

High pressure water jet injection injury

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What happened?

A worker conducting a pre-start check on a truck-mounted high pressure (28,000 psi) water jet blaster sustained a lower abdominal injury when the water jet blaster hose ruptured near the gun (photo 1) piercing the protective shroud on the hose (photo 2) and striking the worker. The worker was attended to by paramedics before being transferred to hospital for treatment.

Comments

The hazard in this case was high pressure water jet. The direct cause of this accident was the failure of the hose close to the gun, combined with a subsequent failure of the protective shroud designed to protect a worker in case of such an event. Other contributing causes included:

- The deteriorated condition of the hose and safety shroud was not identified - it was not specified in the pre-start checks and the protective shroud could not be easily removed.
- Due to no clear instructions on the correct storage of the hoses, operators followed poor storage practices, putting unnecessary strain around the failure point of the hose during storage.
- High pressure water jet activity was not considered a high risk activity and did not receive the focus it required.
- There was no system for recording the purchase, installation, removal, disposal dates and service life of high pressure water jet activity components to ensure serviceability.

Non-contributory issues identified included:

- the pressure gauge not being calibrated and reading incorrectly,
- electrics on the water blaster in poor condition, and
- limited checks conducted on other safety relief systems.

Recommendations

- If high pressure water jet equipment is used on-site check the integrity of all hoses and safety relief systems. Also check that the hose and shroud specifications meet the required duty.
- Check that risks associated with high pressure water jet activities at the mine have been identified.
- Check that appropriate maintenance systems and training are in place for high pressure water jet operators and equipment.

Further guidance can be found in AS/NZS 4233.1:2013 High pressure water jetting systems - Safe operation and maintenance.



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