfully applying an original solution to a key OHS management issue in the industry. Awards were presented for both quarry and concrete innovation. The quarry winner was Hy-tec Austen Quarry, Hartley for traffic management while the concrete winner was Hanson, Enfield for their liquid colour system.

Concrite, Blacktown and Hy-tec, Glendenning were joint winners of the Guarding and Access award. This award is for outstanding achievement in the development and implementation of guarding and access solutions to manage fixed plant hazards within the workplace at a site level.

CCCA chief executive officer Ken Slattery said the awards served not only as an important recognition of the achievements of individual companies, but also set benchmarks for all industry players.

CCAA member company trucks form an impressive guard of honour at the 2009 NSW Environment Health and Safety Awards held at Sydney Olympic Park. (Photo: John Nichols CCAA)

"On behalf of CCAA, I congratulate the 2009 winners and highly commended entries, and indeed, all companies that entered projects in the 2009 Environment, Health and Safety Awards, for their commitment to continually raising the bar."

Watch your back!

A new guide will help the NSW mining industry better manage the risks associated with musculoskeletal disorders.

The Guide to the management of musculoskeletal disorders in the NSW mining and extractives industry has been endorsed by the NSW Mine Safety Advisory Council (MSAC) following extensive industry consultation and expert advice.

Musculoskeletal disorders are a serious health concern for the NSW mining industry, accounting for more than 40 per cent of workers compensation claims.

This new 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.

What is a musculoskeletal disorder?

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

- sprains and strains of muscles, ligaments and tendons
- back injuries, including damage to the muscles, tendons, ligaments, spinal discs, nerves, joints and bones
- joint injuries or degeneration, including injuries to the shoulder, elbow, wrist, hip, knee, ankle, hands and feet
- bone and nerve injuries
- soft tissue 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 and extractives 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.

An education campaign including briefing sessions and explanatory workshops is being planned by Industry & Investment NSW's Industry Assistance Unit. Details of the campaign will be available on the website www.dpi.nsw.gov.au/minesafety in early 2010.

The Guide to the management of musculoskeletal disorders in the NSW mining and extractives industry can be downloaded at:

www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/musculoskeletal-disorders

NSW MINE SAFETY ADVISORY COUNCIL

NSW Police commanders, inspectors and detectives with I&I NSW officers at the recent one-day training program

Police learn more about role of inspectorate

Industry & Investment NSW (I&I NSW) officers from Mine Safety Operations, the Investigation Unit and the Prosecutions, Litigation and Advisings Unit recently provided a one-day training program to NSW Police commanders, inspectors and detectives from the Hunter and northern NSW regional commands at the Argenton Mines Rescue Station.

The liaison between I&I NSW and NSW Police is undertaken to maintain awareness of the statutory role of the two agencies and industry stakeholders when attending a mining incident.

The program included presentations on the legislative framework of the NSW mining industry, the role of I&I NSW inspectors and investigators and a review of MDG 1029 Guidelines for agency coordination during body recovery at NSW mines.

The program benefitted from presentations by industry stakeholders including a CFMEU industry check inspector and the Mines Rescue Service.

The program also included information related to the safety of NSW Police officers when attending the scene of mining incidents.

Coal Services Pty Ltd generously provided the virtual reality training theatre to demonstrate three-dimensional incident scenarios that may be required to be investigated by NSW Police as the Coroner's representative.

The program was strongly supported by the NSW Police Hunter Command and an outcome of the program is to develop presentations to provide information at NSW mining industry forums in 2010.

New publications

Fatigue management guide

The Guide to the development and implementation of a fatigue management plan provides practical advice on how mines, through consultation, develop and implement a fatigue management plan. Download at:
www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/fatigue

Electrical legislative compliance audit checklist

This audit tool aims to help NSW metalliferous and extractive mine operations assess their compliance with the electrical provisions of the MHSA and Regulations and the OHS Act and Regulations. Download at:
www.dpi.nsw.gov.au/minerals/safety/resources/tools

Contractor management audit checklist

The audit checklist helps assess compliance with the Contractor Management Plan provisions of the Mine Health and Safety Act 2004 and Mine Health and Safety Regulation 2007. Download at:
www.dpi.nsw.gov.au/minerals/safety/resources/tools

Reporting an incident

A new poster outlines how to report on a fatality or incident at your mine or quarry which is prescribed by the Mine Health and Safety Act 2004, or the Mine Health and Safety Regulation 2007. Download at:
www.dpi.nsw.gov.au/minerals/safety/resources/tools

