



FATAL METHANE GAS EXPLOSION – SOUTH AFRICA

INCIDENT

On Friday 30 July 1999 a methane gas explosion at the Mponeng Mine near Carletonville, (some 60km from Johannesburg – SOUTH AFRICA), killed 19 employees.

The mine is a deep gold mine and methane was released from rock strata adjacent to the gold reef. No detailed report is yet available.

COULD IT HAPPEN HERE?

Release of hydrocarbon gases, (including methane), is experienced in some underground gold and base metal mines in Western Australia, although it is not common-place.

Methane has been released in some mines where exploration drill holes intersect meta-sediments, even though the gas has not been found during mine development. The gas may be under considerable pressure.

In some cases the release of gas is transient, however it may persist for extended periods.

PRECAUTIONS TO IDENTIFY THE HAZARD AND CONTROL RISK

- Carry out a geological appraisal to determine if strata to be intersected by development, stoping or drilling may release hydrocarbons;
- Prepare to deal with high-pressure hazards in exploration holes by drilling using a blowout preventer, (B.O.P.).
- Test for gases when development or drill holes intersect suspect ground;
- Ensure that sufficient ventilation is maintained in any suspect areas to dilute gases to a safe level and remove them to an exhaust airway;
- Where gas emission is verified and is persistent, monitoring systems with appropriate alarms should be installed and a risk management program implemented which may include:
 - regular testing of workplaces under the direction of the ventilation officer;
 - sealing the exposed strata or drill hole;
 - draining off gases to exhaust airways;
 - closure and sealing of the problem area;
 - pressurising the area to contain gases in the strata;
 - implementing specific emergency response procedures.

It should be noted that a variety of gases may be released from rock strata in underground mines, which may be toxic, asphyxiant or explosible, and some have both toxic and explosible properties. (Refer to regulation 9.29).

All underground employees must be made fully aware of the hazards, what to look for and report, and be trained in necessary remedial measures, including use of self-rescuers and specified emergency procedures.

(Refer to Regulation 10.12).

This hazard was highlighted previously in Safety Bulletin 27, July 1997.

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30 August 1999