



Fire on diesel electric truck

Significant incident report no. 8 | 27 August 1999 | Version 1

Mine type

Coal mine – surface

Incident

A 1982 diesel electric truck burst into flames while undergoing dynamic horsepower testing and adjustment. The truck was being driven down a ramp fully laden with a tradesman strapped into a body harness on the front deck of the truck performing adjustment.

After the fire was noticed the truck was brought to rest and two attempts were made to stop the engine using the key switch in the cab and an emergency stop switch at ground level.

An attempt was made to activate the fire suppression system which did not work.

The fire was extinguished using mobile fire fighting equipment but re-ignited after supplies of water and foam were exhausted at the incident site. The fire was eventually put out almost four hours after it started. No injuries were sustained, the truck has been written off.

Equipment

Diesel-electric off highway vehicles – haul trucks

Hazard

Fire on mobile equipment

Cause

A fuel hose fitting failure is suspected. Fuel being sprayed onto an engine turbo charger or exhaust manifold and subsequent ignition is the most probable cause of the fire. This could not be established conclusively due to the extensive damage to the machine. Important incident factors include:



- The fire suppression system fitted to the truck had discharged on the Hard Stand seven days earlier and had not been recharged. It had been noted as a defect by maintenance personnel but not acted upon. Pre-start inspections on the truck included fire extinguishers but not the fire suppression system.
- The stop systems installed on the truck were not fail safe. It is suspected that fire had destroyed wiring making them inoperable. The diesel engine continued to run after the fire started and probably only stopped after the fuel pump vee belt burnt through.
- No barriers or guards were installed on the truck to prevent fuel spraying onto hot equipment in the event of fuel line or fitting failure.
- Routine truck maintenance and servicing did not include regular inspection of fuel lines and fittings or the fire suppression system, or life cycle replacement of fuel lines and fittings.

Comments and recommendations

Designers/manufacturers/suppliers and owners/operators of plant on mines need to be aware of the potentially catastrophic consequences of such a fire and ensure they comply with their statutory duties with respect to such plant. This includes identification of hazards, assessment of associated risks and the elimination and effective control of those risks.

In this case the identification and repair of defective equipment (fuel fitting) and/or the installation of barriers or guards to prevent fuel spraying onto potential ignition sources, could have prevented the fire from occurring.

The timely rectification of defective equipment (fire suppression system and water cart hose reels), provision of fail safe emergency stops, and available fire pumps and hydrants could have mitigated the effects of the fire.

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Issued by the Queensland Department of Mines and Energy