Musculoskeletal disorders guide

The Guide to the management of musculoskeletal disorders in the mining and extractives industry 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. Download at:
www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/musculoskeletal-disorders

Review tool

The Tool to review safety incentive schemes in the mining and extractives industry in NSW aims to assist the industry in the transition from safety incentive schemes that focus on lag indicators to schemes that focus on lead indicators. Download at:
www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/safety-incentive-schemes-and-production-bonus

Other relevant notifications

Notifications required to be given pursuant to the MHSA and Regulations and the OHS Act and Regulations and the Explosives Regulation 2005 are outlined in a new poster. Download at:
www.dpi.nsw.gov.au/minerals/safety/resources/tools

James Catt from the Queensland Department of Employment, Economic Development and Innovation addresses delegates at the Electrical Engineering Safety Seminar.

Kris Kukulovski, Stewart Blaney and Simon Ryan enjoying the electrical engineering seminar.

Safety begins at the design stage

Delegates at the 2009 Electrical Engineering Safety Seminar were encouraged to incorporate safety into their future designs.

More than 300 delegates attended the two-day seminar held at Sydney Olympic Park's WatervieW Convention Centre during November. The theme of the seminar was Safety by design.

Local and international speakers gave an impressive array of presentations focused on improved design of equipment and systems in the mining industry. Topics included proximity detection systems, arc blasts, high voltage protection and industry standards.

One presentation that captured much attention was a video re-enactment of an arc flash incident at West Cliff mine where two electricians suffered third degree burns. The message from this presentation was 'don't be complacent – it can happen to you'. It also reinforced the overarching electrical engineering message from Industry & Investment NSW Mine Safety Operations branch of 'no live work'.

Eric Haardt from Hunter Valley Operations showed the damage incurred by an arcing fault in the fuse compartment of an auxiliary transformer. An investigation into the incident highlighted inadequacies in the protection systems. The presentation emphasised the need for a functional safety management plan for all equipment on mine sites and encouraged the examination of protection systems on ageing equipment.

International speaker Jason Hart, the chief executive officer of Nautilus International, outlined his company's work on proximity detection systems for underground mining applications using magnetic fields. Complementing this presentation, Martin Smith of IIT Solutions demonstrated SAFEmine, a GPS-based traffic alert and collision avoidance system for vehicles in open cut mines and quarries.

A common link between the presentations was the reference to Australian and international standards in developing new systems or equipment. John Rose of Jandar Consulting Services encouraged delegates to become involved in developing at least one standard during their career by joining a standards committee and contributing their knowledge.

For a copy of presentations from the seminar visit

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

Recognition for long service in improving mine safety

Industry & Investment NSW staff Paul Scully, Mark Freeman, Tim Martin, Graham Cowan, Glyn Macdonald, John Waudy and Paul de Gruchy (pictured) were recognised for their continuing long service to the department in the Mine Safety Inspectorate and the Investigation Unit during a recent Staff Achievement Awards presentation. Their tenures range from more than 10 years to more than 40 years.

Incentive schemes under the microscope

A new publication to help the mining industry review safety incentive schemes is now available.

The Tool to review safety incentive schemes in the mining and extractives industry in NSW has been endorsed by the NSW Mine Safety Advisory Council (MSAC).

Mining industry stakeholders have come to an agreement that safety incentive schemes need to move to rewarding employees who take positive steps to improve OHS on sites, as opposed to being seen as penalising them for reporting injuries.

The tool includes:

- principles that were developed and agreed by the major stakeholders in the NSW mining industry
- a checklist to help sites review their safety incentive schemes
- an action plan to address issues arising from the checklist procedure.

The tool aims to assist the industry in the transition from safety incentive schemes that focus on lag indicators, to schemes that focus on lead indicators. Importantly, in the longer-term, with world-leading OHS culture, safety incentive schemes may no longer be required.

Industry stakeholders, through MSAC, have also committed to assessing the progress of the transition three years after the release of the tool.

Review of practices

The 2004 Wran Mine Safety Review recommended an independent assessment of production bonus and safety incentive schemes be undertaken. MSAC commissioned Shaw Idea to conduct research on this and other issues in the NSW mining and extractives industry, now known as the Digging Deeper Project.

