

NSW mine safety update

Promoting safety in the NSW mining industry



Wran Consultancy Project – Digging deeper into OHS

The NSW Mine Safety Advisory Council recently launched the Wran Consultancy Project to address five major recommendations of the Wran Mine Safety Review.

An internationally recognised independent consulting consortium lead by Shaw Idea Pty Ltd is carrying out the project. The consortium comprises some of Australia's foremost researchers who have expertise in contemporary approaches to OHS management, fatigue and working hours. A project steering group, made up of industry representatives, has also been appointed to oversee the consultancy and ensure the smooth implementation of the project.

The three project topics are:

- Production bonus payments and safety-based incentive schemes
- Fatigue management and working hours in the mining industry
- OHS management system connect and consultation.

The project will take about six months and is expected to report its findings to the Mine Safety Advisory Council in August 2007. The project will require significant interaction between the independent consultants and all sectors of the NSW mining industry. The industry is encouraged to participate and contribute to this project so that accurate and credible information is gathered and realistic conclusions can be drawn. The project is supported by major stakeholder groups in the NSW mining industry.

There are numerous ways that industry can participate in the Wran Consultancy Project, including an online forum that has been established to encourage open and active discussion of the topics and an issues paper that was released in March for public comment. Submissions to the issues paper closed during April 2007. The independent consultant will also be holding confidential interviews and briefings with industry stakeholder representatives or employer and employee groups.



An innovative initiative is the Project Forum set up so individuals can post their views anonymously and discuss other messages in the forum. This is an opportunity for everyone involved in the NSW mining industry to have their say. A link is provided to the forum from the NSW Department of Primary Industries project website.

A census of mines was undertaken in March, including all sectors of the industry. From the information collected a representative sample of mine sites will be chosen for in-depth data collection on site during April and May. The site visits will involve a survey, individual interviews, focus group interviews and reviews of relevant documentation. All information gathered during the project will be strictly confidential. Participating individuals and mine sites will not

be identified in the report.

A series of one-day Future Inquiry Workshops will also be held in June for industry stakeholders to discuss the project findings and identify future directions for the industry in NSW.

The outcomes of the project will enable the NSW Mine Safety Advisory Council to advise the Minister for Mineral Resources and the NSW Government on ways to address the issues raised by the Wran Mine Safety Review. To obtain further information on the Wran Consultancy Project, download a copy of the issues paper or participate in the online forum visit the Mine Safety website at:

www.nsw.gov.au/minerals/safety/consultation/wran-consultancy-project



NSW DEPARTMENT OF
PRIMARY INDUSTRIES

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

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



Risk Management Pocket Guide

A new kit to assist small mines and quarries improve safety and develop effective risk management systems is now available from the NSW Department of Primary Industries (NSW DPI). *The Risk Management Pocket Guide* assists small mines and quarries address the three main steps to managing risks: identifying hazards, assessing risks and choosing the best controls for those risks.

The step-by-step plain language kit is designed to help develop a better understanding of everyday workplace safety and encourage the everyday management of safety risks. This is achieved by providing simple systems and daily prompts.

The kit is produced in three parts including:

- A pocket book designed to fit into a shirt pocket for daily on-the-job use. It contains a hazard reporting and feedback notebook and hazard management process prompt cards to remind workers of common hazards they may encounter in everyday operations.
- A detailed 44-page handbook *Risk Management Pocket Guide - A memory jogger for people on the job in the mining and quarrying industry, especially in smaller operations* that provides clear and simple instructions on effectively using the pocket book.
- A training CD that includes notes used in the Refining Your Safety Management Plan workshops. These workshops have been held throughout NSW in conjunction with the Institute of Quarrying Australia.

The *Risk Management Pocket Guide* has been produced as a direct result of the Wran Mine Safety Review recommendation encouraging the development and implementation of more strategic initiatives for small mine safety. It was developed by NSW DPI Mine Safety Operations officers with the assistance of Mine Resilience (Australia) Pty Ltd and the Institute of Quarrying Australia.

The kit or individual pocketbooks can be obtained from the NSW DPI customer service branch by phoning 02 4931 6666 or through the website at:

www.dpi.nsw.gov.au/minerals/safety/mine-safety-publications

Are you a contractor?

Do you currently receive Safety Alerts and Safety Bulletins from NSW DPI?

If not, register to receive them by sending your details, including name, company, phone and email, to:
mine.safetyalert@dpi.nsw.gov.au

Deadline looms for new coal safety obligations

Coal operators and contractors are required to implement a range of new measures to improve mine safety performance from 23 June 2007.

The new measures are outlined in the *Coal Mine Health and Safety Act 2002* and the *Coal Mine Health and Safety Regulation 2006* that commenced on 23 December 2006. Some transitional provisions included in the legislation expire at 23 June 2007 and 1 July 2007.

New measures required under the new legislation include:

- Colliery holders nominating an operator who is the employer with day-to-day control of the coal operation. The operator has all the duties of an employer under the OHS Act, including the general duty of care and the duty to consult employees. Operators had to be nominated by 23 February 2007.
- The coal operator is responsible for managing health and safety at all locations at the coal operation and controlling the activities of contractors in respect to health and safety. This responsibility includes a duty to prepare a health and safety management system, a major hazard management plan and an emergency management system. Operators also need to prepare a management structure and a contractor management plan.
- Coal mine contractors also have increased responsibility under the new legislative arrangements. Contractors must comply with the health and safety management system and emergency management system prepared by the operator. They must also prepare a safe work method statement that reflects the safety systems enacted by the coal operator before they can work onsite. All sub-contractors will also be required to comply with these requirements.

