

3000th person attends Lightning Ridge Opal Miners Safety Course

The NSW Minister for Mineral Resources, Eddie Obeid, has welcomed a new milestone in opal mining safety with the 3000th person completing the Opal Miners Safety Course at Lightning Ridge. This course evolved from a series of workshops held to address the past, poor safety record on the opal fields.

Between 1978 and 1997, there were 23 fatalities on the Lightning Ridge region opal fields however none have occurred since April 1997.

Much of the credit for the improved performance has been attributed to the Opal Miners Safety Course. At first, attendance was voluntary but it was made compulsory for all new claim holders in 1995.

Attendance at an Opal Miners' Safety Course is now a condition of the compulsory, annual re-registration of claims. The only exceptions to this rule are those who began mining on the Lightning Ridge opal fields before the course began. These people are being encouraged to attend the course and most have now done so.

Most course attendees are from Lightning Ridge or White Cliffs but some have come from opal fields in South Australia and Queensland, while others have travelled from the USA and Canada.

The course has been developed in consultation with the Lightning Ridge and Grawin Glengarry Sheeppard Miners Associations. It includes OHS responsibilities of claim holders, hazard identification and elimination, legislative requirements, mine planning, electrical hazards, ground stability, emergency procedures and complying with the environmental regulations.



Rachel Holloway, 3000th Opal Mining Safety Course participant, was presented with a plaque to mark the event by Mine Safety officer David Howell. Assisting were Maxine O'Brien (left), Secretary Manager of the Lightning Ridge Miners' Association, Bruce Kremmer (centre), course presenter, Wolfgang Johansson (second from right) course presenter and Pat Ellis, President of the Grawin Glengarry Sheeppards Miners' Association. Photo courtesy of Laura Demankoe, The Ridge News

The two associations assisted with the course text; the Lightning Ridge Opal Mining Safety Guidelines. Course content is modified continually according to statistics supplied by the Lightning Ridge Accident and Emergency Centre and other sources. ■■

HEALTH AND SAFETY LEGISLATION

The Coal Mine Health and Safety Act 2002 was passed by the Parliament of NSW on December 5, 2002. It is a comprehensive package covering every aspect of coal mining health and safety including responsibilities for safety management systems and how they will apply to contractors and subcontractors, an increasingly important proportion of the NSW mining workforce. A draft law, the Mine Health and Safety Bill, which covers health and safety in the metalliferous mining and quarrying industry of NSW, has been tabled in the NSW Parliament for public information. ■■



Promoting safety in the
NSW mining industry



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*The New South Wales
Government is targeting
improved safety in all sectors of
the mining industry.*

Contacts

NSW Department of Mineral Resources
29-57 Christie Street
St Leonards NSW Australia 2065
PO Box 536
St Leonards NSW Australia 1590

Editor: Ian Lee
Graphic Design: Terence Stewart
Photography: David Barnes, Debra Thompson, Ian
Lee and Mine Safety and Environment staff, NSW

• To contact the Information Unit,
Mine Safety and Environment:
Phone (02) 9901 8437
Fax (02) 9901 8584
Email: thomsod@minerals.nsw.gov.au
Email: lee@minerals.nsw.gov.au
• To obtain publications contact:
Information Counter
Phone (02) 9901 8268
Fax (02) 9901 8247
email: orders@minerals.nsw.gov.au

Information is 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 risks according to its own hazard identification, risk assessment, control systems and monitoring process. Whereas all care is taken in producing NSW Mine Safety Update, the NSW Department of Mineral Resources 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 Mineral Resources endorsement. Editors please note: any articles in this issue of NSW Mine Safety Update can be reproduced with suitable acknowledgment of their source.

Free gas analysis program

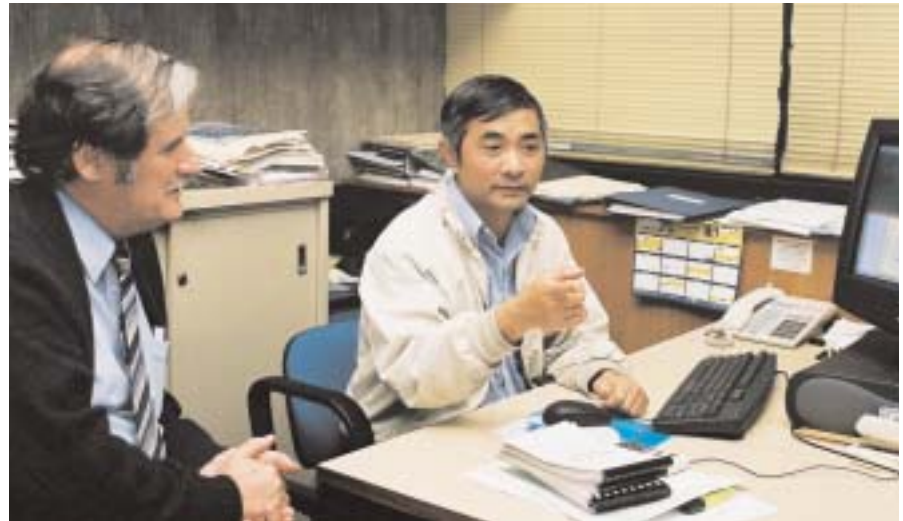
A computer program for analysis of explosive gas data has been written by Phan Phi Hong, Scientific Officer in the Mine Safety Technical Services section of the NSW Department of Mineral Resources.