The Digging Deeper Project concluded that:

1. Recognition and reward schemes should be reviewed and developed in line with good practice principles.

2. The NSW mining industry should no longer pay workers in the industry money or equivalent benefits as a result of achievement of particular targets for outcome data, for example lost time injury frequency rates and medical treatment injury frequency rates.

3. Sites with production bonus schemes should carefully review them to ensure that the payment is not creating a disincentive to address adverse OHS consequences of current working arrangements.

The tool is a result of extensive consultation and demonstrates the commitment that union and employer stakeholders have to the MSAC partnership.

A copy of the tool is available at:

www.dpi.nsw.gov.au/minerals/safety/world-leading-ohs/safety-incentive-schemes-and-production-bonus

Rod Morrison retires from Mine Safety

Rod Morrison, the Director of Mine & Forest Safety Performance at Industry & investment NSW, has hung up his boots after 45 years in the NSW Public Service,

Rod spent a long and distinguished career in the public service and was a worthy recipient of the Public Service Medal in 2009. Recently, among an impressive field of nominees, Rod was named Highly Commended in the Outstanding Contribution to Mining category at the Australian Mining Prospect Awards.

Rod is noted for his work on legislation to improve workplace safety in the NSW mining industry.

During the past decade, Rod managed a wide and changing reform agenda, which has helped the mining industry achieve significant improvements in safety performance.

Rod oversaw the development of modern, risk-based mine safety legislation that focuses on a general duty of care and which enables the industry to manage mining risks in a systematic manner.

He has been deeply involved in the rejuvenation of the NSW Mine Safety Advisory Council and the establishment of the Mining Industry Assistance Unit.

The reform program managed by Rod made a significant contribution to the reduction in the number of fatalities and serious injuries in the NSW mining industry during the past decade.

"It is great credit to the industry and to the unions that the improvements that have been made have been done in a collaborative way," Rod said.

"I have met some wonderful people through my work and forged many lasting friendships. I am proud to have served my state for so long but look forward now to being able to spend more time with family and friends by the water and to indulge in some travelling.

"Thank you to all my hard working colleagues for their input and support over the years. What has been achieved so far has been achieved together. There is still much to be done but I am confident that future tasks have been left in capable hands."

Rod Morrison, former Director Mine Safety Performance, I&I NSW.

Safety Alerts

SA09-08 Misfire of explosives

There was a series of three misfires at an underground colliery using permitted explosives during the full-face shotfiring of a dyke. The mine had been operating a roadheader in developing new entries. Upon hitting a dyke the decision was made to use full-face shotfiring. The initial shotfiring proceeded without incident, but as the job was nearing completion there was a series of three misfires where, despite correct initiation of all detonators, unexploded cartridges or parts of cartridges were found during inspection / mucking out. The most likely cause was desensitisation of the explosives. Desensitisation can occur through transmission of the shockwave from an earlier firing hole, as well as physical deformation of the shothole from the earlier firing hole. In this case the most likely cause was a tight shotfiring pattern with high energy levels. This would also have been impacted by the changing ground conditions which resulted in softer ground at the time of the misfires. All mines should ensure shotfiring patterns are designed or reviewed by personnel with the relevant technical expertise and knowledge of blasting in underground coal mines. This is particularly important with full-face firing. Mines should implement an audit system to ensure that the drilled face matches the design of the shot.

SA09-09 Rock falls from elevated conveyor onto worker's head

A 10 kilogram rock fell from an overhead elevating conveyor and hit the safety hat of a nearby worker resulting in head injuries, a broken tooth and injury to the area between the worker's head and shoulder. The worker and his supervisor were investigating a noisy bearing on a conveyor pulley at the gravity take-up. The worker had completed greasing the bearing and had stepped back from the side of the operating conveyor when the rock hit him. The elevating conveyor was transporting rock from a crusher. The conveyor was tracking to one side and a section of the belt was narrower than it should be. The operation of the crusher was such that localised overloading of the conveyor was occurring periodically. Some of the material being conveyed was prone to rolling off the conveyor, particularly when there was little material on the conveyor. During the production day following the accident, rocks were observed to still be falling from the conveyor. A considerable quantity of rock was observed to be lying on the walkway next to the conveyor, on steel sections of the conveyor structure, on electrical cables and on the ground on both sides of the conveyor for much of the length of the conveyor. A number of steel steps on the walkway at the side of the conveyor were damaged. A rock deflection guard had been installed to protect road traffic but this covered only a small area under the conveyor and the deflector was not fitted with sides to prevent rocks deflecting sideways at right angles to the conveyor. Refer to Australian Standard AS 1755-2000 Conveyors-Safety requirements for further information, in particular section 3.