To assist the industry understand its responsibilities and comply with the new legislation, the NSW Department of Primary Industries has developed a useful range of support documentation in the shape of technical references, guidance notes, self-test questionnaires and a legislation transition roadmap.

The support documentation covers all aspects of the new legislation, including developing a management structure, registration of plant, licensing activities and implementing mine safety management and engineering plans. They are practical and user-friendly tools that include explanatory notes, checklists, application forms and lodgement instructions.

The roadmap shows the transition from the previous legislation in an easy-to-read layout, including transitional provisions.

These tools will also be used by NSW DPI Mine Safety Operations



Inspectors to monitor industry compliance with the new legislation, providing industry with a simple and reliable means of complying with their new responsibilities.

All of the support documentation is available from the NSW DPI website at:

www.dpi.nsw.gov.au/minerals/safety/legislation/commencement

Mine Safety publications available in electronic form

The NSW Department of Primary Industries (NSW DPI) is rolling out electronic copies of Mine Safety publications for the mining industry.

Electronic copies of publications will be available at no charge. NSW DPI is updating suitable Mine Safety publications, such as Mining Design Guidelines, to an electronic format so they can be downloaded from the NSW DPI website. A selection of publications is already available. If you are unable to access the internet, copies of

electronic documents can be provided on CD by contacting the NSW DPI Information and Customer Service Counter on 02 4931 6666 or via email at mineralpublication.orders@dpi.nsw.gov.au.

Hard copies of publications are still available and will incur a charge to cover the cost of printing and distribution. For more information visit the Mine Safety website at:

www.dpi.nsw.gov.au/minerals/safety/mine-safety-publications

New board to assess and improve competency in NSW coal mining industry

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

The new board was constituted under section 130 of the *Coal Mine Health and Safety Act 2002* which came into effect on 23 December 2006. Once fully established, the board will advise the Minister for Mineral Resources on relevant issues as well as oversee the development of health and safety standards and the assessment of competencies.

Several appointments to the board have already been approved by the Minister, including:

- the Chairperson - John Maitland
- two independent representatives with expertise in the development and assessment of competence - Robert Gibbons and John McKendry
- two representatives from the NSW Department of Primary Industries - Director of Mine Safety Operations Robert Regan and Director of Mine Safety Performance Rod Morrison.

Board nominations have also been received for the appointment of additional representatives from employee and employer organisations within the coal industry. These appointments are



currently being considered by the Minister.

The new Coal Competence Board has assumed the role of the former Coal Mining Qualifications Board. However, during the transition period a quorum of board representatives has been established to ensure that existing certificate of competency examinations can continue.

The Coal Competence Board will play a significant role in ensuring a high level of competency and improved health and safety standards within the coal mining industry.

Board of Inquiry into mine safety enforcement

The NSW Government has established a Board of Inquiry into mine safety enforcement in the NSW mining industry. The inquiry was established in response to recommendations made by the Wran Mine Safety Review and will examine the issue of enforcement policy as well as the processes used to implement the policy.

The Minister for Mineral Resources Ian Macdonald appointed Dr James J Macken AM LLD as the Board of Inquiry and Jim Cox as the Assessor under the *Coal Mine Health and Safety Act 2002*. Both men will bring a wealth of knowledge and experience to the inquiry, with Dr Macken being a former Judge of the NSW Industrial Commission and Mr Cox a Senior Officer dealing with occupational health and safety with WorkCover NSW prior to his retirement.

The terms of reference for the inquiry include:

- the adequacy of the legislative framework for mine health and safety enforcement policies
- the role of the NSW DPI Inspectorate, including the qualifications and experience of staff, resourcing and training
- the implementation of policies, including developing a

strategic approach to enforcement with a view to long-term improvement in compliance

- the range and application of sanctions available to inspectors, and if inadequate, sanctions that might apply
- the role of employers, unions and NSW DPI in enforcement of breaches under the relevant legislation
- the adequacy of monitoring and reporting systems
- prosecutions
- benchmarking the policies and practices of comparable mine health and safety agencies.

While the Wran Mine Safety Review acknowledged that NSW DPI had made significant progress in enforcement during the past decade, it also uncovered differing views among stakeholders regarding the level of emphasis needed on prosecution and the role of enforcement in achieving a more proactive and collaborative approach to mine safety.

The Board of Inquiry has called for public submissions and will undertake detailed investigations before issuing a report on its findings in July 2007.

Developing safer earth moving equipment designs



Overcoming health and safety risks posed by earth moving equipment is the objective of the Earth Moving Equipment Safety Round Table.

The Earth Moving Equipment Safety Round Table (EMESRT) was established in 2006 to help overcome health and safety risks posed by earth moving equipment.

The organisation was formed by mining company representatives who were concerned that earth moving equipment was not designed to be operated and maintained in mine site conditions without risking harm to mine workers.

EMESRT aims to reduce these health and safety risks by developing a relationship with manufacturers and assisting with the development and implementation of improved earth moving equipment designs. To achieve this aim the organisation is creating a series of philosophy sheets for crucial design elements. The design philosophy sheets will outline the objectives, identify the general design outcomes and detail the risks that need to be overcome.