It is named HGAS97 and it uses gas analysis data from a mine to determine the explosive nature of atmosphere within the mine and to monitor trends.

- Rapid processing of data to assess explosiveness.
- Windows-based, easy to use with a minimum of training.
- Generates graphical information for those managing an emergency.
- Results are presented so that relevant data can be viewed on one screen.
- Displays multiple graphs on one page for trend evaluation (raw data, air free data, oxygen deficiency ratio, etc.).
- User can select data of interest to be analysed & graphed.
- Data can be imported/exported.

A new explosive indicator (explosive angle) is included. Based on the Coward Diagram, it provides an effective method of plotting the explosibility of gas mixtures versus time.

HGAS97 can be used for routine analysis but it is most valuable in providing instant



Graham Fawcett, Manager of Mine Technical Services, and Phan Phi Hong discuss the gas analysis program that is available free of charge to NSW coal mines

information to mine management teams handling a spontaneous combustion, mine fire or potential explosion.

This is the latest version of the program developed by Mine Safety Technical Services for use in the Mobile Laboratories which respond to calls for assistance from mines managing a coal heating, fire incident or recovery operations.

After each incident attended by a mobile laboratory, a debriefing is held to assess what worked and what areas need to be further developed. HGAS97 incorporates lessons learnt under actual operating conditions over many years.

The program fits onto a standard floppy disc and runs in Excel on any PC that has MS Excel 1997, or later.

This means a backup can be carried on disc for loading onto other computers in case a gas analysis team has a computer malfunction, perhaps caused by a rough road into a mine site.

An opening menu page provides click on options for data entry pages, analysis and other pages displaying results and graphs.

Excel's workbook, with its graphing routines format, is ideally suited for this application. Confusion is avoided by the facility to use a separate page for each sampling point location. A help page file contains operating instructions while error signals flash onto the screen if impossible values are entered. These features are valuable during incidents when operators may be tired or stressed.

Results can be displayed on a single page with separate graphs for up to six chosen gases. Trends of explosibility according to time are plotted so the stage the mine incident has progressed to can be assessed.

The HGAS97 computer program is available without charge from Phan Phi Hong, Mine Safety Technical Services, the NSW Department of Mineral Resources. He can be contacted on (02) 9646 1644 or by email phanh@minerals.nsw.gov.au

It is on the safety website

Do you want up-to-date information on mining safety in NSW? Go to the NSW Department of Mineral Resources website: www.minerals.nsw.gov.au then click on Safety.

You now have a range of options to click on:

- Safety Alerts
- Oral Notification Check List for

notifying the NSW Department of Mineral Resources by phone of reportable incidents

- safety legislation
- Mine Safety Update
- links to other mine safety-related sites
- permits, certificates, exams, and
- safety publications.

www.minerals.nsw.gov.au

Learning from unexpected success

Adapted from Investigating success: a new use for our accident investigation skills, a paper delivered by Professor Jim Joy, Director of the Minerals Industry Safety and Health Centre (MISHC) of the Sustainable Minerals Institute, University of Queensland, to the 2002 NSW Mining Industry OHS Conference.

Many mines have developed advanced skills for investigation of incidents and accidents. These skills can be used to advantage by investigating successes.

No Eye Protection

An error in the last issue of Mine Safety Update has been noticed and pointed out by several people. The photo on page five showed Warwick Schofield, a NSW Department of Mineral Resources Mine Safety Officer at Lightning Ridge, wearing helmet and earmuffs but no safety glasses. Warwick was as surprised as anyone else by the photo. He always has a pair of safety glasses in his shirt pocket and he puts them on whenever he is on a mine site. He said he must have inadvertently left them off when asked to pose for this photo, taken to illustrate hearing protection. The fact that he was not actually operating the hammer at the time was no excuse. This incident is a reminder to us all that we must always wear the appropriate personal protective equipment. It is all too easy to forget but the consequences can be all too permanent! ■■

To examine the potential for investigating success, the NSW Minerals Council commissioned a study at Charbon Colliery near Lithgow in NSW. Charbon is a small, mainly underground mine with 60 people, who appear to have a positive organisational culture and good communication.

