



MINESAFE

ISSUED BY THE MINING OPERATIONS DIVISION OF THE DEPARTMENT OF MINERALS AND ENERGY (WA)

TARGET: ZERO FATALITIES



This fatal accident should not have happened. The only acceptable level of fatalities is zero.

On page 8 there is a brief description of this fatality and others which occurred over the last two years. All of these could have been prevented.

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The Minesafe committee wish readers a safe and enjoyable Christmas. Left to right Chris Stubley, Kim Williams, Catherine Stedman, Mark Butson, Anna De Filippi and Frank Richards.

CONFINED SPACE HAZARDS

An employee engaged in rubber lining operations lost consciousness following a period of work inside a ball mill.

Investigations found that the ball mill was not adequately ventilated and the rubber adhesive in use was a chlorinated hydrocarbon known to have vapours heavier than air.

No oxygen or contaminant monitoring equipment was in use and thus the air quality was unknown.

No consideration was given to the narcotic effects of the adhesive or the possible flammability or toxic decomposition products which may be produced by the adhesive coming into contact with hot lights.

Accidents of this type can be prevented by rigidly following the provisions of Australian Standard 2865, "Safe Working in a Confined Space".

The main points are:

- Confined space entry permit
- Isolation
- Testing of Atmosphere
- Personal protective equipment
- Use of chemical agents
- Hot work arrangements
- Stand-by personnel and rescue arrangements, including safety harnesses, lines, self-contained breathing apparatus and adequate first-aid procedures.

STOP PRESS

The Mines Safety and Inspection Act and Regulations were proclaimed in the Government Gazette on 8 December 1995 and came into operation on 9 December 1995.

Copies of the Act and Regulations can be obtained from:

State Law Publishers
10 William Street
PERTH WA 6000

Telephone: (09) 321 7688

Facsimile: (09) 321 7536

GUEST EDITORIAL

"All accidents are preventable" and "the only acceptable level of fatalities is zero."

Simple phrases - almost safety clichés - that given lip service mean nothing, but taken onboard with genuine commitment can have a huge positive impact on an organisation's productivity and morale because they are achievable.

The DuPont company, the world leader in safety and health performance, has proved it. And they will be the first to tell you that it was not easy.

Indeed, that was part of the DuPont message to participants at the mining industry-sponsored safety seminars held earlier this year to inform companies of their responsibilities under the State's new Mines Safety and Inspection Act.

One of the Act's key features is to vest the ultimate responsibility for safety with the corporation which owns and operates the mine - the buck no longer stops with the registered and certificated mine managers.

Exploration activities are now covered by the Act and specific action plans are being formulated to target its poor safety performance, which has been difficult to

monitor due to its itinerant nature and broad geographic range.

The Act expands on the general principles of 'duty of care' and is integral to a broader thrust to place greater responsibility for occupational safety and health issues on industry.

In the workplace, it will mean the Department starting to largely remove itself from active involvement in day-to-day mining occupational safety and health matters.

The long-term goal will be to rely on a broad audit approach by departmental officers to ensure that adequate systems are in place to manage these matters, with low-level compliance auditing done by certified third parties.

The 'safety case' approach will be used increasingly to ensure that new (and existing) operations take account of, and plan for, the management of safety and health as part of the overall management process.

The Department's new MINet computer system will help it administer the Act, while providing industry with a vital link to a range of the latest safety information so

that it can deal more effectively with its increased responsibilities.

To industry's credit, many progressive companies are self-imposing their own high safety standards, going beyond the State's comprehensive laws.

I applaud this initiative as it serves as a positive role model for other mining companies in Western Australia. However, the best we have done is still not good enough.

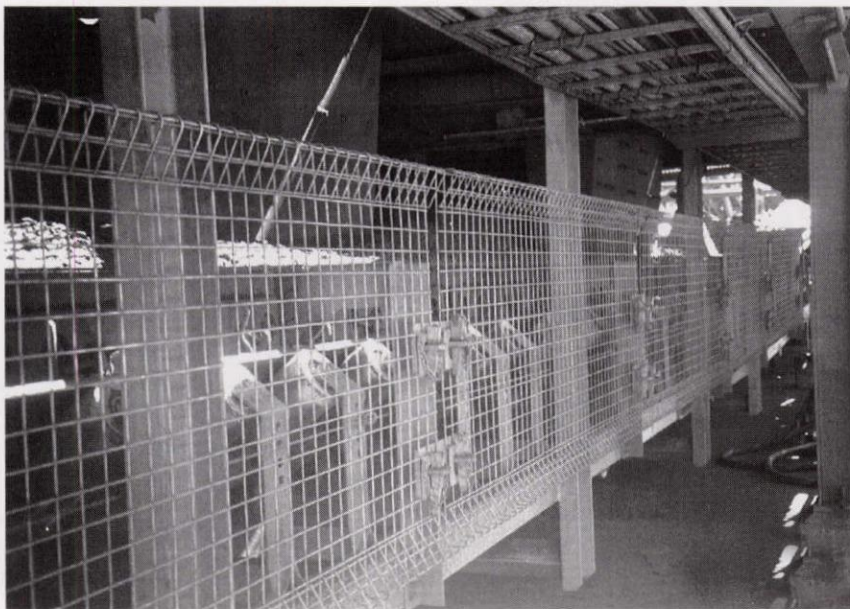
The injury incidence curve for Western Australia's mining industry has begun to plateau. More significantly, fatalities still occur and this is simply not acceptable.

