



Worker injured by ammonia during work near refrigeration unit

WorkSafe investigated an incident where a worker was exposed to high pressure ammonia refrigerant while working next to a live refrigeration unit. The worker was working from an elevating work platform (EWP) to install a partition wall in a large cool-room. The EWP was in close proximity to a chiller unit that was operating while the work was being conducted. The EWP knocked a valve on the chiller unit, releasing high pressure ammonia refrigerant. The worker was sprayed in the face with ammonia and inhaled ammonia, causing serious lung inflammation and burns to the respiratory tract requiring treatment in an intensive care unit. The incident had the potential to cause fatal injuries. The incident also resulted in failure of the refrigeration system and the loss of a large amount of high-value food.

Contributing factors

- The workers (contractors) did not receive any information, instruction or training regarding the hazards of the chiller unit.
- Hazards of working in close proximity to a live chiller unit containing high pressure ammonia were not adequately identified.
- A thorough risk assessment was not conducted.
- The chiller unit and associated pipes were not labelled to identify the presence of ammonia or any other hazards.
- The chiller unit remained operational while the work was carried out.
- Workers were required to conduct their work under very tight space restrictions despite their requests to be provided with more work space.
- The person at the workplace who would normally provide the contractors' induction was on leave and no alternative arrangement was implemented.

Managing hazards and risks

- Identify the hazards and assess the risks
 - Prior to commencing any work, identify the hazards, assess the risks and implement practicable control measures.
 - Involve competent persons who have training and experience relevant to the issue, including technical specialists, supervisors, workers and safety and health representatives.
- Refrigeration units should be de-energised and safely drained of hazardous refrigerants (including ammonia) before any work commences that may result in release of the refrigerant.
- If any work is to be carried out near live plant, identify the hazards posed by the live plant and ensure that safe systems of work are employed that adequately control the hazards prior to commencing work.
- Ensure workers are provided with sufficient space to carry out their tasks safely.

Regional Offices

- Ensure all workers, including contractors, receive adequate information, instruction and training prior to commencing work. Ensure the training covers site-specific hazards, control measures and any policies and procedures relevant to the work they will be carrying out.
- Ensure refrigeration systems that are charged with hazardous refrigerants including ammonia are adequately labelled to identify the hazards presented by the refrigerant.
- Establish site specific policies and procedures for managing safety systems associated with contract workers, and ensure they are adhered to at all times.
- Ensure contingency measures are in place so that critical safety and health tasks are carried out when key personnel are away from the workplace.

Further information

- WorkSafe prosecution summary, [Charge PE56872/2017](#)
- Mines Safety Significant Incident Report [SIR 228 Seriously injured when sprayed by anhydrous ammonia after failure of flexible rubber hose](#)
- [When is a dangerous goods licence required?](#)

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