Charbon was experiencing unacceptable cable damage due mainly to cable crush from rib spall. There were also injury risks from manually handling heavy, awkward cables and hoses.

The deputy manager proposed a monorail to fix the problems. At the 1998 NSW Mining Industry OHS Conference, he discussed the matter with a BHP Billiton Manager, who invited him to view a monorail in a longwall development at Tower Colliery.

Charbon's mine manager supported the visit to Tower by the deputy manager, a crew deputy and two continuous miner drivers. They found the monorail could solve Charbon's problems, the system should not be overloaded with too many cables or hoses and installation quality was vital.

These findings were not documented but members of the group remained involved and transferred their observations to the design and installation phases.

Joined by the mechanical engineer in charge, the electrical engineer in charge and an electrician, the group selected a supplier and provided design input. Charbon asked for a 20-metre mock-up on the surface where everybody could examine it. Risk assessment was done and one monorail was installed.

Success was achieved by integration of 'human factors' through:

- selected "champions" visiting a similar system,
- "champions" talking to others,
- involving "champions" and others in design,
- setting up surface mock-up and encouraging all to explore it in work time

- giving initial ownership to one production team through commissioning, ramp up, design improvement and operation,
- familiarising other underground workers to the working monorail in groups of two, and
- introducing a second monorail to a waiting, keen crew.

Systematic accident investigation involves information gathering and analysis to find what happened and why. Outcomes should include implications to the management system as well as technical recommendations.

Event and condition charting should be used to assemble information needed for an event history. At Charbon, this proved the human factors were critical to the innovation/change management process.

Successful innovation begins with recognition that a problem exists and change is both needed and desired. There must be a commitment to giving the innovation a fair trial and users must see:

- the advantage of using it,
- its compatibility with existing practices and equipment,
- how complex and hard it is to apply,
- they have an opportunity to accept or reject, and
- they have the ability to observe the impact, good or bad.

These factors were all met at Charbon where management recognised the need for involvement and communication at every stage

Not all mines could use a monorail but all can gain from investigating the process of finding and implementing the change at Charbon.

Applying accident investigation skills proved learning from success is easier and at least as valuable as learning from failure. Technical remedies are only part of the solution. We must uncover and remember the systems that gave success one year to avoid failure the next! ■■

WESTERN NSW MINE OPERATOR FINED

A gypsum mine operator was found guilty of contravening Section 16(2) of the Occupational Health and Safety Act 1983, at a hearing of the NSW Industrial Relations Commission in September 2002.

Prosecution by the NSW Department of Mineral Resources followed the death of a two-and-a-half year old child in August 1999. The child had climbed from his father's truck while the father was tarping a load of gypsum. The child was killed by another truck. The mine operator has since put in place measures to reduce the risk of accidents. These included banning children from the site, loading only in daylight, a locked barrier across the access road and knowing who is on site. Other small mines in the area have adopted similar safety procedures. ■■

Safety Alert No: SAO1-11, was issued by the NSW Department of Mineral Resources on 8-7-01 to warn of the dangers to children on mine sites. The Safety Alert noted:

- People who are in charge of workplaces, including quarries and other mines, are responsible for the safety of anyone on their site, including visitors.
- Activities on mine sites, even very small sites, may be hazardous.
- Employees, contractors, suppliers and other visitors may have children with them on site from time to time. This can expose children to potential dangers.
- Owners, managers and supervisors of mines must ensure that their Safety Management Plans address the safety of all visitors including children, on the mine site.

IMPORTANT DATES

- MDG 15 Workshops for quarries and metalliferous mines. Mangrove Mountain 02-04-03, Maitland 09-04-03 Keith Chilman (02) 4942 2300
- "DMR electrical approvals to Certification" 26-03-03 Penrith Panthers
- Mechanical Engineering Safety Seminar: 21-05-03 Penrith Panthers
- 2003 OHS Conference: 24/26-08-03 (Note: venue change to Homebush Bay)
- Electrical Engineering Safety Seminar 12/13-11-03, Penrith Panthers Steve Stewart (02) 9901 8413

Certificate of Competency Exams

Applications to John O'Brien (phone 02 9901 8589), Secretary of the Coal Mining Qualifications Board, New South Wales Department of Mineral Resources, PO Box 536 St Leonards 1590, by 28-3-03.