In the past, poor design issues have been implicated in a number of fatalities, injuries and illnesses from earth moving equipment incidents, including collisions with light vehicles, isolation problems, falls from heights and loss of control. There are also contributing

factors to consider such as fatigue, noise and dust. Although earth moving equipment is usually designed to international standards, it does not always meet Australian company and regulatory standards.

The organisation has identified eight priority design areas to be targeted this year. These are access and egress, working at heights, vibration, fire, isolation, visibility / collision detection, tyres and rims and manual materials handling. Other key areas to be targeted in future are noise, dust, machine stability / slope indication, guarding, displays / controls (including labelling), work postures and confined space.

EMESRT is facilitated by the Minerals Industry Safety and Health Centre (MISHC), with additional funding and assistance provided by the Australian Coal Association Research Project. Members of EMESRT include Anglo American, Barrick, BHP Billiton, Newmont, Phelps Dodge, Rio Tinto and Xstrata, with the potential for expansion during 2007.

For further information about EMESRT visit their web page at

www.mishc.uq.edu.au/index.html?page+58384 or email emesrt@mishc.uq.edu.au

States are sharing small mines safety knowledge and expertise

The NSW DPI small mines safety programs are being used as a foundation for similar campaigns interstate.

Three representatives from the Mines Inspectorate of the Queensland Department of Mines and Energy (Queensland DME) recently visited the NSW DPI head office in Orange to study the small mines programs and benefit from the vast knowledge and experience held by the NSW Mine Safety Operations team.

The Queensland representatives were Rob O'Sullivan (Manager Safety and Health North Region), John Gemmell (Inspection Officer South Region) and Steve Sliwka (Inspection Officer North Region). The NSW team consisted of John Moss, Angus McDouall, Mark Stephens, Ron Dillon, Robert Jay and Mike Skeen.

During the three-day visit NSW DPI staff provided a valuable insight into the development and workings of the various small mines programs. As well as providing copies of resource materials they were able to provide a detailed history, outline the processes, show specific strengths and weaknesses and supply expert advice. They also hosted site visits with quarry operators at different stages in the safety journey to give practical examples of how the programs can benefit those involved.

While Safety Management Plans are a legal requirement for all small mines in NSW, Queensland legislation does not currently require small mines (with less than 10 people) to have a documented safety and health management plan. The trends in metalliferous fatal accident statistics for Queensland reflect a continued decreasing trend for



NSW DPI and Queensland DME share staff their knowledge and experiences during a three-day visit to the NSW DPI Orange office and central west mine sites.

large mines, while small mines are showing a small increasing trend.

"Queensland's metalliferous mines inspectorate are reviewing their approach to the management of safety and health for small mines and were keen to see first hand the work that NSW DPI have undertaken," Rob O'Sullivan said. "We considered it necessary to talk directly with the inspectors delivering the small mines program as well as to get feedback straight from the mines.

"We were impressed with NSW DPI's small mines campaign, particularly their workshop approach, the comprehensive training material they have developed and the mentoring/training role the inspectors have successfully undertaken. We are very grateful for the time John Moss and his team spent with us, as well as their openness and generosity in sharing resource material. All three of us were impressed by their dedication, innovative approach and enthusiasm for safety in small mines. We look forward to continued cooperation and sharing of ideas and information between the inspectorates."

Mission possible at OHS Conference

The 2007 NSW Minerals Industry OHS Conference's 'Mission Possible' theme will lay down dual challenges for the mining industry - working together to further improve OHS performance and tackling the issue of fitness for work.

The NSW Mineral Council's annual OHS Conference will be held from 20 to 23 May 2007 at Peppers Fairmont Resort in the Blue Mountains. The conference is held for the industry, by the industry and is beneficial for all levels of the minerals industry workforce as well as product suppliers, contractors, government representatives, industry groups and unions.

Fitness for work will be a key topic at the OHS Conference, including addressing problems such as fatigue, drugs and alcohol, personal profiling (risk taking) and healthy lifestyle factors.

The conference will showcase:

- A line-up of well respected industry professionals who will examine the challenges, politics and successes of the OHS systems practices, cultures and behaviours
- A colourful panel discussion, led by former Australian Test rugby union international Peter Fitzsimons and featuring a selection of industry 'coal face' workers, exploring a workplace incident and examining the roles and responsibilities of all those who contribute to achieving safety in the workplace
- A staged court simulation from Sparke Helmore Lawyers, continuing the same incident through the OHS legal process.
- A series of presentations on technology and training, people and health and a selection of industry case studies.

Delegates can also attend workshops on:

- The significance of our body clocks and how the human body tries to cope with the 24/7 lifestyle
- Designing out human error: A workshop on human factors engineering in the minerals industry.

The 2007 Innovation Awards Dinner will also be held during the conference, celebrating the contribution of the mining industry workforce towards safety innovation and featuring entertainment by Brown Sugar followed by karaoke.

For further information, or to register for the conference, visit the NSW Minerals Council website at www.nswmin.com.au



Delegates (above) at the 2006 NSW Minerals Industry OHS Conference adopt a hands-on approach to learning about health in the workplace.



Speakers at the 2007 OHS Conference include (left) keynote speaker Professor Till Roenneberg, an eminent chronobiologist from Munich University, (below left) former Australian Test rugby union player Peter Fitzsimons and (below right) and former Australian Test rugby union captain Nick Farr-Jones.



