



## USE OF REMOTELY CONTROLLED MOBILE PLANT IN UNDERGROUND MINES

On 3 May 1998, the operator of a remotely controlled LHD died after being caught between the bucket of the machine and the sidewall of the excavation where he was working.

On 8 January 1998, another operator was found dead in similar circumstances by her shiftboss.

From these and previous similar incidents, it is possible that in some underground mining operations some specific hazards in relation to the use of remotely controlled mobile plant may not be receiving the attention they warrant.

The managers of all underground mines are therefore requested to suspend operations involving the use of remotely controlled machines, particularly LHDs, until they have satisfied themselves of the following:

- That the control system used in remote control operations is of high integrity and cannot develop faults which prevent the system from responding correctly to the operator's commands.
- That the control system will not respond to extraneous signals (eg from in-mine radio communications or other sources) in an unplanned or unexpected fashion.
- That the system of work used for remotely controlled operation of mobile plant is properly documented and enforced and that operators are properly trained in its use.

And, possibly most importantly:

- That the system of work used *allows* the operator to work, *at all times*, from a safe position, where there is no chance that inadvertent contact may be made with the machine.

It may be that a system of work determined by the employer or the manager, which is well documented and theoretically safe, is not practicable from the point of view of the operator due to the physical constraints of the job (eg the need to stand in close proximity to the machine in a drawpoint to observe the loading of the bucket). If this is the case, the system will simply not be used or followed on the job, because it is not practicable to do so.

The only way to ensure that the system *actually in use* is safe, is to observe it in operation and fully discuss the limitations and difficulties inherent in the system with the employees who must use it. Only then can a practicable and enforceable system be developed. In the absence of such consultation, managers may find themselves open to criticism, prosecution or other regulatory action if it transpires that the documented system is not the same as that in use at the mine.

In the longer term, careful consideration must be given to the use of development and stoping layouts which do not require the use of remotely controlled machines. Where their use may be a necessity, the use of tele-remote operating systems which remove the operator completely from the machine should be examined. Such operating systems also allow the restriction of access by other personnel to the area where remotely controlled machines are operating by lockable gates or other positive means.