- Open Cut Examiners: 8-5-03
- Undermanagers part B: 3-6-03
- Undermanagers part A: 9-9-03
- Surveyors: 3-7-03
- Mechanical Engineers: 6-8-03
- Electrical Engineers: 13-8-03
- Managers Part A: 2/3-9-03
- Open Cut Managers: 4-9-03
- Managers Part B: 22-10-03
- Above Ground Production Managers: applications close 9-5-03, exam 24-7-03
- Below Ground Production Managers, applications close 9-5-03, exam 25-7-03 ■■

SA OPAL MINING SAFETY



Coober Pedy opals. Photograph courtesy of the Office of Minerals and Energy in the Department of Primary Industries and Resources of South Australia

New South Wales and South Australia recently worked together in an opal mining safety program organised by Sophia Provatidis the Opal Mining Project Manager of the WorkCover SA, Mining and Quarrying OHS Committee. After attending a Lightning Ridge Opal Miners' Safety Course, Sophia Provatidis asked NSW opal mining experts to deliver the fourth in a series of travelling program of seminars being funded by the South Australian Mining and Quarrying Occupational Health and Safety Committee. Those she invited were David Howell, Mine Safety Officer, NSW Department of Mineral Resources, Professor Jim Galvin, Head of the University of NSW School of Mining, and Bernie McKinnon, former General Manager and Superintendent of underground coal mines and an opal miner for 15 years. They spoke to more than 300 miners in eight seminars at Coober Pedy, Lambina, Mintabie and Andamooka. For further information: David Howell, 02 6829 0678. ■■

Innovation Awards: bigger and better every year

The Innovation Awards, which were held on the Sunday afternoon prior to the opening of the 2002 NSW Mining Industry OHS Conference, continue to grow in stature and number of entries.

There were 27 entries from mines and six in a new category devoted to designers, manufacturers and suppliers. Despite a strict, 10-minute limit, there was time for only 20 of the mine innovations to be presented during the session but all were judged equally from their written entries.

Entries ranged from the \$80 magnetic base for hands-free use of a Dolphin torch at the Hunter Valley Operations of Coal and Allied to the \$1.2 million integrated emergency escape system installed in BHP Billiton, Illawarra, underground coal mines.

Judges were Professor Dennis Else, Chairman of the NSW Mine Safety Council and the National OHS Commission, Andrea Shaw, Shaw-Idea OHS Consultancy and Graham Terrey, Director of Mine Safety, NSW Department of Mineral Resources.

They made their assessments based on benefits/effects, significance, transferability across industry, innovation/originality and application of risk management principles.

First prize was awarded to Camberwell Coal for its hydraulic pressure bleed manifold, developed to prevent oil injection injuries.

Special Commendations were awarded to the roof fall protection developed by two Lightning Ridge opal miners; a ground accessible dozer servicing panel developed by Warkworth and an integrated system to prevent roof fall and manual handling injuries, which was developed by Springvale Coal.

Awards for the Designers, Manufacturers and Suppliers category went to Hydramatic Engineering for its Longwall Face Bolter and Drager for its compressed air breathing apparatus, combined with quick refill stations.

Presenting the awards, Professor Else noted that all the entries illustrated the continuing change of philosophy from one of making people fit machines towards one in which machines are being designed and manufactured to fit the people in a safer working environment.

Entries receiving awards or commendations are eligible to enter the National Mining Industry Safety and Health Innovation Awards conducted by the Minerals Council of Australia.

Some of the Innovation Awards entries are described here; others will be covered in future editions of Mine Safety Update. ■■

ROOF FALL PROTECTION FOR OPAL MINERS

Lawrie Cree and Ian Harrison, opal miners from Lightning Ridge, won a commendation award for a protective guard they had built for just \$500 after Ian was nearly killed in a roof fall. He was operating a mechanical digger in April 2002 when he was hit by a fall of rock and clay.

With a large boulder on top of him, Ian called for help. If Lawrie had not been in the mine, Ian would probably have died of suffocation. They stopped mining for five weeks while they developed a protective frame in which a digger operator can work.

Nearly a quarter of all injuries on the opal fields occurs in incidents like this.

In developing their protective structure, Lawrie and Ian said they used the hazard risk assessment taught in the Lightning Ridge Opal Miners' Course, run by the NSW Department of Mineral Resources. They also drew on experience gained from a combined total of 48 years of opal mining.

Lawrie and Ian said the protection device they designed is "fit for purpose" because it:

- protects the operator from rock falls and side roll ins,
- is flexible enough to negotiate tight corners in drives,
- is simple and easy to attach,
- does not interfere with operator vision or comfort,
- can be lowered into mines through a one metre circular shaft,
- does not interfere with the normal operation of the digger,
- allows the digger to be reversed without removing the protection, and
- does not affect digger stability.

Within the first few weeks of being fitted, the protection structure saved Ian from being hit by a small fall of stone. For further information contact: Laurie Cree (02) 6829 0734. ■■



Andrea Shaw, Professor Dennis Else and Graham Terrey consider Innovation Award entries.

