



**DEPARTMENT OF MINES  
WESTERN AUSTRALIA**

**SIGNIFICANT INCIDENT REPORT NO. 20**

**DRILLING RIG FIRE**

**INCIDENT**

Two men sustained burns from a 'fireball' developed from the diesel engine on a drill rig.

**CAUSE**

A flexible hose in the engine oil cooling circuit failed at the connection to the heat exchanger (which formed part of the engine radiator system) and oil was sprayed into the cooling fan.

The oil became atomised and was sprayed as a cloud in and around the engine compartment.

The oil mist so formed was ignited by contact with hot engine components (most likely the exhaust driven turbo charger), and generated a fireball which enveloped the unit, extending a metre or two beyond it.

The injured men were working in close proximity to the rig.

**COMMENT AND REMEDIAL ACTION**

Particular attention should be paid to the configuration of hoses and pipes containing flammable liquids under pressure on internal combustion engines.

The routing and protection of hoses and lines must be designed to avoid or minimise the effect of any leakage or component failure. Measures include re-routing and enclosing or screening off, and protection from impact, vibration and abrasion.

Hot components such as the exhaust system, and in particular exhaust turbo blowers, should be screened off, as far as possible, from any potential source of spray of inflammable material.

Layouts allowing spray or leakage into the radiator cooling fan should be avoided at all costs to prevent events such as the one described above.

All components in the reticulation system must be designed, installed and maintained to a very high standard and improvisation and substitution of lower standard componentry must be absolutely prohibited.

All persons working with diesel engines must be made aware of the operating hazards which may arise and be instructed in precautions.

J M Torlach  
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**SAFETY AWARENESS SAVES LIVES**