



Mines Safety Significant Incident Report No. 166

Fall from height in a process vessel – fatal accident

Summary of incident

In 2009 an employee sustained fatal injuries when he fell at least 25 metres inside a process vessel at height and struck the ground.

The deceased was one of three team members using high pressure water cleaning equipment to clean scale from the vessel. The vessel comprises two separate but adjoining chambers. Access to these chambers is provided at various levels by manholes about 750 mm in diameter. Two 250-mm diameter pipes connect the top and bottom chambers, and provide a means of clearing scale from the top chamber during the cleaning process.

Immediately prior to the accident, the crew was focused on cleaning the top chamber of the vessel. Some adjustments were required for the equipment being used in the cleaning process, and the deceased left the top chamber platform area to get a tool to assist in changing the high pressure cleaning equipment. The other two employees noticed his absence and went looking for him. He was found on the ground below the vessel.

Probable causes

It appears that the deceased had fallen into the lower chamber of the process vessel and then to the ground via a discharge chute. Contributory factors are listed below.

- The vessel was more than 25 metres above the ground.
- The manholes in the side of the vessel were 750 mm in diameter.
- All the manholes were open.
- No barriers, fences or guard rails restricted access to the manholes.
- A fall from height hazard was not identified, assessed or controlled.
- Fall arrest or restraint equipment was not being used.
- Work was occurring towards the end of nightshift.

Action required

This incident demonstrates the hazard posed to employees where:

- they are required to work in the vicinity of large open manholes or there is a need to view the interior of the vessel via the manholes; and
- there is a potential to fall from height associated with the manholes.

Regulation 4.4(1) of the Mines Safety and Inspection Regulations 1995 states:

The manager of, and each employer at, a mine must ensure that adequate handrails, guards or fences are provided on all steps, stairs, elevated walkways and platforms, and on any other elevated workplace where there is a risk of injury to employees from falling.

Page 11 of the *National Code of Practice for the Prevention of Falls in General Construction* (2008) states that high-risk construction work includes work at height where there is a risk that a person could fall 2 metres or more. Hence, the phrase “fall from height” can generally be taken to mean a fall of 2 metres or more. In some cases, a fall from height of less than 2 metres can also pose a serious hazard to an employee.

The term “manhole” includes a specifically designed manhole or any other opening to a process vessel or any other volume or space not normally designated as a workplace.

To avoid a recurrence of this type of incident, managers and employers must ensure safe work practices are in place for employees working or travelling in the vicinity of open manholes that expose employees to a potential fall from height. Safe work practices include:

- placing suitable and sufficient guards, barricades or barriers across any manholes to restrict uninhibited employee access during that phase of the task where such access is unnecessary;
- wearing appropriate industrial fall-arrest equipment attached to a suitable anchorage point (see Australian Standard AS/NZS 1891 Series for more details);
- placing signs warning of the hazard close to any manholes; and
- marking out a zone of “no approach” or “no go” near any manholes.

A handwritten signature in black ink, appearing to read 'S. Ridge'.

Simon Ridge

STATE MINING ENGINEER

16 December 2010