Hydraulic pressure bleed manifold wins 2002 Innovation Award

The NSW Minerals Council Innovation Award for 2002 was presented to Camberwell Coal for an hydraulic pressure relief manifold developed for excavators and loaders at the opencut coal mine.

Repair and maintenance is frequently carried out on the hydraulic systems of these machines. The systems can contain stored pressures of up to 35 Mpa (5100 psi) and the hydraulic oil may be at temperatures above 100°C.

Before work is carried out the pressure must be released. The only way to do this was venting oil to the atmosphere by removing or loosening fittings and hoses. This created a risk of oil injection injury, eye injury and burns. Venting of hydraulic oil was also an environmental problem.

Hazard elimination began with development of isolation procedures in consultation with teams of site workers. They identified stored energies on the equipment and looked at energy release

techniques. Equipment manufacturers were consulted and the safest available practices were adopted.

Some of these practices left pressures as high as 10 Mpa in the systems, which could still only be released by removing lines or loosening fittings.

To overcome the problem, the Camberwell maintenance team developed a central bleed manifold in consultation with the mine workforce and representatives of equipment manufacturers.

A manifold is mounted on an easily accessible location on each machine. All hydraulic circuits are led back to the manifold and identified with small signs. A tap on each circuit is opened to bleed pressure to zero. The oil bleeds back to



Dwayne Minch tells the audience about the pressure relief manifold

hydraulic reservoirs. Each manifold is pre-delivery tested to twice the highest pressure that may be encountered.

The bleed manifolds have eliminated the risk of oil injection injuries, eye injuries, burns and environmental contamination. For further information contact Dwayne Minch on 0438 392 961 or email dminch@bigpond.com ■■■



Eliminating a fall hazard

In-pit servicing of bulldozers at the Coal & Allied, Warkworth opencut coal mine was identified as a high risk activity by a risk assessment following a safety observation.

The fill points were at the machine's engine at a height of approximately two metres. Operators had to climb up a ladder onto the dozer tracks dragging the fill hoses to reach the engine, transmission and hydraulic oil fill points.

The job was complicated because the fill points were located on opposite sides of the dozer so the operator had to climb down, reposition the service truck and then climb up the other side to complete the job.

This doubled the hazard exposure. The hazard was even greater in wet weather when the ladder and tracks were slippery with water and mud.

A solution was developed with consultation between dozer operators and the Maintenance Department. Trials were conducted and professional advice provided by a hydraulic hose specialist before the final design was implemented.

All fill points were moved to a single location accessible from ground level. The risk of fall or manual handling injuries during refuelling has now been virtually eliminated.

An additional benefit has been a saving of up to five minutes for each refuelling, nearly 200 extra bulldozer working hours per year!

For further information contact David Stark, Maintenance Manager, 02 65701561 – david.stark@can.riotinto.com.au ■■■

INNOVATIVE AWARD: Overcoming ground control problems

Springvale Coal was highly commended for introduction of a pro-active ground support mining system in consultation with employees.

During its short history, the underground coal mine was faced with ground control problems resulting in injuries, near misses and down time from incidents at the face and in the secondary support phase.

As well as the hazard presented by roof and rib falls, the miners faced manual handling risks while installing roof supports consisting of fibrecrete blocks weighing 25 kg, steel beams weighing 200 kg and Heintsmann beams weighing 120 kg.

Miners were also operating inadequately designed roof bolting equipment without adequate protection from rib falls.

Following a major roof fall, Springvale began a process of improvement in consultation with the mine workers and ergonomic experts.

Instead of a single solution, Springvale and its mine workers developed a comprehensive system, which included:

- better prediction of ground conditions,
- improved roof support technology: post grouted spinbolt,
- improved capability of bolting equipment,
- operator removal from rib fall areas and pinch points, and
- simplified roof support hardware and handling methods.

The system decreased operator exposure to rib fall and strain injury risk, decreased roof falls from 30 in five years to none in areas supported by post grouted spinbolts, reduced use of passive support, halved manual handling and increased development rates by 200%.

For further information: Richard Van Laeren, Technical Services Manager, Springvale Coal (02) 6350 1609. ■■■



"It is in the book," Ron Stothard, District Check Inspector Northern Region, tells Local Check Inspectors; Brett Smith and Peter Kearns. He was talking about the new Check Inspectors Resource Guide, which he introduced at the 2002 Conference for Local Check Inspectors. The Guide, published in preliminary form for comment and further development, is a small book that can easily fit into a shirt pocket. Ron Stothard said it is not a replacement for legislation but a simple explanation of the things a Check Inspector needs to know. "You will use it every day," he said. "Take it away, give me your feedback and we will make any changes you need in the final version."