SA09-10 Directional boring fatality

A sub-contractor suffered fatal head injuries when he was apparently struck by recoiling polyethylene (PE) pipeline. PE pipe was being installed beneath a creek using the 'directional boring' (horizontal directional drilling) method. A pilot hole was drilled then backreaming began, pulling a line of 200mm PE pipe behind the reaming tool. During this operation a cross-over sub failed and the drill-string eparated from the reamer assembly and PE pipeline. Preparation commenced for recovery of the pipeline by pulling it back through the borehole from the entry-end. A chain was tied to the pipe and the other end connected to an excavator. During the pulling process the chain broke. It appears that the elastic strain in the pipe recovered violently. The deceased person was standing in the zone of pipeline recoil. Refer to Safety Bulletin SB09-03 Broken pull chain results in fatality.

SA09-11 Rail loading bin spill

An uncontrolled body of coal and slurry discharged from a rail loading bin, resulting in the bin control room glass window being broken and the room being inundated with slurry and coal lumps. Two maintenance workers were cleaning out the bin in readiness to complete maintenance and repairs around the bin discharge. Prior to the incident, water and coal slurry from the 'run of mine' bin had been conveyed into the rail loading bin. The hydraulically operated bin gates were being 'jogged' to free up the slurry in the rail loading bin when an uncontrolled mass of slurry ejected through the gates, resulting in large pieces of coal material and slurry smashing the control room window and entering the control room. The force of the discharge dislodged chairs, computers and other equipment onto the floor. Large shards of glass from the broken window were also propelled into the control room. It is probable that the slurry mass was deflected by a cross beam, which formed part of the frame of the rail loading chute. That chute had been moved from under the gates, placing the support beam directly under the gates. All operators should review operational and maintenance tasks associated with coal storage and rail loading bins; check the engineering integrity and location of control stations associated with bin operations; and, check the rating of any glass panels or windows in the control rooms.

SA09-13 Light vehicle drives off bench in open cut mine

A light vehicle drove onto a bench in an open cut mine and then, when exiting the bench, drove off the low wall. A driver of a light vehicle was requested to escort a contractor's vehicle onto a bench so the contractor could perform routine maintenance work. The conditions at the time were bright daylight during the middle of day, and dry weather. It was the operator's first shift back at work after a break. The operator requested permission from the open cut examiner to go through witch's hats that were placed at the foot of the ramp to access the bench. He drove onto the bench where he left the contractors to perform their work. While exiting the bench he drove over a 4.5 metre low wall and the vehicle landed on its roof. The operator had been on the bench for approximately one minute. The operator confused a small amount of material on the bench for the windrow of the ramp. The ramp windrow finished at the same point as the edge of the top of the low wall. The top of the ramp was not clearly delineated. The edge of the low wall was not delineated . There was no barrier to warn the operator he was approaching the edge of the ramp. It is recommended that all personnel notify the relevant mining official when they are entering a work area; all operators should receive positive communication from the mining supervisor and any machinery operator in the work area they are entering; operators should be familiar with their work environment; an inspection should be undertaken to ensure that surface transport management plan requirements are in place - the surface transport management plan should be reviewed and, if found deficient, should be strengthened; all operators should wear seat belts while operating machinery.

continued next page

continued from page 9

SA09-14 Crane A-frame mast falls on rigger

A rigger was injured when a crane A-frame mast fell onto him as he lent across the fly jib to couple the electrical connections for the overwind sensor on the hoist rope. Crane operators were making changes to the crane fly jib configuration in preparation for the next series of lifts. The crew had shortened the fly jib and were preparing to shorten the pendent wires from jib to fly. This required the pendent wires to be disconnected, which left the A-frame mast in an unsecured vertical position. As the rigger lent over the fly jib to couple up the overwind electrical sensor, the A-frame mast fell forward, landing on his upper torso and causing injuries, including rib fractures. If the rigger was in a position closer to the head of the main jib the incident outcome may have been more severe, including a fatality. It is recommended that documentation on safe operation of plant be provided; that operators are competent and that lift studies which require configuration changes to the crane jib, fly jib or other parts make reference to safe work procedures for the task.

Safety Bulletins

SB09-02 Mobile equipment contact with high-voltage overhead powerlines

The Western Australian Department of Mining and Petroleum released Safety Bulletin 85 about mobile equipment contact with high-voltage overhead powerlines. In the current year, four cases have been reported to the Western Australian Department of Mining and Petroleum, where mobile equipment has contacted powerlines. Fortunately none were fatal but it is timely to issue reminder to all employers, managers, supervisors, contractors and workers responsible for the use of cranes, excavators, drills, elevating work platforms (EWPs) or similar plant on mine sites.

For further information visit:

www.dmp.wa.gov.au/ResourcesSafety

SB09-03 Broken pull chain results in fatality

Directional boring contractors were withdrawing polyethylene pipe (PE) from beneath a creek. To retrieve the pipe, it appears that a nominal diameter 10mm high-tensile double-legged chain was tied to the pipe via a clove hitch and the other end of the chain attached to a 20 tonne excavator. It appears when the excavator pulled to retrieve the pipe, the high-tensile chain broke and the PE pipe recoiled (refer to SA09-10 Directional boring fatality). It is recommended that all mines review current towing, pulling and snigging standards (activities).

SB09-04 Human interaction with backhoes and excavators

Statistical incident data collected by Industry & Investment NSW in the four years to August 2009 identifies significant numbers of the incidents reported related to backhoe and excavator operations. Analysis of the incidents has identified that serious bodily injury was an outcome due to human interaction in and around the work zone of backhoes and excavators. There were approximately 73 reported incidents involving backhoe and excavator-type equipment (not including fires on the machine). Nineteen of the incidents resulted in injury to either the operator or a person in the vicinity of the backhoe or excavator. The injuries were significant including one fatality, a person with multiple skull fractures resulting in brain injury and persons receiving fractures to the spine, pelvis and arms and crush injuries.

SB09-05 Failure of mobile equipment braking systems and procedures

An unacceptable number of incidents involving the failure of mobile equipment braking systems, maintenance systems and operating procedures at mines have resulted in serious injuries and fatalities. Investigations have shown that poor workplace practices and inappropriate management systems have contributed to the failure - to complete effective prestart checks; of maintenance management systems; to wear seatbelts; to follow safe operating procedures. A number of serious incidents involving mobile equipment have occurred where injury to operators has been significantly reduced or eliminated through the correct use of seatbelts. Industry & Investment NSW has previously provided guidance (see references below) to assist mines to identify and address these failures. Mine operators are reminded of their obligation under section 8 of the Occupational Health and Safety Act 2000 to provide a safe workplace and to provide plant that is safe and without risks to health when properly used. It is recommended that all mines that operate mobile equipment, or employ contractors to operate mobile equipment, should carry out prestart checks, have maintenance management systems in place, ensure seatbelts are fitted, worn and inspected and have safe operating procedures in place.

Safety Alerts and Safety Bulletins

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

If you would like to receive an email copy of Safety Alerts and Safety Bulletins visit www.dpi.nsw.gov.au/minerals/safety/signup and enter your details.

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

Important lessons for operators and contractors

In February 2010, Centennial Coal Company Limited, Centennial Angus Place Pty Limited and Fuchs Lubricants (Australasia) Pty Ltd were fined a total of $784,000 following the death of Kevin Hansen in July 2006. Mr Hansen was fatally injured while taking high pressure fluid samples from longwall hydraulic equipment.

Mr Hansen was employed by Fuchs Lubricants (Australasia) Pty Limited, who had been contracted to Centennial Coal to supply oil products and services to the Angus Place mine.

His Honour, Boland J, President, found that Mr Hansen had been exposed to a serious risk that "had a high probability of causing serious or fatal injuries" and that the defendant companies had failed, amongst other things, to: adequately instruct, inform, train or supervise workers; adequately label machinery; conduct a risk assessment; manage contractors; and, have safe work procedures for new plant.

His Honour found that the mining companies could not rely on an expectation that Mr Hansen's employer would ensure his safety. They had an independent duty to ensure that he was not exposed to any risk whilst working at the mine.

He also stated that similarly employers sending an employee to another place of work over which they have little control must ensure that the workplace and the work do not pose a risk to the health, safety or welfare of their employee.

Unsuccessful appeal

On 20 December 2000 at the Bellambi West Colliery, whilst setting timber, a section of roof fell resulting in fatal injuries to Gregory Aspinall and serious injuries to another.

The mine manager at the mine and a director of the mining company, Allied Coal Pty Ltd, were both charged under Section 15(1) of the *Occupational Health and Safety Act 1983* by virtue of Section 50 of the Act.

The proceedings against the individuals were dismissed on 14 April 2008. The decision was appealed before the Full Bench of the Industrial Court.

Leave to appeal was granted, but in November 2009 the Court dismissed the appeal and upheld the decision of not guilty by the first instance Judge. The court concluded that the primary Judge had not erred in finding that the relevant particulars of the charge had not been made out and therefore the prosecutor had failed to make out their case.

Quarry fined $214,000 in fatality matter

In June 2005, Darren Smith was fatally injured when the off-road dump truck he was driving left the haul road and rolled down a dump face. Charges were laid against the quarry operator, and three persons concerned in the management of the company.

Hunter Quarries and the Quarry Manager entered guilty pleas to the charges, and judgment was handed down on 30 October 2009 by Her Honour Backman J.

Hunter Quarries have been fined $214,500.00, and the quarry manager was fined $21,450.00.

Proceedings against the two others will commence in February 2010.

In sentencing the court held the view that the objective seriousness of the offence is very high and that much of the evidence led by the defendants did little to diminish this. The court, in view of the seriousness of the offence refused to consider the application of s 10 of the *Crimes (Sentencing Procedure) Act 1999* to the defendants. (s 10 allows for a finding of guilty to be proven but no conviction is to be recorded. This is only available when the defendant makes out a number of special considerations for the court to take into account.)

Consequently both fines are of a substantial nature.

Risk exposure brings heavy fines

In March 2006 two workmen were exposed to risk when the elevated work platform (EWP), in which they were working, trammed into the shovel bucket that they were working on. One man received crush injuries to right hand index finger and the other received minor bruising.

Charges were laid against P&H Mine Pro, the firm contracted to do the work on the shovel bucket, and Bulga Coal the operator of the mine.

The court was of the view that the objective seriousness of the offence by Bulga Coal was less than that of P&H. When combined with the fact that this was a first offence by Bulga Coal and that Bulga Coal had met a number of other mitigating criteria the fine imposed was significantly less than that imposed on P&H.

On 31 August 2009, P&H was fined a total of $260,000 by the Court (note that P&H had a prior offence which increased the size of the fine). Bulga Coal was fined $45,000 on 6 November 2009.

The incident that led to the prosecution of this matter did not result in a death or devastating injury but the view of the prosecutor was that the risk of serious injury or death created by the defendants' lack of adequate systems mandated that charges be laid in this matter.

The failure of Bulga Coal to ensure the working practices of the firms and people contracted to undertake work at the mine were safe and without risk required a response to send a clear message to Bulga Coal and the Industry about the need for the implementation of adequate contractor management systems.

Maximum fines imposed for eye injuries

A person received serious eye injuries in March 2007 at Integra Colliery near Singleton. The injuries were sustained while grouting roof bolts. The process of grouting required the use of a pump to force the grout into the roof. The workman tried to unblock the grout hose with a screw driver when the grout, under pressure, entered his eyes.

Charges were laid against Glennies Creek Management Pty Ltd (GCCM), the employer, and Integra Coal Operations Pty Ltd (ICO), which managed the operation. Both defendants pleaded guilty.

On 20 August 2009, GCCM was convicted of a breach of section 8(1) of the Occupational Health & Safety Act (OHSA) and fined $55,000.00. ICO was convicted of a breach of section 8(2) of the OHSA and fined $55,000.00. In each case, there was a moiety to the prosecutor.

Interestingly, Chief Industrial Magistrate Hart assessed the penalty for each offence at higher than $55,000.00 (GCCM $120,000.00 and ICO $80,000.00). However, the jurisdictional limit for a local court is $55,000.00 and so that was the fine for each defendant. Whilst GCCM had a prior conviction, His Honour said the defendant had a "good industrial record".

CALENDAR OF EVENTS

Mine operators workshops, held regularly, next held 4-5 March 2010, Morilla Street, Lightning Ridge, contact Janet Town, I&I NSW, 02 6829 9200.

Mine safety awareness course, held regularly, next held 1-2 March 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, Hosts for the next meeting will be Hunter Valley Operations in March 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 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 I&I NSW 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)

Hunter Valley electrical engineers meeting, held bimonthly - normally held on the first Friday of every second month - at Mine Safety Technology Centre, Thornton (8 Hartley Dr), 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, 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

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