Significant Incident Report No. 268

Subject: Near miss when accumulator components are ejected from a haul truck

Date: 21 September 2018

Summary of incident

In May 2018, workers were exposed to potentially serious or life threatening injuries when disassembling a haul truck's hydraulic accumulator.

The truck's accumulators had been depressurised during the day shift and a fitter was required to remove the pistons and replace the seals. The night shift fitter referred to the site-specific procedure for the task, but it deviated from the original equipment manufacturer's (OEM's) procedure and the particular configuration the fitter was working on was not covered.

Upon realising that the procedure did not cover the configuration, the fitter sought advice from other workers, including the shift supervisor, who was not available. He received conflicting advice. He was not advised to stop the task.

The fitter re-installed the accumulator's cap and applied a controlled use of compressed air to lift the pistons, but could not get all the pistons to move. He then tried removing the accumulator's cap, but it would not release. The fitter used high tensile bolts in the cap to secure it and a pry bar to distance himself from the accumulator. The cap and piston ejected suddenly, narrowly missing him and hitting the raised tray of the truck, before landing near another worker several metres away.

Direct causes

The correct procedure for disassembling the accumulator configuration was not followed, resulting in an uncontrolled release of energy.

Contributory causes

Inadequate training and supervision

- The fitter was new to the task. He had insufficient knowledge, training or experience to perform the work assigned to him.
- He was not supervised while undertaking the task.

Inadequate procedure

- The site-specific procedure deviated from the OEM's.
- The site-specifc procedure did not cover all the variations of accumulator configurations, and the configuration the fitter was working on was not covered by the procedure.

Inadequate safe systems of work

- Work planning and scheduling failed to apply good risk management practices, including skills identification and the need for supervision.
- A comprehensive risk assessment was not carried out for the task (e.g. job hazard analysis, JHA) and the potential for exposure to hazardous energy was not identified.
- The site's change management process did not address the hazards and risks introduced when deviating from the OEM procedure.
- Co-workers did not exercise duty of care and intervene to stop the fitter undertaking the task.

Actions required

This incident highlights the need to ensure pressure vessels, such as accumulators, are handled and managed appropriately. The following actions are recommended.

- Confirm workers are appropriately trained and assessed as competent for the required tasks.
- Provide adequate supervision.
- Maintenance manuals provided by OEMs should be available and accessible. Site procedures should follow OEM procedures, or establish a safer system of work.
- Check that work planning and scheduling apply good risk managment practices, and include competency and supervision requirements and the correct technical information for the task.
- Develop, implement and maintain management of change processes as part of the site's safe system of work.
- Encourage workers to stop work and seek assistance from a competent person when they are not sure about how to proceed with a task. The contact details for supervisors or other competent person(s) should be readily available and communicated to workers.
- Remind workers of the duty of care to themselves and others. Workers must intervene, stop unsafe work and report it where it is identified.

Further information

- Department of Mines, Industry Regulation and Safety

  www.dmp.wa.gov.au/Documents/Safety/MSH_SIR_208.pdf

  Significant Incident Report No. 208 *Bystander struck by component ejected from accumulator*

  www.dmp.wa.gov.au/Documents/Safety/MSH_SIR_169.pdf

  Significant Incident Report No. 169 *Suspension component ejected under high pressure during maintenance - fatal accident*

  www.dmp.wa.gov.au/Documents/Safety/MSH_G_IsolationofHazardousEnergies.pdf

  Isolation of hazardous energies associated with plant in Western Australian mining operations guideline

This Significant Incident Report was approved for release by the State Mining Engineer on 21 September 2018