



Significant Incident Report No. 235

Subject: Scaffolder falls from height in a process vessel at a refinery - fatal accident

Date: 18 December 2015

Summary of incident

Note: The Department of Mines and Petroleum's investigation is ongoing. The information contained in this significant incident report is based on materials received, knowledge and understanding at the time of writing.

On 25 November 2015, a scaffolder died after falling into a process vessel at a refinery.

A bank of six digesters at the refinery had been off-line for maintenance and refurbishment work since July 2015. All pipework had been disconnected and scaffolding installed in August for refurbishment work inside the digesters. When the refurbishment work was almost complete, scaffolders began dismantling the scaffolding. Scaffolds had been removed from three digesters in the days before the fatal accident.

On the day of the incident, a five-man scaffolding team had established a ladder at the bottom entry of a digester that still contained scaffold. The scaffolder had gone up a series of stairways over three levels, with another team member, to the top level of the digester bank to enter through the top manway of the digester being worked on. However, he inadvertently entered a manway into an adjacent digester, from which the scaffold had already been removed, and fell about 12 metres.

Note: The top deck of the scaffold in the digester being worked on was about 1.5 metres below the manway. There was no platform or temporary stair to allow safe footing when alighting onto the scaffold platform. All the scaffolders were wearing fall arrest harnesses, which they would connect to a safe anchor point once on the platform.



Top level of the digester bank showing disconnected pipework

Direct causes

- There was no device or guard on the open manway to prevent inadvertent access to the digester from which scaffolding had been removed.



Left: Manway into a digester with mechanical guard fitted. Right: Manway entry for the digester without scaffolding (tape placed by emergency response team).

Contributory causes

- A digester has two manways. The company procedure required a mechanical guard to be fitted on each manway when the doors were opened for maintenance to proceed, but did not address how guards were to be removed and replaced during and after the work. On the day of the incident, not all guards were in place.
- The company procedure for scaffolding did not address how scaffolds were to be constructed in process vessels and how to access them.
- There was confusing terminology in the company procedures regarding confined spaces.
- There was a lack of appropriate signage, and digester entry points were not identified or differentiated with a number or name.

Actions required

Falls from height remain one of the three main hazards leading to fatalities and serious injuries in the mining industry. Mineral process plants can be large and involve work on multiple levels in and around vessels and buildings, with the potential to expose workers to serious fall hazards.

It is critical that mine operators conduct detailed risk assessments of areas or tasks where workers might be exposed to fall hazards and take preventative measures. Mine operators, employers and workers should ensure that safe work procedures are available, followed and enforced.

Further information

- Resources Safety *Guidance about working at height*, www.dmp.wa.gov.au/Safety/Guidance-about-working-at-height-6262.aspx
- Resources Safety *Down to earth* hazard awareness videos, www.dmp.wa.gov.au/Safety/Hazard-awareness-videos-16435.aspx

This Significant Incident Report was approved for release by the State Mining Engineer on 18 December 2015