

SAFETY ALERT

Fluid injection from high pressure water cleaning

INCIDENT

On 3 February 2014 an operator at a coal handling and preparation plant sustained a fluid injection to the forearm while using a high pressure water cleaner.

CIRCUMSTANCES

An operator was attempting to clean build-up off a screen using a high pressure water cleaner. The operator was working in a restricted and cramped area when he tripped and dropped the lance (jetting gun). The jetting gun failed to automatically shut off. This allowed high pressure water to hit the operator on the forearm. The operator was transported to medical aid where his injury was identified as a fluid injection.



Injury to worker's forearm (left) and the cramped working conditions (right).

INVESTIGATION

The investigation identified:

1. The working area was restricted and cramped.
2. The high pressure water cleaning equipment was not fitted with an emergency stop or emergency shutdown function.
3. The automatic shut-off function (hold on to activate) on the jetting gun failed to operate due to possible contamination from -
 - a. Supply water being unfiltered.
 - b. Quick release couplings on the jetting gun and flexible hose were not capped during storage.
4. No safety observer was present.
5. The working area was not barricaded.
6. The operator was not wearing the correct personal protection equipment (PPE) appropriate to the degree of risk.

RECOMMENDATIONS

1. Where any high pressure water cleaning (jetting) activities are intended to be carried out on a mine site, consideration should be given to the following to assist in the identification of hazards and implementation of appropriate risk control measures -
 - a. Guide for managing risks from high pressure water jetting, December 2013, Safe Work Australia
 - b. AS/NZS 4233.1:2013 High pressure water jetting systems Part 1: Safe operation and maintenance
 - c. AS/NZS 4233.2:2013 High pressure water jetting systems Part 2: Construction and performance
2. High pressure water jetting equipment should be -
 - a. Defect free, fit for purpose and fitted with all recognised safeguards.
 - b. Subject to pre-use and periodic equipment inspections to ensure it remains in a condition that is safe to use.
 - c. Identified if energy output is Class A or Class B equipment, see AS/NZS 4223.1:2013.
3. Any area in close proximity to high pressure water jetting should be barricaded to prevent inadvertent interaction of high pressure fluid equipment and people.
4. All operators and assistants of high pressure water jetting systems should be trained in the safe use of the equipment by competent people in accordance with AS 4233.1:2013.
 - a. For Class B equipment training should also be to the nationally accredited scheme, see skill sets: MSASS00003 - *High pressure water jetting operator*, and MSASS00002 - *High pressure water jetting assistant*.

FURTHER INFORMATION

- *Class A System*: The output capability of the system is between 800 bar litres/minute and 5600 bar litres/minute.
- *Class B System*: The output capability of the system exceeds 5600 bar litres/minute
- Training skill sets for Class B, see www.training.gov.au
 - MSASS00002 - High pressure water jetting assistant
 - MSAPMWJ201A Using high pressure jetting equipment
 - MSAPMPER200C Work in accordance with an issued permit
 - MSAPOHS200A Work safely
 - MSPAOHS110A Follow emergency response procedures
 - MSASS00003 - High pressure water jetting operator
 - MSAPMWJ301A Using high pressure jetting equipment
 - MSAPMPER200C Work in accordance with an issued permit
 - MSAPOHS200A Work safely
 - MSPAOHS110A Follow emergency response procedures
 - MEM09002B Interpret technical drawings

NOTE: Please ensure all relevant people in your organisation receive a copy of this safety alert, and are informed of its content and recommendations. This safety alert should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's notice board.

Signed



Rob Regan
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MINE SAFETY OPERATIONS BRANCH
NSW TRADE & INVESTMENT

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