Have your say on national training systems

A nationwide survey is currently underway to determine the effectiveness of Australia's national training system. The Survey of Employer Use and Views of the VET System is being conducted by the National Centre for Vocational Education Research (NCVER) on behalf of the Australian, state and territory governments.

The survey is directed at employers and will be used to monitor how training is used and how employers value training, to understand

industry skill requirements, to identify areas with increasing skill requirements and to determine if the VET sector is meeting current needs. It will also be used to help shape future training policy.

At least 5000 surveys need to be completed to gain an accurate understanding of the training industry in Australia, with a sample selected from the Australian Business Register covering small to large companies from all states, territories and industry

groups. The surveying will be conducted between March and July 2007.

As training is integral to safety in the workplace and the mining industry uses national training packages as pre-requisites for Certificates of Competence exams, the survey will be beneficial both to and for the mining industry. The results from the survey will be published on NCVER's website in late 2007 at www.ncver.edu.au/publications/1667.html

Fatality highlights the need to adhere to safe work procedures

A successful prosecution over a fatality in the mining industry has highlighted the duty that employers have to ensure employees adhere to policies and standards in a system of safety.

Muswellbrook Crane Services Pty Ltd was fined \$125,000 by the Industrial Court of New South Wales after pleading guilty to a breach of section 8(1) of the *NSW Occupational Health and Safety Act 2000*. Anglo Coal (Kayuga Management) Pty Ltd was also fined \$125,000 after pleading guilty to a breach of section 8(2) of the *NSW Occupational Health and Safety Act 2000*.

The charges were brought against the two companies after an incident on 20 November 2003 at the Kayuga Mine that resulted in the death of Muswellbrook Crane Services employee Jamie Sullivan, who was struck by an underground mining trailer that was being moved by a mobile Franna crane.

Muswellbrook Crane Services was prosecuted for not providing and maintaining safe systems of work with respect to the conduct of lifts to be performed using a mobile Franna crane, not providing and/or maintaining any proper system with respect to risk assessments and failing to provide information, instruction, training and supervision as necessary to ensure the employees' health and safety at work.

The Court heard that while the crane operator and the victim were experienced in this type of work, there were a number of well-recognised departures from safe working practices that gave rise to a risk of the load in this instance becoming dislodged from the hoist hook. The Court accepted the force of the prosecutor's submission that the failure to undertake a written risk assessment prior to the commencement of work at the mine was a significant departure from proper safe working methods, as was the use of shortened chains and the failure to use a bow shackle because of the crowding of the hook.

The Court found there was a lack of overall supervision and diligence designed to ensure that the system of safety laid down by Australian and industry standards and picked up by company safety policy were reinforced in the workplace to ensure adherence to those policies and standards.

Companies must manage contractors at the workplace

The incident also highlighted the duty that companies have in respect to their systems of safety in dealing with contractors.

Anglo Coal (Kayuga Management) Pty Ltd was prosecuted for failing to ensure that employees of Muswellbrook Crane Services working at the site were provided with or maintained a safe system of work, and failing to ensure that these employees were provided with and/or maintained any proper system with respect to the assessment of risks associated with the conduct of crane lifts to be performed at the site using mobile Franna cranes.

At the time of the incident the Kayuga Mine site was being developed in preparation for longwall mining by Kayuga Management, with only two employees and up to 250 contractors on site.

The Court found that Kayuga Management's approach of employing contractors as the majority of the workforce at the mine required

a heightened attention to the systems of safety adopted by contractors. While Kayuga Management did have a range of systems to manage contractors, not all of those systems were in operation at the time of the incident.

The Court said the incident represented another example of employers feeling a lesser sense of obligation in relation to workplace safety because a well-respected and competent expert is engaged by way of contract to perform certain tasks.

The failure to conduct a risk assessment of the work to be performed at this site was in breach of well-known and identified safety standards. The Court found that had Kayuga Management required Muswellbrook Crane Services to provide its risk assessment and work method statement for this lift, it would have immediately exposed the fact that the risk assessment laid down by the company's system was not the risk assessment in the possession of the works crew on this day but had been adapted from another mining company. It would also have exposed the fact that the risk assessment, such as it was, was one adopted for work performed earlier at Dartbrook Mine and was not specifically focused upon the work to be conducted at the defendant's project site.

The Court heard that Muswellbrook Crane Services and Kayuga Management have worked together to identify and quickly implement improved health and safety arrangements following the incident.

Prosecutions Update

Glennies Creek Colliery

On 7 February 2003 four people were exposed to a high-voltage arcing fault at Glennies Creek Colliery following exposed conductors and energised cables being left uncapped. Injuries suffered by the four included partial deafness, disorientation, burning sensations of the ears and other symptoms.

As a result of an investigation by NSW DPI, two charges under the *NSW Occupational Health and Safety Act 2000 Act* were laid against each of Glennies Creek Coal Management Pty Ltd and the mine manager Peter Keith Ross.

Both Glennies Creek Coal Management Pty Ltd and Peter Ross pleaded guilty. An arrangement on the basis of discontinuing proceedings against the mine electrical engineer Desmond John Hancox was agreed on the basis that he would surrender his ticket of competency and not reapply for three years.

Mr Hancox also undertook not to work in the role of mine electrical engineer.

The other defendant in the matter, JVUM Pty Ltd (formerly known as United Mining Pty Ltd trading as United Mining Support Services), also pleaded guilty to one charge under the *NSW Occupational Health and Safety Act 2000 Act*.