For further information contact Ron Stothard 02 4990 7600. ■■■

Auditing safety systems and plans

Following training in Safety Auditing to Australian Standard AS 4804, NSW Department of Mineral Resources, Safety Operations officers have begun auditing mining safety management systems and plans. New legislation in both coal and general mining requires all mines to have safety management systems and plans in place and operating. The auditing measures both compliance with legislation and the effectiveness of the systems and plans. To begin with, auditing is focussing on coal mining systems that are highest on the NSW Department of Mineral Resources risk ranking. As it develops, the auditing will be extended to all other mining

sectors. Emphasis is being placed on identification of objectives and performance indicators in measurable terms. The audits are initially concentrating on improving safety management systems and plans for strata control and ventilation. Standards of engineering practice and inspection systems are currently being developed. As the auditing progresses it will cover the areas of: open cut transport, spontaneous combustion, contractors and the ability to transfer experience to general mining.

For further information on AS 4804 auditing: contact Paul Healey on 02 4942 2300 ■■■

Down the chute to safety

Fitting escape chutes paid off for Bulga Coal when an employee used one to escape safely from a burning excavator.

The incident occurred during the night shift on a weekend. During the crib break, the excavator had been refueled so diesel and hydraulic tanks were full.

Probable cause of the fire was failure of a flexible engine lubricating oil or diesel line, which sprayed oil on to a hot engine component.

During the shift, the operator had read the chute instruction placard mounted on the excavator cabin wall.

When the fire broke out, he immediately shut the machine down. The intense heat prevented him using the cab door so he got out through the right hand side window, deployed the emergency chute from its deck rail mounting, entered the chute, slid down to the ground and ran away from the fire.

"I could feel the heat of the fire as I slid down the chute," the operator said, "it wasn't uncomfortable and I didn't get burnt. Without the chute, I would have had to run down the stairs past the engines or jump six metres from the deck, I think the chute saved my life!"

The chutes were fitted after Greg Grant, Safety Officer, Bulga Coal, had become concerned about fire escape safety following several fires on mobile equipment in Hunter Valley, opencut coal mines.

Greg conducted a hazard assessment of emergency escape systems at Bulga and other opencut mines. "I found the most common means of escape were stairways and ladders fitted for normal access, or rope ladders thrown over the side when needed.

"Rope ladders are dangerous and difficult to use and they offer no protection from flames or radiant heat. I



The safety chute hanging from the burnt-out excavator at Bulga Coal

found some common injuries sustained from mobile equipment fires were fractured ankles suffered when jumping off.

"These are serious injuries and they can prevent an operator getting away from a fire once on the ground," Greg said.

While researching escape systems, Greg came across the escape chute. The concept is over 100 years old and in Europe safety chutes are commonly used on tall industrial structures or heritage buildings that cannot have outside fire escapes added.

The chutes at Bulga Coal have three concentric fabric tubes. The inside layer is kevlar to withstand heavy loads.

The middle layer is elasticised to support and grip the person escaping from the fire and the outer layer is fibreglass to withstand temperatures of up to 800°C and protect escapees from smoke.

They are simple to use. The person escaping from the fire pulls a lever to drop the chute out of its container, steps into the chute and slides gently to the ground. Descent can be slowed by pushing legs and arms out against the wall of the chute.

Note: this is not a product endorsement. The NSW Department of Mineral Resources does not endorse any products.

Instead it is an example of how one NSW mine used hazard assessment to identify and control a risk.

For further information, Greg Grant, Safety Officer, Bulga Coal (02) 6570 2407 ■■

Electrical Engineering Safety Seminar

Over 150 Mine Electrical Engineers

attended the Twelfth Annual

Electrical Engineering Seminar on

13 and 14 November 2002.

As in previous years, it was held at the Penrith Panthers Leagues Club, which was chosen because it is easily accessible to those travelling from all the major mining areas of NSW.

Industry and NSW Department of Mineral Resources experts presented a range of subjects ranging from design parameters to the practical solutions to electrical engineering safety issues that had been developed by individual mines.

Some of the subjects covered were:

- safe software design
- automatic machine incident investigation
- continuous miners
- standards of engineering practice
- rapid roadway development
- electrical protection
- testing
- safety performance, and
- improvement programs

Watch Mine Safety Update for upcoming safety conferences and seminars. ■■

Fitness for work – beyond drug and alcohol testing

Grant Davidson, General Manager, Cadia Shared Services, told the 2002 NSW Mining Industry OHS Conference about fitness for work procedures at Cadia Valley Operations. This article is adapted from his presentation.

The Cadia Valley fitness for work procedure (FFW) was implemented in June 2002 after 11 months of development. Prior to this, few formal procedures were in place for issues such as fatigue or stress.