Western Australia's mining industry now has the best safety performance in the State, with the lowest workers' compensation premiums.

But to prevent injuries and stop people being killed in mining accidents, we must move from being the leader in the State's safety performance, to achieving world class standing.

It's a big task, but it is achievable and it's certainly worth the effort.

Have a happy and safe Festive Season.



Conveyor guarding can prevent fatalities.



K R Perry
Director General

WHAT'S GOING WRONG IN THE DRILLING INDUSTRY?

It's been a bad few months for the drilling industry with a string of accidents involving personal injury each with the potential to be either life threatening or permanently disabling.

A jack slipped during a tyre change on a service truck which resulted in an offsider gashing his leg when he was struck by the truck tray.

A wet and slippery road, a two tonne truck out of control and three drillers not wearing seatbelts resulted in one having crushed vertebrae and the others being badly bruised.

Another offsider needed skin grafts on his thumb after his hand was jammed between a spanner and the drill slip table.

Another received bruising and nerve damage to his arm while he was lifting a drill rod from the truck.

An offsider, on his first day on the job caught his hand between the two halves of the drill table, and crushed fingers which have since been amputated. Yet another offsider fractured his ring finger when it became jammed between the stillson wrench and the drill mast.

Attempting to bleed a pressure pump that had exposed wires resulted in a driller receiving an electric shock.

Underground, a long hole driller was affected by blast fumes when a nearby heading was blasted during crib, and a raise driller damaged ligaments in his

ankle when he slipped off the bull hose basket while he was coiling the hose.

Nine serious accidents to personnel in a two month period. Amputations, spinal injuries and nerve and ligament damage are personal catastrophes for people who earn their living doing physically taxing work. The statistics are bad enough. They take on a whole new meaning when you add a name, a face and a body that is not quite as good today as it was yesterday.

In the same two month period, trade assistants and fitters have chalked up broken bones, amputations, back injuries, bruises, crush injuries, puncture wounds, burns, scalds, and electric shocks.



Innovative solution to dump truck operator access.

AEROSOL SPRAYS AND ELECTRICAL EQUIPMENT

A series of incidents where fire and explosions within electrical cabinets have resulted from the use of inappropriate aerosol solvents reinforces a need to remind electrical workers to exercise more care.

Each incident was caused by normal sparking at relay or push-button contacts which initiated flammable vapours introduced by either the aerosol's propellant or its contents.

From the wide range of products available some are more suitable than others for general use on electrical equipment and have been specially formulated using an inert propellant and solvent which do not leave flammable residues after drying.

Aerosols are commonly used for cleaning or drying and problems arise when electricians spray equipment with the nearest aerosol available without considering whether the solvent is suitable. In addition to the fire hazard certain solvents can also dissolve various plastics and insulating materials.

The message is obvious: only use solvents that are suitable for the purpose, and follow the recommendations and warnings clearly prescribed by the manufacturer on the product container.

For further information contact Denis Brown Tel: (09) 222 3546



OVERLOADING OF CRANES - WHAT MUST BE DONE

A recent serious accident with a monorail crane, where the beam weldment failed allowing the beam to strike a person on his helmet, has highlighted the dangers associated with the commonly found instances where hoists installed on monorail and jib beams are not compatible with the beam safe working loads (SWLs).

Owners and operators of monorail and jib cranes must ensure that the hoists installed on their monorail and jib beams have SWLs not greater than the designed SWLs of the beams and their supporting structures.

Hoists, whether powered or manual, have inbuilt capacities in excess of their rated SWLs. For example a 2.0 tonne SWL powered hoist may have a **short-duration** capacity in excess of 4.0 tonnes and if fitted to a properly designed monorail beam, of 2.0 tonnes SWL, this excess hoist capacity will not result in

failure of the beam or supporting structure because of the inbuilt capacity of the beam and supporting structure. The inbuilt capacity (failure load) of the beam and supporting structure would be of the order of 4.4 tonnes.

The inbuilt capacity or safety factor of a beam and supporting structure will be completely nullified if, for example, a 5.0 tonne SWL hoist is fitted to a 2.0 tonne SWL monorail beam. In this case the short duration capacity of the 5.0 tonne SWL hoist would be in excess of 10.0 tonnes and the beam and supporting structure, with an inbuilt capacity of 4.4 tonnes, would fail catastrophically if the hoist is used to capacity.

Whilst it is recognised that it may be an unusual situation where a person would attempt to lift 10.0 tonnes with a 2.0 tonne SWL monorail crane, the potential is there and this potential can be addressed by

simply fitting the correct capacity hoist on each monorail or jib beam.

APPROPRIATE
SURVEYS AND
ACTION IS
RECOMMENDED FOR
ALL OWNERS AND
OPERATORS OF
MONORAIL AND JIB
CRANES

OCCUPATIONAL HEALTH FILE:

MANAGEMENT OF CRUSH INJURIES

Because of the continuing concern voiced by many people on minesites over how best to handle crush injuries, a Medical Bulletin has been issued by Dr Brian Galton-Fenzi, Consulting Occupational Physician, on the appropriate medical management.

"Crush injuries occur when a substantial weight, such as a rock or piece of equipment, falls onto a limb or the trunk of a person" said Dr Galton-Fenzi. "The problem arises when this weight is removed, after being in place for over an hour, because the chemicals released from the severe tissue damage can circulate round the body leading to shock and kidney failure".

Current medical management suggests that if the weight has been present for less than an hour then it is important to remove the injured person as rapidly as possible to suitable medical facilities. If there is an appropriately trained person available then an intravenous line can be inserted, provided this does not delay the retrieval. "The use of constrictive bandages or air splints do help in maintaining the blood pressure" Dr Galton-Fenzi said.

For those crush injuries longer than an hour, a venous line must be set up by a trained person before removal of the crushing weight. "Intravenous fluids are then run in rapidly to maintain blood pressure and reduce the effect of the chemicals arising from the damaged tissues" commented Dr Galton-Fenzi.

Once the crushing weight is removed it is important to transfer the person to hospital and intensive care as fast as

possible to reduce the effects of tissue damage chemicals on the body.

"The chemicals arising from severely damaged tissue can cause long lasting effects in the injured person, especially the kidney. Appropriate management of a crush injury case is most important" Dr Galton-Fenzi summarised.

For further information contact Dr Galton-Fenzi Tel: (09) 222 3650.



Underground rock fall. Typical cause of crush injuries.



Urgent attention to crush injuries is vital.

OCCUPATIONAL HEALTH FILE:

LEAD EXPOSURE TO FIRE ASSAY WORKERS IN THE GOLD INDUSTRY

The graph below is a summary of all the workplace air samples of lead dust and fume for workers involved in the gold industry during the period 1986 to 1994. The results were submitted to the Department via the CONTAM system.

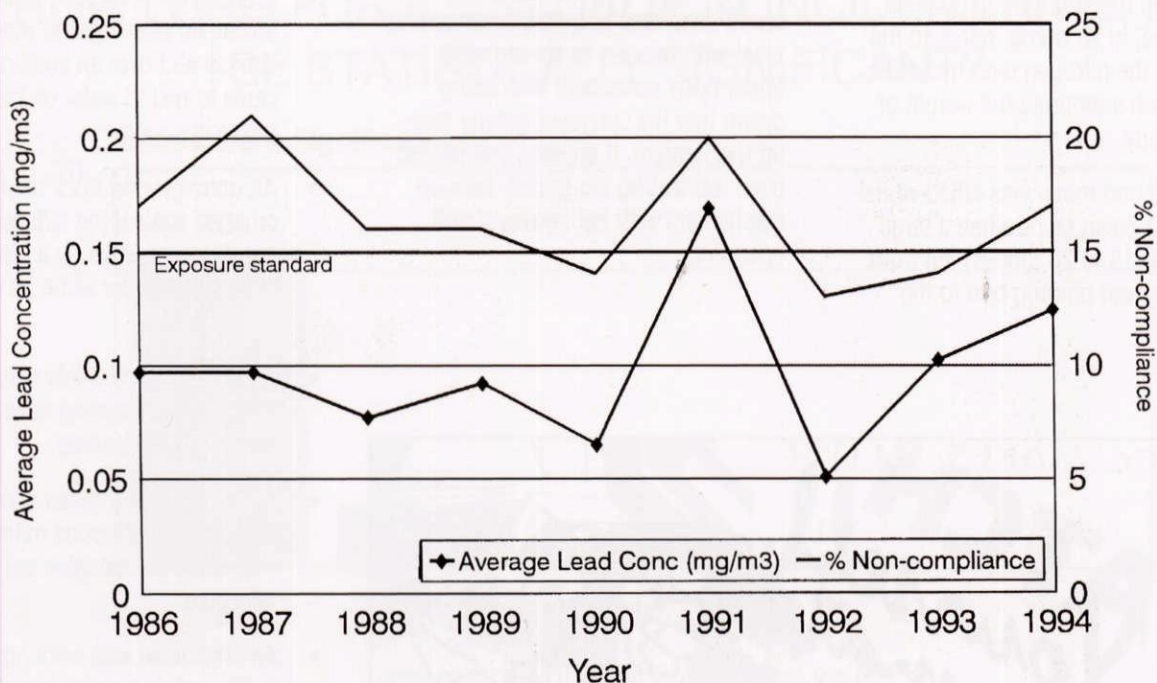
The graph shows that in 1991 the lead fume levels, on average, exceeded the occupational exposure standard for lead of 0.15 milligrams per cubic metre (mg/m^3). For the other years, levels have generally been close to the standard, with an upward trend occurring through 1993 and 1994. This is a concerning trend because of recent international proposals to lower the lead standard to $0.05 \text{ mg}/\text{m}^3$. Also of concern is the level of non-compliance with the exposure standard which is typically in excess of 15%. This analysis indicates that work practices and controls during fire assay procedures require improvement.

Exposure to very high levels of lead fumes can cause immediate health effects, such as dizziness, insomnia and kidney and liver damage. Exposure to relatively high levels over a number of years may not

cause immediate health effects, however as lead accumulates in the body it can result in kidney damage, affect blood and the foetus.

To minimise exposure to lead fumes, it is essential that furnaces used in fire assay be fitted with fume control equipment and that the equipment is maintained in good working order. Exposure to lead dust may be reduced by improving work procedures, such as using pre-mixed fluxes, undertaking sample preparation using dust extraction cupboards and installing extraction ventilation above furnaces. Careful attention must also be paid to personal hygiene, as lead on hands can be absorbed into the body through eating food or smoking.

For further information, contact your local inspectorate office.



DESCRIPTION OF FATAL ACCIDENTS

DESCRIPTION OF FATAL ACCIDENTS 1994/95

Nine persons were killed in work related mining accidents in 1994/95. Three of the fatalities occurred underground and six on the surface.

- A haul truck travelling fully loaded down a ramp mounted a windrow and fell onto its side. The driver was killed when the cab was crushed on impact with the road.
- A mechanical fitter inspecting the swing motor coupling of a face shovel received fatal injuries when his head was trapped between the hoist drum and a protruding flange boss.
- A contractor's maintenance fitter inspecting the front suspension strut of a dump truck was killed when he was crushed between the body and a tyre of the truck. It appears that he undid several bolts holding the top plate of the strut and, in so doing, released the pressure in the nitrogen over hydraulic system which supported the weight of the truck body.
- An underground miner was killed whilst working in a steep stope when a large slab of rock (15 to 20 tonnes) fell from the hanging wall pinning him to the ground.
- An underground miner operating a remote controlled load-haul-dump unit was crushed between his machine and a sidewall of the drift where he was working.
- An underground miner was killed while working with another man in removing a ladder from a rise. The miner had been working from the lowest deck of a three-deck stage suspended in the rise and it appears that he had just unbolted a section of the ladder when he fell into the stope void below.
- A contractor's diamond driller was killed when caught between a rotating drill rod and the mast of a drilling machine he was operating. He suffered severe multiple injuries.
- A labourer was found dead in a temporary rubbish dump. He had suffered crush injuries as a result of being run over by a mini bus that had apparently been left unattended and had rolled down the slope into the rubbish pit.
- A contractor's crusher operator was found dead next to a mobile screening plant with injuries to his arm and upper body consistent with being drawn into the conveyor gravity take-up mechanism. It appears that he had been lubricating the gravity take-up mechanism with the conveyor still operating.

DESCRIPTION OF FATAL ACCIDENTS 1993/94

Seven persons were killed in accidents at work on mines in 1993/94. Three of the fatalities occurred underground and four on surface.

- The operator of a bucket wheel reclaimer was killed when the upper structure of the reclaimer parted catastrophically from its lower part. This was the result of an imbalance caused by the loss of the bucket wheel when its drive shaft failed.
- The driver of a tractor-water tank assembly was killed whilst driving up a 1 in 7 incline when the front wheels of the tractor left the ground trapping the driver between the water tank and the tractor.
- A passenger in a light vehicle sustained fatal injuries when the vehicle slid over an embankment and came to rest in water on the passenger side.
- An underground truck driver was crushed against the sidewall of a stope access drive by a remote controlled loader while he was out of his vehicle.
- An underground miner was struck by a rock while watering down in a development heading.
- An underground miner was crushed between a continuous miner and a wall while the machine was being relocated.
- An electrician was working from a ladder repairing a broken cross arm on a power pole when he contacted a live 22kV line and was thrown from the ladder.



THE LIMITATIONS OF LOST TIME INJURY FREQUENCY RATES

The WA mining industry currently has approximately 1000 Lost Time Injuries (LTIs) per year. With 200 sites or groups of sites reporting to the Department's AXTAT system, this represents around 5 lost time injuries for each site every year.

Although LTIs can provide valuable information on an industry basis, on a site basis it should be appreciated that they have limited value particularly when there are less than 20 per year.

The chart below illustrates this point.

For instance, if a company was able to reduce their number of LTIs from ten down to five in any given year, this level would need to be maintained for a 3.2 year period before it would be statistically significant. This period would be extended to 16 years if a drop of two down to one had occurred.

People using lost time injury frequency rates (LTIFRs), as a measure of safety performance, need to be mindful of the following:

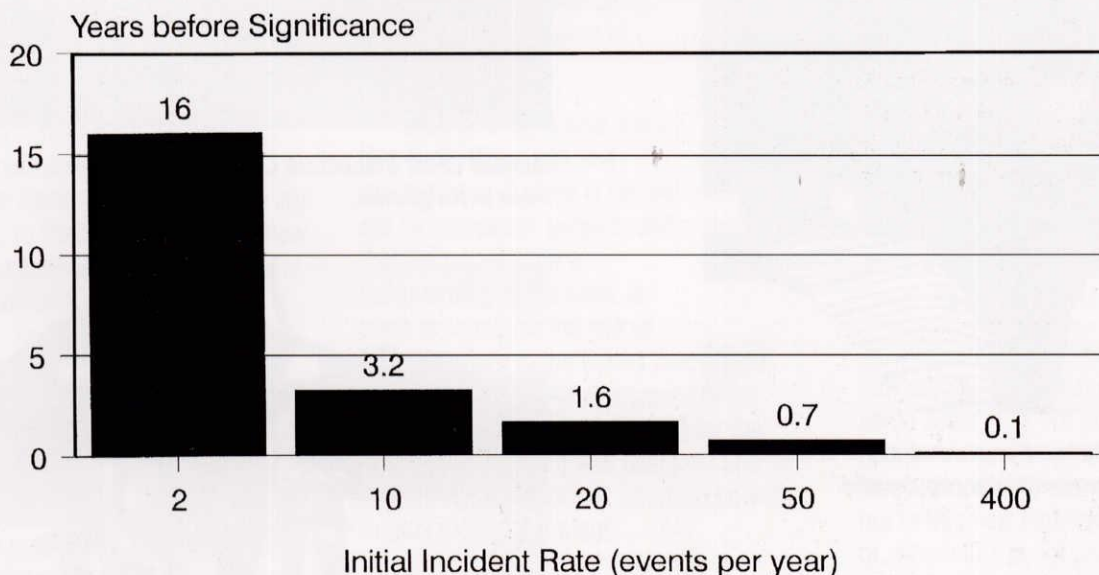
- They are subject to random fluctuations. Is safety fully controlled if, by chance, there are no accidents over a set period of time?

- They measure failure, not success;
- They reflect the success, or otherwise, of safety measures taken some time ago;
- They measure injury severity, not necessarily the potential seriousness of the accident;
- They may under-report (or over-report) injuries and may vary as a result of subtle differences in reporting criteria;
- They are particularly limited for assessing the future risk of high consequence, low probability.

(Shaw, A. 1994, OHS Performance Indicators for Benchmarking, Worksafe)

Clearly, the time has come for companies to go beyond LTIFRs and develop better indicators for safety performance measurement.

HOW LONG FOR A 50% DROP IN INCIDENT RATE TO BE STATISTICALLY SIGNIFICANT?



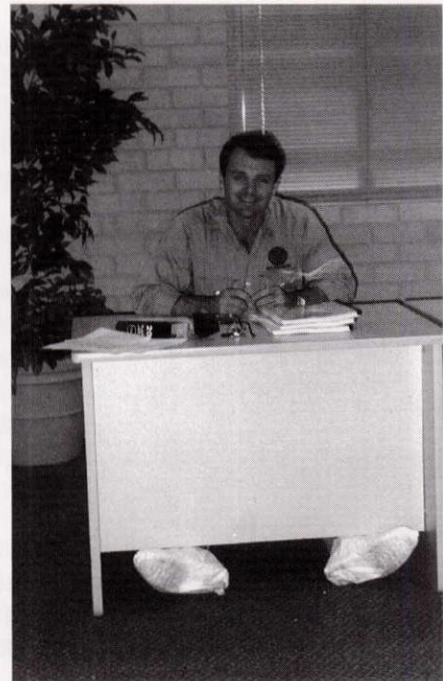
Source Haines and Kian, p.239

PEOPLE AND PLACES



"When you think you have the right answer, press your lemon...."

Occupational Health and Safety undergraduates, from Curtin University's School of Public Health.



Andrew Harding (Hammersley) models the latest in P.P.E. for safety boots.



Dr Brian Galton-Fenzi conducts a seminar on health surveillance regulations.



Annual Chief Inspectors Conference held in Kalgoorlie.



Yarrie Mine Rescue refresher training. Who has the nicest legs?

NEW PLANT REGULATIONS

Part 6 of the new Mines Safety and Inspection Regulations 1995 is concerned with *Safety in Using Plant in Mines*. The new regulations are a significant change from the old Part 6 *Machinery in Mines* regulations under the Mines Regulation Act 1946.

The old regulations were prescriptive and set out precisely what had to be done (or avoided) in order to comply with the law. The new regulations, largely written in the enabling style, tell the reader the result which has to be achieved, but not how to achieve that result. This has to be determined by reference to the specific circumstances of each case.

The new plant regulations are based on and are consistent with the *National Standard for Plant* issued by Worksafe Australia in July 1994. Plant is defined (under the Mines Safety and Inspection Act) to include "machinery, equipment, appliance, implement, or tool and any component or fitting of or accessory to any such article", so the application of the new legislation is significantly greater than the "machinery" defined under the old regulations.

Duties are cast on a number of individuals under the plant regulations.

The employer (including the principal employer) must ensure that plant is operated and maintained in a safe fashion, basically part of his duty of care under the Act. Guidance is given in the regulations as to the kinds of things which the

employer must consider when fulfilling this duty, but, importantly, the duty is not limited to doing only those things. He must identify hazards associated with any plant on the mine, assess the risks associated with those hazards and do whatever is practicable in a given situation to reduce those risks.

Designers, Manufacturers, Importers, Suppliers (including hire companies) and Installers or Erectors also have their own range of duties. In each case, they must also identify hazards and assess and reduce risks. Where one or more of these persons is not within the jurisdiction of the State of Western Australia (say, an overseas designer and manufacturer) the responsibility for fulfilling those duties falls on the next person in the "chain of command" (in this case, the importer of the plant).

This process of identification of hazards and assessment and control of risks extends to alteration of the plant, changes to the way the plant is used and changes in the system of work associated with the plant. In each of these cases, it is the employer's responsibility to ensure that the process is carried out.

Employers must also ensure that installation, use and maintenance of plant is carried out by competent persons and that the positioning and safeguarding of the plant is such as to reduce the risk of harm or injury to the lowest practicable level. They carry the responsibility for ensuring that plant is only used for the purpose for which it was designed and for preventing unauthorised interference with or alteration to the plant.

Plant must comply with the relevant Australian Standards and it is the employer's responsibility to ensure that it

does so. Designers, manufacturers, importers and suppliers must also ensure that classified plant (boilers, cranes, lifts, hoists and pressure vessels) is designed, constructed and tested in accordance with the appropriate Australian Standard.

Certain classified plant (listed in the regulations) must be registered with the State mining engineer. Such plant is subject to a regime of statutory inspection similar to that in place under the Mines Regulation Act 1946. Inspections may be carried out either by an inspector or by a person approved by the State mining engineer for that purpose. There is a new requirement whereby incidents causing or suspected of causing breakage, distortion, damage or failure of registered classified plant must be reported to the State mining engineer.



Plant safety in mines - Significant changes have been made to the old machinery regulations.

There are many other elements in the new regulations which will require study in some detail (it is not possible to give a detailed review of all these provisions here). Hopefully, embracing the regime set out in this new legislation will eliminate, or, where this is not practicable, will at least significantly reduce the risks to safety and health arising from the use of plant in the mining industry.

GAS MONITORING INSTRUMENTS

Gas monitoring instruments are becoming increasingly common on minesites, particularly small portable electronic instruments, which are used as personal monitors for gases such as hydrogen cyanide, carbon monoxide and sulphur dioxide. It is your responsibility when you buy a new instrument to ensure that:

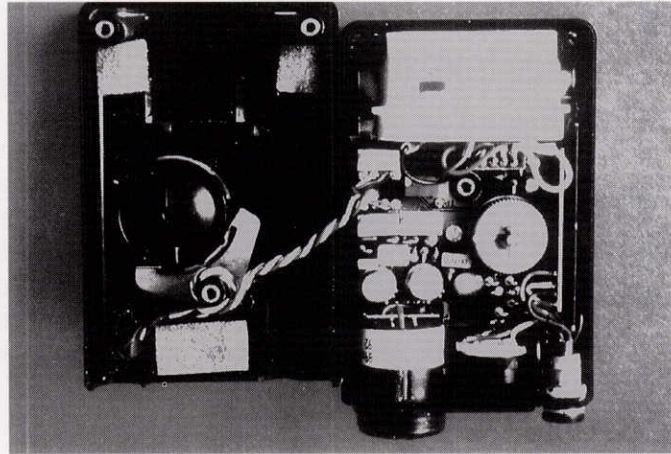
- (a) The supplier has installed the correct sensor,
- (b) The instrument is calibrated, and
- (c) Any alarms are set at the appropriate exposure levels.

To operate correctly instruments need to be continually maintained, including recalibration of sensors every 6 months or sooner in adverse operating conditions. Sensors are normally replaced every 1 to 2 years. Maintenance may be costly, and needs to be taken into account when you purchase instruments.

Several companies offer a calibration service for gas monitoring instruments, while some mining companies do their own calibration. Calibration involves the purchase of "Span" gas or similar cylinders which contain known concentrations of the particular gas of interest.

The inspectorate reports that minesite gas monitors have been found out of

calibration and occasionally, the sensors have failed. **This can have fatal consequences, particularly when they are used for confined space monitoring or where elevated toxic gas concentrations can occur.** "Duty of care" requires the employer not only to provide a means of monitoring for toxic gases, but to ensure such systems are effectively maintained.



Sensors are normally replaced every one to two years

EXPLOSION OF HYDROGEN PEROXIDE DRUM

Most gold miners are aware that the addition of hydrogen peroxide to leach circuits can assist with gold recovery. Fewer know that hydrogen peroxide may also be used as a rocket fuel ingredient, since it is a powerful oxidiser. In a recent incident this property was shown when an "empty" drum of hydrogen peroxide was involved in an explosion at a WA minesite.

The mine concerned stored gravity circuit concentrate tailings in empty hydrogen peroxide drums. No problems had been experienced for a year despite the fact that some drums could contain up to 2 - 3 litres of residual peroxide. However at the time of the incident the tailings contained an abnormally high concentration of pyrite (an iron sulphide).

A fitter working about 10 metres away heard a hissing sound coming from an empty drum while the adjacent drum on the pallet was being filled with tails. Suddenly

the empty drum exploded and burst its strapping. Fortunately it was propelled away from the fitter and travelled over steelwork, a conveyor and the roof of a building before landing 45 metres away. The drum was later inspected and had burst in a vertical line, indicating it had been under considerable internal pressure before exploding. Exact facts are unclear but it is likely some of the tails entered the empty drum.

Hydrogen peroxide solutions can be unstable and concentrated solutions may react rapidly with organic material, or any finely crushed sulphidic material such as pyrite. These reactions are strongly exothermic (heat generating) and the solution can eventually boil while simultaneously generating oxygen. In this case despite a small bung being missing the build up in steam and gas pressure apparently ruptured the drum, propelling it through the plant.

Using drums containing any residual chemical is a potentially hazardous practice and not recommended. Drums should be chemical free before they are disposed of or reused. Apart from the possible explosion hazard should foreign material enter the drum, skin contact with hydrogen peroxide can cause severe burns and ulceration.

Ideally the used drums should be cleaned out at changeover time, by filling them with water from a hose which dilutes any residual peroxide. Washings could be directed into the leach tanks where it will assist the leach process. After several rinse cycles the empty drum can be safely disposed of.

SAFETY MAKES SENSE



COMMUNICATION CHECKLIST

	YES	NO
• Employees are kept informed about where the company is going.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees are told about any changes to policies and procedures as soon as they happen.	<input type="checkbox"/>	<input type="checkbox"/>
• Senior managers regularly visit work areas to talk to employees.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees are told what a good job they are doing.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees know why and how things should be done.	<input type="checkbox"/>	<input type="checkbox"/>
• Line managers know their crews as individuals.	<input type="checkbox"/>	<input type="checkbox"/>
• Incidents in the workplace are discussed with employees.	<input type="checkbox"/>	<input type="checkbox"/>
• Management demonstrates its commitment to health and safety.	<input type="checkbox"/>	<input type="checkbox"/>
• At tool box meetings employees are relaxed, and openly talk about their concerns.	<input type="checkbox"/>	<input type="checkbox"/>
• Whenever the rumour mill goes into action, a correct version of the issue is immediately given to employees.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees understand health and safety issues and their implications.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees are informed and involved in decision making that will have a direct impact on them.	<input type="checkbox"/>	<input type="checkbox"/>
• Bulletin boards and other information resources are updated constantly.	<input type="checkbox"/>	<input type="checkbox"/>
• "Need to know" information is communicated face to face.	<input type="checkbox"/>	<input type="checkbox"/>
• Supervisors and OHS committee members are always briefed, so they can answer employees' questions.	<input type="checkbox"/>	<input type="checkbox"/>
• Supervisors are given communication training.	<input type="checkbox"/>	<input type="checkbox"/>
• Information going to employees tells them what they want, or feel they need to know.	<input type="checkbox"/>	<input type="checkbox"/>
• Employee interest in the company is stimulated by giving them "big picture" information.	<input type="checkbox"/>	<input type="checkbox"/>
• Communication channels are constantly being improved.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees know management value their opinions and ideas.	<input type="checkbox"/>	<input type="checkbox"/>
• All written communication is reader friendly.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees are encouraged to ask questions and get answers.	<input type="checkbox"/>	<input type="checkbox"/>
• Workplace morale is high.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees know what they are supposed to be doing and why.	<input type="checkbox"/>	<input type="checkbox"/>
• Employees all know how to do what they are supposed to be doing.	<input type="checkbox"/>	<input type="checkbox"/>

NEGATIVE RESPONSES INDICATE COMMUNICATION GAPS THAT CONTRIBUTE TO MISUNDERSTANDING, MIXED MESSAGES, LOW MORALE AND INCIDENTS!.

INCIDENTS IN THE WORKPLACE ARE ALL ABOUT CAUSE AND EFFECT.

This extract from Ann Landers Column, Field Newspaper Syndicate, illustrates the point:

Dear Ann Landers,

I have never written to you before, but after I read the letter signed "lonesome" I knew my time had come.

My in-laws are also "lonesome" or at least that is what they tell everybody.

We hear from many people that they complain constantly about how we ignore them and how hurt they are. It burns me up.

Last Sunday my husband and I and the kids went to see them and it was the same old story. Grandma and Grandpa talked about nothing but how sick they are, how much they suffer (she with backaches, he with rheumatism in his legs). It is a real contest to see who is in worse shape. Then they tell us for the 50th time about how bad their operations were. (Hers two years ago for a tumour, his five years ago for a hernia.)

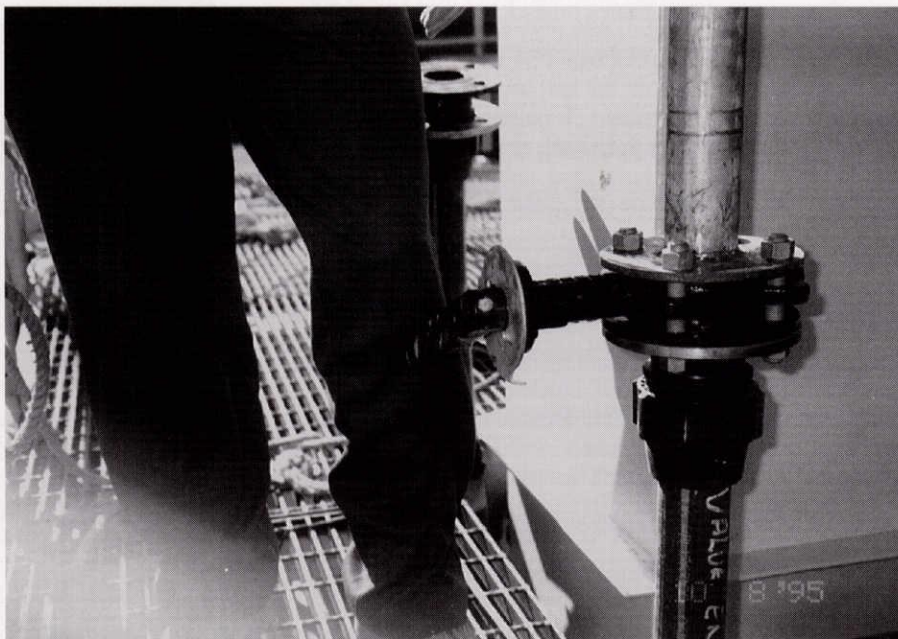
They are so self centred it is awful. Never a question about the children or my husband's job or my interests. All they want to do is talk about themselves and their sicknesses.