On 30 June 2006 the NSW Industrial Court fined Glennies Creek Coal Management Pty Ltd \$80,000 for each offence (\$160,000 total). Peter Ross was fined \$8000 for each offence (\$16,000 total).

On 15 December 2006 the NSW Industrial Court fined JVUM Pty Ltd \$90,000.

Big year ahead for mine safety legislation

This will be a significant year of achievement for mine safety in NSW. It will see the completion of the necessary building blocks to ensure a thorough and effective legal framework protecting the safety of people working in the mining industry.

The extension of the *NSW Occupational Health and Safety Regulation 2001* to the mining industry and the start of new mine safety laws will provide a full range of controls for the risks facing mining workers. Anyone working in the industry is encouraged to become familiar with the key safety concepts within all new legislation.

Applying the OHS Regulation to the mining industry

The *NSW Occupational Health and Safety Act 2000* and the supporting OHS Regulation are the principal laws to ensure the health, safety and welfare of persons at work across all industries in NSW. While the OHS Act applies in full to the NSW mining industry, the OHS Regulation currently only applies in part to the NSW mining industry.

The OHS Regulation details how risk must be managed to ensure that employers and people in control meet their duty of care. It also specifies the requirements for effective and meaningful workplace consultation so that employees can contribute to any decision making that may affect their health, safety and welfare.

Additionally, the regulation identifies a range of risk controls for common hazards associated with the working environment, plant and dangerous goods and hazardous processes or work. Examples of the types of health risks controlled by the regulation include noise, manual handling, hazardous substances and asbestos.

In summary, the OHS Regulation affords protection from common risks that may be found across a variety of industries but does not cover risks specific only to the mining industry.

Changes will help improve mine worker health and safety

To ensure that people in the NSW mining industry have access to the

same level of protection from workplace injury and disease as other workers, the NSW Government is working to remove these barriers in the existing OHS Regulation that limit its coverage of mine worker health and safety.

- In December 2006 the Government released a discussion paper for public comment proposing that the remainder of the OHS Regulation be applied to the mining and extractive industries. The closing date for public submissions was in early March 2007.
- In December 2006 the Government also commenced the new *Coal Mine Health and Safety Act 2004* and *Regulation 2006*.
- In 2007 the Government will commence the new *Mine Health and Safety Act 2004* and *Regulation* while repealing the *Mines Inspection Act 1901* and *General Rule 2000* that have traditionally regulated the metalliferous, extractive and opal mining sectors.

By introducing new mining industry safety laws the Government is aiming to supplement the OHS Act and OHS Regulation by providing risk controls peculiar to the mining industry. They will deal with industry-specific issues like the atmosphere, inrush, shafts and windings.

The new mining industry safety laws also expand on the OHS duties of the mine operator to include control of the mine site and responsibility for co-ordinating all mining operations and the health and safety of contractors.

While care has been taken to avoid any duplication or inconsistency between the 'parent' OHS legislation and the supporting mine safety acts and their regulations, in the event of an inconsistency the new legislation provides that the OHS Act and the OHS Regulation prevail.

NSW DPI is currently considering public comment on the extension of the OHS Regulation to the mining industry. A draft version of the *Mine Health and Safety Regulation* will also be released for public comment in the near future.

Safe work procedures help prevent serious injury and death

Contractors and mining companies failing to develop, implement and monitor comprehensive safe work procedures risk serious injury or death to workers.

Marathon Tyres Pty Ltd and Rio Tinto Coal (NSW) Pty Ltd were each fined \$135,000 by the Industrial Court of New South Wales after pleading guilty to breaches of section 8(1) and section 8(2) respectively of the *NSW Occupational Health and Safety Act 2000*.

The charges were brought against the two companies following the death of Marathon Tyres employee Paul Strong in a tyre-changing incident at the Mount Thorley / Warkworth mine on 28 May 2004.

Mr Strong was killed after being crushed between a 4 tonne tyre and a service vehicle while using a remote-controlled vehicle loading crane (VLC) with an attached tyre handler to fit the rear wheel of a large earthmoving vehicle.

Marathon Tyres, which provides specialist tyre and wheel servicing repairs to mine sites, was fined for failing to ensure employees undertook a safe system of work. The safe work procedure developed by Marathon Tyres required the tyre fitter to be clear of the area of danger during all movements but did not provide for the VLC operator to also be clear of danger. The Court found that the safe

working procedure assumed the only employee at risk was the tyre fitter.

The mine site operator Rio Tinto was also fined for failing to ensure that non-employees undertook a safe system of work. After noting similar fatalities elsewhere in the industry, Rio Tinto produced protocols and guidelines for the use of VLCs with hook attachments; however they did not extend to VLCs with arm and grab attachments as used in this fatal incident.

The Court found that despite Rio Tinto significantly decreasing workplace injuries during the past 10 years with extensive health and safety systems, the company's assessment of contractor's work procedures were ineffective. Contractors were assessed and contractor's employees were inducted but not all the safe working procedures used by contractors on site were assessed.

The Court also heard that improved health and safety measures implemented by both Rio Tinto and Marathon Tyres following the fatality included comprehensive risk assessments, increased supervision, development of a purpose-built forklift to increase visibility and the introduction of hard barriers and no-go zones when changing tyres while using VLCs.