An employee assistance scheme had been set up so employees, or immediate family, could seek independent, professional and confidential counselling for issues affecting fitness for work. Also in place was a system for haul truck drivers to take 10 minute 'fatigue breaks' but 'workgroup culture' made these breaks rare.

Cadia and Ridgeway had conventional drug and alcohol management procedures based on breath and urine testing. The philosophy tended to be legalistic and judgmental.

There was a focus on disciplinary action for alcohol and illegal drugs and no emphasis on over-the-counter or prescription drugs. People testing positive to alcohol were sometimes allowed to wait outside until they could blow a negative test.

The journey toward a changed perspective was triggered by:

- a desire to further reduce workplace incidents,
- the realisation that Fit For Work people are more effective and innovative, and
- general duty of care provisions in the OHS Act 2000 and General Rule 2000.

An FFW consultative committee was formed in response to these triggers. It was made up of management appointees and representatives elected by employees and contractors.

The committee realised it needed a full understanding of all issues, not just drugs and alcohol. It benchmarked existing practices and conducted research, which revealed industry preoccupation with drug and alcohol to the exclusion of other



Cadia Valley Operations is the combined Newcrest operation of Cadia open pit and processing plant and Ridgeway underground mine, 25 km south of Orange, NSW. It has 342 employees and 416 contract employees. During 2002-2003 it will produce 650,000 ounces of gold and 55,000 tonnes of copper.

issues. A draft procedure was produced but in hindsight it was an upgrade of existing procedures. Outside experts were asked for assistance. The head of Pharmacology, Sydney University, Professor Macdonald Christie pointed out the effects and risks of legal as well as illegal drugs.

He suggested a qualitative and not just quantitative approach because numbers from a testing program might not tell the whole story.

This was supported by Peter Simpson, Boylan, Simpson and Simpson Corporate Psychology Services.

He quoted an airline pilot study. Before consuming alcohol, only 10% of a study group failed a rigorous flight simulator program.

At 0.10% blood alcohol, 89% failed and 14 hours later, with no blood alcohol detected, 68% of them still could not perform the tasks.

He recommended a more holistic approach with a hierarchy of accountabilities supported by comprehensive education and professional rehabilitation.

With these insights, the consultative FFW committee developed the current program. Before its introduction, employees and contractors attended education sessions on all aspects, including fatigue, shift work and stress.

After attending education sessions, several workers realised they had FFW problems such as sleep apnoea and these are now being treated.

Pre-employment checks including assessments of shift work suitability, medical checks and drug or alcohol tests are the first line of defense but the primary focus is now on self-management of FFW.

Cadia Valley's occupational health and safety committees, which includes employee and contractor representatives, and management committees, reviewed the final draft prepared by the FFW consultative committee.

Suggested changes were reviewed and incorporated.

Success is only possible if all workers accept their responsibilities and understand the risks and consequences of not adequately managing FFW, which must be

a shared responsibility. To meet requirements of General Rule 2000, priority was given to drug and alcohol issues.

There has been a significant increase in the number of tests being conducted but a reduction in the number of positive results. This is despite more rigorous recording that includes false positives or positives for prescription and over-the-counter drugs.

People are now reporting medication and being moved to other suitable duties where necessary.

One person, who recorded a positive result for an illegal drug, has completed a program of counselling, rehabilitation and regular testing and is still employed.

Fatigue is being addressed by encouraging acceptance of fatigue breaks

in the work culture and Cadia Valley is looking at adapting haul truck and loader driver training simulators to assess FFW.

The FFW program was developed to improve safety performance. As well as achieving this, it appears to have played a significant role in improving productivity and reducing costs.

The fitness for work consultative committee at Cadia has an ongoing role in validating the current program and examining ways it can be further developed.

One area being examined is the need for appropriate performance measures to assess the impact of stress and fatigue.

For further information contact Frank Connor, Manager Safety and Support Services on (02) 6392 2312. ■■

FITNESS FOR WORK ISSUES

- Stress • Fatigue
- Shift work
- Alcohol or illegal drugs
- Personal or family problems
- Prescription or over-the-counter drugs

Paying attention to safety alerts

Safety Alerts from the NSW Department of Mineral Resources must be carefully considered because they tell of significant safety hazards and steps that can be taken to avoid them. Recently a quarry shotfirer was conducting a risk assessment before purchasing a drill rig. During the process, **Safety Alert SA 02-05 Driller killed at New Zealand quarry** was received. The recommendations of the Safety Alert were considered. A cut-off switch with a 10 second lag was specified and a new maintenance procedure developed with two people working so the machine can be stopped in an emergency. Retro-fitting of cut-off switches to older machines is being considered.

