

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. ■■