

## HAZARDS ASSOCIATED WITH DEHYDRATION

In his finding following a recently completed inquest, the State Coroner indicated his concern that adequate information regarding the effects of dehydration be communicated to the mining and exploration industry in Western Australia. Details of the fatality, which was the subject of the inquest, may be found in Significant Incident Report No.95, dated 28 August 1998.

Commenting on matters relating to safety in the case, the Coroner said,

*“This tragic death of this young man has highlighted the fact that the centre and north of Western Australia can be extremely dangerous. Heat-exposure is a potential hazard for all occupants of that region and is particularly dangerous for visitors to the region”.*

One of the factors noted by the Coroner, as having an effect on the occurrence of the fatality was the underestimation by all concerned of the potential seriousness of vomiting by the deceased. In this case, such sickness, which in a different environment might not have presented serious problems, was a major factor in the dehydration of the deceased employee and, in turn, led to heat stress, collapse and subsequent death.

When the air temperature is above skin temperature (around 36°C) evaporation of sweat is the main mechanism by which the body loses heat to regulate its temperature. The body uses its own water reserves to generate sweat and maintain its temperature within safe limits. In this context, it is of fundamental importance to ensure that both the consumption **and** retention of water is sufficient to maintain this important body function.

Employees should be alerted to the fact that vomiting and/or diarrhoea, as well as sweating can deplete body fluids leading to dehydration. This is particularly important as persons sweating naturally tend to want to drink fluids, while those suffering vomiting or diarrhoea may not be so inclined to replenish their fluid reserves, particularly where vomiting follows closely after drinking.

In hot conditions, regular or sustained vomiting should be treated as a potentially dangerous health condition by supervisors. Any person who is exhibiting such symptoms should not be allowed to go unaccompanied into potentially hazardous or isolated areas. No person should be allowed to work or travel (especially alone) without access to an adequate supply of drinking water.

In addition, supervisors of workers in adverse weather conditions should be trained to recognise the symptoms of heat stress/heat exhaustion and heat stroke, (hyperthermia), and know how to treat and deal with it. Particular care should be exercised in the supervision of unacclimatised or inexperienced employees and, if necessary, they should be instructed to cease work and escorted to medical assistance, even if they are inclined to object or claim that they are fit to continue work.

The very real and serious hazards associated with environmental heat and its effects and consequences demonstrate the need for employers and principal employers to ensure that all employees are properly trained and have the necessary skills to survive in the harsh environments commonly experienced in some parts of this State. It is well known that death from dehydration can take place very quickly under certain circumstances and conditions. Prevention strategies are eminently practicable, being well known and relatively cheap and easy to implement. All employers in both the production mining and exploration arms of the industry have statutory obligations in this regard.

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