Recent Safety Alerts:

SA 02-19 November 2002, Security Alert
SA 02-18 November 2002
Miner killed in underground shaft
SA 02-17 November 2002
Self-contained breathing apparatus procedures
SA 02-16 November 2002
Park brake failure

SA 02-15 September 2002
Steering failure on Caterpillar dump truck
SA 02-14 September 2002
Injury from high pressure fluid injection
SA 02-13 August 2002
Longwall support cylinder leg failure
SA 02-12 August 2002
Quarry operator's arm caught in unguarded conveyor
SA 02-11 August 2002
Sand face collapses on loader
SA 02-10 August 2002
Dangers of large unsupported voids in underground mines
SA 02-09 August 2002
Hot water from pump burns quarry worker
SA 02-08 August 2002
Lightning Ridge miner injured by unguarded machinery
SA 02-07 July 2002
Concrete block wall collapses
Safety Alerts are on the NSW Department of Mineral Resources website: www.minerals.nsw.gov.au then click on Safety. If you do not have access to the Internet, you can get Safety Alerts from Steve Stewart, phone: 02 9901 8413. ■■

NSW DEPARTMENT OF MINERAL RESOURCES

HEAD OFFICE

Minerals and Energy House
29-57 Christie Street, St Leonards NSW 2065
(PO Box 536 St Leonards NSW 1590)
DX: 3324
Phone (02) 9901 8888
Fax (02) 9901 8777
TTY: (02) 9901 8656

ARMIDALE

Suite 4, 175 Rusden Street, Armidale NSW 2350
(PO Box 65 Armidale NSW 2350)
New Phone No: (02) 6776 0300
New Fax No: (02) 6776 0399

BROKEN HILL

Level 2, 32 Sulphide Street, Broken Hill NSW 2880
(NOTE CHANGED PO BOX NUMBER)
(PO Box 696 Broken Hill NSW 2880)
Phone No: (08) 8088 9300
Unchanged Fax (08) 8087 8005

COBAR

62-64 Marshall Street, Cobar NSW 2835
(PO Box 157 Cobar NSW 2835)
Phone (02) 6836 4392
Fax (02) 6836 4395

GATESHEAD

Lot 1766 Bullsgarden Road, Gateshead NSW 2290
(PO Box 2245 Gateshead NSW 2290)
Phone (02) 4942 2300
Fax (02) 4942 2323

LIDCOMBE

State Hospital Grounds
Cnr Joseph Street & Weeroona Rd, Lidcombe NSW 2141
(PO Box 76 Lidcombe NSW 2141)
Specialist Services & Applied Research Section
Phone (02) 9649 5266, Fax (02) 9646 3224
Mine Safety & Technical Services
Phone (02) 9646 1644, Fax (02) 9646 3224
Environmental Geochemistry Services
Phone (02) 9646 1344, Fax (02) 9749 1405
Investigation Unit
Phone (02) 9649 8959, Fax (02) 9649 5631

LIGHTNING RIDGE

Lot 60 Morilla Street, Lightning Ridge NSW 2834
(PO Box 314 Lightning Ridge NSW 2834)
Phone (02) 6829 0678
Fax (02) 6829 0825

LITHGOW

The Hartley Building
184 Mort Street, Lithgow NSW 2790
(PO Box 69 Lithgow NSW 2790)
Phone (02) 6351 3052
Fax (02) 6352 3876

LONDONDERRY

Core Library
947-953 Londonderry Road, Londonderry NSW 2753
Phone (02) 4777 4316
Fax (02) 4777 4397

ORANGE

185 Anson Street, Orange 2800
(PO Box 53 Orange NSW 2800)
Phone (02) 6392 6333
Fax (02) 6392 6363
After hours - emergency only - (02) 6392 6358

SINGLETON

1 Civic Avenue, Coal Services Building, Singleton NSW 2330
(PO Box 51 Singleton NSW 2330)
DX 7071
Phone (02) 6572 1899 (Inspectors)
Phone (02) 6572 4200 (Geology)
Fax (02) 6572 1201

WOLLONGONG

State Government Offices
Level 3, Block F, 84 Crown Street, Wollongong NSW 2500
(PO Box 674 Wollongong NSW 2520)
Phone (02) 4227 1699
Fax (02) 4226 3851



Do the right people in your organisation read MINE SAFETY UPDATE?

NSW Mine Safety Update and Safety Alerts are only of assistance if read by the widest possible cross section of people who can influence safety performance in mining. If you want to get Mine Safety Update or Safety Alerts mailed directly to you at home or work, or want them to go to someone else, please fill in the form, fax it to us and we will add the name to the mailing list.

TO: Steve Stewart, Mine Safety Performance Improvement Division, NSW Department of Mineral Resources, Fax number: (02) 9901 8584

Please send me by mail MINE SAFETY UPDATE SAFETY ALERTS

Name:

Position:

Mine / Company:

Address:

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Postcode: