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Mineral Mines & Quarries Inspectorate | Alert | No.388 V 1 | 09 March 2021

Fire on RC drill rig from compressed air system

What happened?

On 3 February 2021, a serious accident occurred while a worker was making adjustments to the compressed air delivery system on a UDR 1000 RC drill rig. The drill rig was engulfed in fire causing serious burns to the workers face, arm, chest and back. Fortunately the worker's eyes were protected from the fire by safety glasses.

How did it happen?

While the investigation is still ongoing, the findings of the investigation to date indicate that:

- The screw compressor air receiver was over-pressurised, causing a pressure relief valve to operate and detaching the fluid return hose on the wet side of the air receiver/sump.
- The fluid return hose fitting was located between the air receiver and the compressor engine, in close proximity to hot engine components.
- the release of compressed air and oil from the air receiver created a flammable atmosphere which was ignited by the hot engine exhaust.

Key issues

- OEM operation and servicing manuals were not used or available on site.
- Plant was operated in way that created an unacceptable level of risk.
- Plant controls did not bring the plant to a safe state when the plant was operated outside of its design parameters.
- Instrumentation did not enable adequate monitoring of the plant's operation and condition.

Recommendations

The Site Senior Executive must ensure that:

- high pressure air systems for drill rigs are inspected, operated and maintained by competent persons in accordance with OEM recommendations;
- high pressure air system monitoring and protection devices, including temperature and pressure sensors and gauges, are verified for correct operation and adequately maintained; and
- compressed air receiver fittings and hoses are maintained to withstand foreseeable system over-pressure events.

Investigations are ongoing and further information may be published as it becomes available. The information in this publication is what is known at the time of writing.

We issue Safety Notices to draw attention to the occurrence of a serious incident, raise awareness of risks, and prompt assessment of your existing controls.

References and further information

[Mining and Quarrying Safety and Health Regulation 2017](#)

(<https://www.legislation.qld.gov.au/view/html/inforce/current/sl-2017-0166>) sections 101, 102, 106 & 109

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Safety: This information is a guide only and is issued to promote safety through experience. It is not to be taken as a statement of law and must not be construed to waive or modify any legal obligation.

All information on this page (Fire on RC drill rig from compressed air system - <https://www.rshq.qld.gov.au/safety-notice/mines/fire-on-rc-drill-rig-from-compressed-air-system>) is correct as of time of printing (11 Mar 2021 10:24 am).