Also, whenever we go to see them they greet us with, "We didn't know you were coming." I wonder how many other "lonesome" parents there are around? If so, maybe there's a good reason their children don't visit them more often.

Signed: CAUSE AND EFFECT

Dear Cause,

There are plenty around, and I hear from dozens of them. Your signature was most appropriate. Whenever you get an "effect" like the ones described in your letter there's got to be a "cause". Thanks for writing.



CAUSE: Incorrect positioning of valve

EFFECT: Potential injury

WHAT'S ON

AUSTRALIAN CENTRE FOR GEOMECHANICS

AN INTRODUCTION TO SOIL MECHANICS

21-23 FEBRUARY, 1996

Venue: Lecture Theatre 1,
University of WA
Civil Engineering Building,
Nedlands

Designed to help bridge the gap between soil mechanics principles and their application to practical solutions such as the management of tailings structures.

For expressions of interest, please contact: **Christine Neskudla**
Tel:(09) 380 3300 Fax:(09) 380 1130

MINE RESIDUE MANAGEMENT (MINE MANAGER AND CONSULTANT LEVEL)

11-12 APRIL, 1996

Venue: Theatrette, 9th Floor, MineralHouse
Department of Minerals and Energy
100 Plain Street
East Perth

The program will involve a series of six case studies on specific projects, covering the basic issues of site selection, hydrogeology, dam design, material behaviour, instrumentation and monitoring, operational strategies and decommission for each project.

MINING AND RESOURCE CONTRACTORS' SAFETY TRAINING ASSOCIATION

Register your interest in becoming a licenced provider of the Marcsta General Safety Induction Course.

The General Safety Induction Course developed by the Mining and Resource Contractors' Safety Training Association and Kim Sweet of the South East Metropolitan College of TAFE will be ready for delivery in January, 1996.

The purpose of the 8 hour generic induction package is to eliminate the need for the multiple general induction process on minesites in Australia, which will allow on site induction providers to concentrate on site specific induction.

For further information and nomination forms contact Bob Halse Tel: (09) 316 1255

STAFF CHANGES

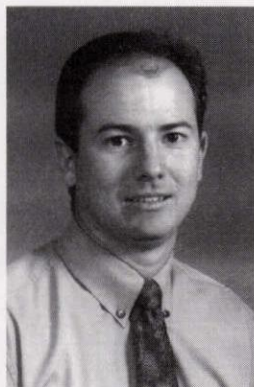
Good luck to **John Robinson** and **Chris Kirwin** who have resigned from the Kalgoorlie office.

Best wishes to **Don Macpherson** who has retired from the Department. Don initially headed the Drilling Section and later the Exploration Safety and Drilling Branch. Welcome to **Graham Spalding** who has joined the Environmental and Rehabilitation Section in Perth.

Tania Narducci is back from maternity leave to job share in the Finance and Purchasing position with **Karen Buxton**.

Les Watts (Perth Inspectorate) and **Brett Boneham** (Kalgoorlie Inspectorate) have been appointed Machinery Inspectors.

The Kalgoorlie Inspectorate has two new District Mining Engineers recruited from South Africa, **Peter Cowley** and **Martin Spibey**.



Graham Spalding



Don Macpherson addresses machinery inspectors at a drill rig course prior to retiring in October.



Les Watts



Martin Spibey



Peter Cowley



Brett Boneham

INCIDENT ALERT

THE INCIDENT

An exploration driller was found caught between the drill rod and the mast of a diamond drill rig. Prior to the accident he was seen in a crouched position near the rotating drill rod apparently observing the return pulley and / or pull-down mechanism to monitor the penetration rate. It was stated that he was not wearing any loose clothing. He sustained fatal head and internal injuries.

CAUSES

1. The driller was close to the rotating drill rod without any barrier between him and the hazard (the rotating shaft).
2. The driller was sitting near the edge of a temporary work platform on which he could slip or trip. This platform was next to the mast and rod.

3. The normal operating position of the driller was between 50 and 100 cm from the unguarded drill rod.

PREVENTATIVE ACTION

1. A minimum safe distance between the operator and any moving part, including a rotating drill rod, should be maintained.
2. The drill rod and other moving parts should be guarded or other effective hazard barriers should be in place.
3. The work area around the rotating drill rod should be designed, constructed and maintained to avoid trip / slip hazards.

COMMENT

Although not thought to be a cause of this accident, drillers should be reminded of the need to wear tight fitting clothing whilst working on drill rigs.



The drill rod and other moving parts should be guarded.

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