SA07-01 Miner fatally injured in remote-controlled loader incident

A miner sustained fatal crush injuries at an underground metalliferous mine. The miner was operating an underground loader by 'line of sight' remote control in a stope drawpoint. Preliminary investigations indicate that while the loader was at the drawpoint brow, the operator was positioned between the loader and the right hand side of the drawpoint wall. The loader appears to have moved towards him and he was pinned against the wall, resulting in fatal crush injuries. A detailed investigation has been initiated by the NSW DPI Investigation Unit and a report will be prepared for the Coroner. All mines utilising remote-controlled mining equipment should review their standards and procedures against MDG 5002 Guideline for the Use of Remote Controlled Mining Equipment in Underground Metalliferous Mines September 2006 (published by NSW DPI). Particular reference should be made to consider the use of tele-remote operation in preference to 'line of sight' operated equipment. Management must also ensure: risk assessments are conducted to identify all foreseeable hazards; the operator is located in a safe position while the equipment is in remote control mode; barrier systems are utilised that meet the requirements of AS 4024 – Safety of machinery; and compliance to AS 4240 – Remote controls for mining equipment.

SA07-02 Catastrophic failure of auxiliary fan

An auxiliary fan suffered a failure at the drive end bearing of the flameproof motor that resulted in the shaft severely overheating and deforming. This caused extreme out-of-balance forces to be generated, including the fan impeller being shed, the motor junction box falling off and extreme damage to the explosion-protected properties of the motor. An extensive engineering investigation concluded the incident was caused by excessive vibration. The manufacturers have informed their clients of this failure mode. Other issues identified during the investigation included that many failed fan motors were two-pole high speed (3000 rpm), the impeller was installed directly on the motor shaft, many of the failures rendered the motor non-flameproof in service, fan maintenance practices were deficient and vibration monitoring practices were deficient. All users must review the suitability of their auxiliary fan design and application. In particular the following points must be addressed: a design risk assessment for the life cycle of the fan that incorporates a fan and motor failure mode effects analysis, incorporate design features to prevent a reoccurrence of this type of event, ensure compliance with MDG 3, ensure that fan monitoring and interlocks are designed and operated to an appropriate safety integrity level, implement a suitable vibration monitoring program and auxiliary fan maintenance program, consider the use and availability of fan operational data via data-loggers, include an operational risk assessment (with consideration given to proper investigations of fan stoppages), restoration of fan power procedures and provision of alternative ventilation in the event of a failure.

SA07-03 Structural bin failure

A cone-shaped 100-tonne truck loading bin failed suddenly and fell to the ground. Preliminary investigations have indicated the two lower sections of the bin had been previously removed for liner replacement. Bolt holes on the support flanges had been elongated which had allowed some bolts, complete with washers, to pull through the greater than 20mm holes in the support flange. A

review of the bin's design and the practice of elongating bolt holes has been requested. It is recommended that employers, designers, manufacturers and suppliers of such structural equipment/plant are reminded of their obligation under Sections 8, 10 and 11 of the *NSW Occupational Health and Safety Act 2000*, to ensure that equipment/plant is safe and without risk to health when properly used.

The Mine Safety Management Plan (*Mines Inspection Act 1901*) or Mechanical Engineering Management Plan (*Coal Mine Health and Safety Act 2002*) must make provision for the safety of mechanical structures and installations, inspection and testing systems, maintenance, repair and alteration of plant and installations, competence of operators and supervision arrangements. Inspections, maintenance and repairs must be conducted by a competent person as per the designer's procedures or those developed by a competent person (refer to Clause 137 of the *NSW Occupational Health and Safety Regulation 2001*). Anyone making changes or alterations without consulting the 'designer' assumes the role of 'designer' and must comply with their duties under Part 5.2 of the OHS Regulation. Steel structures should be designed, manufactured, erected and modified in accordance with Australian Standard AS 4100 Steel Structures or AS 3990 Mechanical equipment – Steelwork.

SA07-04 Miner crushed by drill jumbo

An operator was crushed and paralysed below his waist in an incident involving a drill jumbo undergoing a routine service while being readied for drilling. An oil leak around a check valve on the feed beam rotation motor (these prevent unintended movement) needed to be repaired. The maintenance fitter checked the area was clear before loosening the valve slightly to see if the feed beam would rotate. When it didn't he completely removed the valve at which point the feed beam began to rotate. He moved to a safe area but then noticed the operator crushed between the feed beam and the face wall. The feed beam initially showed no tendency to rotate as it was near the point of balance. To eliminate any possibility of the feed beam rotating it could have been positioned on the ground rather than at chest height. Further investigation is being carried out by the NSW DPI Investigation Unit. Employers should review their maintenance practices, particularly those involving the maintenance of hydraulic systems. Employers and employees both have duties under the *NSW Occupational Health and Safety Act 2000*. Employers must actively identify hazards and ensure risks are eliminated or reduced to a minimum by implementing controls in the following order, elimination of the risk, controlling the risk at source, minimising the risk by the design of safe work systems and reducing the risk through personal protective equipment.

continued next page

Safety Alerts and Safety Bulletins

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

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

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Training and safe work procedures must consider human error, address the hazards encountered on the job, be practicable and be actively used. Employees must have a clear understanding of what management expects and be actively supervised. Job Safety Analyses (JSAs) should be used for unusual tasks or when safe work procedures are modified.

SA07-05 Self-contained self rescuers

Twelve men were trapped by an explosion at the Sago mine in West Virginia, USA when a sealed goaf area containing an explosive mixture of methane ignited. There were 11 fatalities, and one critical injury, from the effects of carbon monoxide poisoning. Investigations discovered that four out of 12 self rescuers available were considered unusable and discarded during the incident. However these were later proved to be sound and may have been needlessly removed. Thorough training or more frequent retraining may have negated these circumstances. Other recent incidents involving self-contained self rescuers include difficulty in breaking the initial seal, removing the plug from the mouthpiece and unravelling the breathing tube and nose clip. Activation of the initial bag-filling oxygen charge has also failed on occasion, requiring manual inflation. None of these difficulties constitutes failure of the unit. However, the possibility of their occurrence should be mentioned and allowed for in any training program. Other training issues should cover the difference between real and practice units and should be performed in simulated crisis situations. Training should also include the escape system as a whole, including the location of all relevant caches, changeover stations and refill stations. It is recommended that mines should audit their training programs and confirm that all foreseeable issues have been addressed. Mines should also consider a common program for their escape instructors to encourage standardisation and thoroughness throughout the industry and all education programs should include any updates or alerts from manufacturers.

SA07-06 In-service failure of explosion-protected equipment

A fault finding service on an underground load haul dump (LHD) found three plastic floats that were melted from excessive heat. Both the OEM's service personnel and mine personnel had previously been unable to fully rectify reliability issues that had been experienced with the low water shutdown protection system. The investigation focused on two areas, a mechanical component failure or possible unauthorised adjustments by non-competent personnel. The mine's inspection system showed the low water protection system repeatedly failing to operate, being repaired, returned into service and failing again at the next inspection. Extensive testing on the circuit components found no failure. However, investigation identified that the operating pressures could easily be set to above recommended levels, making the protection system ineffective. Designers, manufacturers and owners of plant are reminded that they have obligations under the *NSW Occupational Health and Safety Act 2000* and the *NSW Occupational Health and Safety Regulation 2001*, including to review the risk assessment for the plant if they become aware of a design fault, ensure that premises are safe and without risk when properly used and to not intentionally or recklessly interfere with or misuse anything provided in the interests of health, safety and welfare. They must also ensure that shut down systems comply

with Australian Standards and are analysed to an appropriate risk-based method to establish if they are fit for purpose. Designers must eliminate the use of single line components on safety critical systems or functions and ensure systems are designed to the required safety integrity level.

SAFETY BULLETINS

SB07-01 – Cover your vehicle load safely

An unacceptable number of falling incidents have raised concerns regarding the covering of loads on trucks/semi-trailers with inadequate working at heights provision. Investigations have found that a lack of fit-for-purpose equipment, poor work practices and inappropriate management systems for the covering of loads on trucks/semi-trailers contribute to incidents. The design and operation of covers requires an understanding of the *NSW Occupational Health and Safety Act 2000*, *NSW Occupational Health and Safety Regulation 2001* and Australian Standards. The manufacturer must ensure the cover mechanism is safe and without risk to health when properly used as well as provide sufficient information on safe use. An employer must ensure a person is trained to operate and maintain the cover mechanism safely and without risks to health. Cover mechanisms which can be operated and maintained from the ground give the least risk of injury. If a cover must be operated or maintained from height then adequate safety provision is required. This would include the consideration of a work platform and/or a tethering device to safely restrain a person from falling. As a matter of priority all mine sites should ensure appropriate fit-for-purpose covers are used and working at heights provision is supplied according to the operational, maintenance and design characteristics of the cover used on your trucks/semi-trailers. Consideration is to include both employees and contractors operating and maintaining cover mechanisms onsite. Consideration should cater for unexpected failures.

SB07-02 Free-steered vehicles used in underground coal mines – electrical circuits

Reported incidents have occurred at coal mines on flameproof free-steered vehicles where electrical faults have not been detected and cleared by electrical circuit protection. During the incidents, lighting circuit cables have been damaged and intermittent arcing has been noticed. The installed electrical protection failed to detect the faults as the magnitude of the fault current was similar to the normal load current. Inspection and maintenance regimes had also failed to identify defective cable installations. Increased inspection and improved mechanical protection of cables have not prevented further incidents occurring. Electrical protection could not detect and clear faults that were reasonably foreseeable. The incidents resulted in the development of alternator-based protection systems that can detect such faults and disconnect the supply to the faulted circuit. All users must review the electrical installations on flameproof free-steered vehicles. The review should consider the installation of electrical cables and components such that they are protected and located to minimise the risk from foreseeable damage, the suitability of the electrical protection to detect and clear faults that have the potential to cause incendive arcing and installation of reliable protection systems that can detect intermittent arcing faults and disconnect the electricity supply as quickly as possible.

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

Learning more about safe engineering work practices

The NSW Department of Primary Industries' annual Mechanical and Electrical Engineering Safety Seminars provide a great opportunity to improve your safe work practices and benefit from the expert advice of skilled industry professionals.

This year, the 17th annual Mechanical Engineering Safety Seminar will be held on 15 and 16 August 2007 at Penrith Panthers Leagues Club.

The 17th annual Electrical Engineering Safety Seminar will be held on 14 and 15 November 2007, also at Penrith Panthers Leagues Club.

For details on the mechanical seminar contact Graham Johnston on 02 4222 8307 or Peter Sunol on 02 4931 6655. For further details on the electrical seminar contact Steve Bentham on 02 4931 6653 or Owen Barry on 0418 618 337.

You can also keep an eye on the NSW DPI Mine Safety website at www.dpi.nsw.gov.au/minerals/safety/resources/seminars-and-conferences for further information as it becomes available.

Seminar agendas and registration forms will be forwarded to the industry once further information is confirmed. In the meantime, you can register your interest in attending by forwarding an email to minesafety.seminars@dpi.nsw.gov.au or telephoning 02 4931 6416.

New Audit Checklist for Safety Alert Management Systems

The distribution of Safety Alerts to mine sites is a positive way of warning the mining industry of the occurrence of high-risk activities and incidents.

According to NSW DPI, mines use information in the Safety Alerts to improve their safety performance.

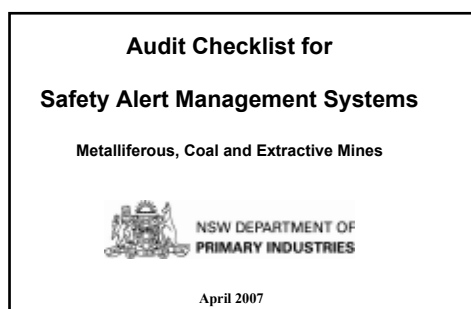
Issuing Safety Alerts should help prevent the recurrence of incidents and ensure compliance with legislative requirements, while also meeting community safety expectations.

To help achieve this NSW DPI has developed the Audit Checklist for Safety Alert Management Systems.

Mining operations should use the audit checklist to identify the extent and effectiveness of their Safety Alert management systems, as well as any deficiencies or non-compliance. This should include developing corrective action plans.

The audit checklist is available for download from the NSW DPI Mine Safety website at:

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



NSW DPI Senior Engineer Electrical Assessor Mohamed Abdelkrimi at work at the Mine Safety Technology Centre.

NATA accreditation for Mine Safety Technology Centre

The Mine Safety Technology Centre (MSTC) has been granted accreditation in the field of measurement science and technology by the National Association of Testing Authorities (NATA).

NSW DPI Senior Engineer Electrical Assessor Mohamed Abdelkrimi is the approved NATA signatory. NATA audits and accreditation are an independent technical evaluation that checks all aspects of a facility's ability to consistently produce accurate and dependable data.

The scope of the accreditation is extensive and covers a range of tests and examinations of electrical equipment for explosive atmospheres including intrinsic safety protection and safety systems, as well as IP testing for moisture and dust penetration.

One interesting MSTC test for intrinsic safety protection uses a spark test apparatus. This involves connecting an electronic circuit to the apparatus, then switching it on and off 1600 times in an explosive atmosphere to determine if the circuit contains enough energy to promote an explosion.

The MSTC also recently gained accreditation in the field of chemical testing, with Senior Scientific Officer Dr Greg Browning granted signatory status in late 2006. This includes mine gas analysis and data interpretation and extends to two mobile gas laboratories. The mobile laboratories contain about 2000 metres of sample tube which means on-site sampling is now possible in previously inaccessible locations, providing quick and reliable results.

The NATA accreditation benefits testing and inspection facilities such as the MSTC by allowing them to determine whether they are performing their work correctly and to appropriate standards. It also provides them with a benchmark for maintaining that competence in future.

Contact MSTC Manager Geoff Slater on 02 4924 4001

CALENDAR OF EVENTS

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

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

Hunter Valley Underground Mine Mechanical Engineers Meeting, next quarterly meeting in June, venue TBA, contact Paul Drain, Mine Safety Officer, DPI (02) 4931 6652

Hunter Valley Opencut Mine Mechanical Engineers Meeting, next quarterly meeting to be held in June, venue TBA, contact Matt Willoughby, Mine Safety Officer DPI (02) 6571 8788

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

NSW DPI Local Check Inspectors Conference, September, Penrith Panthers

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

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

Mechanical Safety Presentations to the Extractive Industries, closed workshop 'onsite', held periodically throughout the year as required. Generally workshops are not open to broader industry however if you would like more information please contact Angus McDouall, Inspector Mines, DPI (02) 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 John Waudby Senior Inspector of Electrical Engineering (02) 4931 6641 or 0418 295 656

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

NSW DPI 17th Annual Mechanical Engineering Safety Seminars, Penrith Panthers, 15 and 16 August, for further details contact Graham Johnston on 02 4222 8307 or Peter Sunol on 02 4931 6655, for bookings email minesafety.seminars@dpi.nsw.gov.au or phone 02 4931 6416

NSW DPI 17th Annual Electrical Engineering Safety Seminars, Penrith Panthers, 14 and 15 November, for further information contact Steve Bentham on 02 4931 6653 or Owen Barry on 0418 618 337, for bookings email minesafety.seminars@dpi.nsw.gov.au or phone 02 4931 6416

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, next meeting 21 June 2007, venue TBA, contact Stan Maginnis, Inspector of Electrical Engineering, (02) 6350 7891 or 0417223 875

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

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

Plant Safety in the Mining Industry, Penrith Panthers, 2 May, for bookings email minesafety.seminars@dpi.nsw.gov.au or phone 02 4931 6416

High Pressure Hydraulics Workshop, Log Cabin Conference Centre at Penrith, 16 May, for bookings email minesafety.seminars@dpi.nsw.gov.au or phone 02 4931 6416.

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

NSW DPI — Mineral Resources Offices



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