



## Petroleum Safety Significant Incident Report No. 01/2014

### Worker injured in fall from height during transfer from offshore platform to support vessel

#### Summary of incident

A worker fell about 4 metres after a handrail broke away from its support brackets. He had been standing on the lower access landing of the normally unmanned offshore platform, awaiting transfer from the platform to the support vessel.

The worker struck the starboard aft gunwale of the support vessel before falling into the sea. His personal flotation device (PFD) failed to inflate on contact with water.

The worker was retrieved by the crew of the support vessel and taken to the local medical facility for assessment. He was then flown to a city hospital for treatment of chest injuries and a fractured lower leg.

A general visual inspection (GVI) to assess the structural integrity of the platform top side had been completed about 12 months before the incident and had identified moderate corrosion of the handrails.



Photographs showing location of handrail attachments that failed (left) and fall path from landing (right)

#### Probable causes

##### Direct

- The handrail could not support the load imposed on it by an individual person. It failed at the point of attachment (weld) to the platform base, exposing the person to the hazard of falling from height.

##### Contributory

- Testing of the handrail had not been conducted in accordance with Australian Standard AS 1657:2013 *Fixed platforms, walkways, stairways and ladders – Design, construction and installation* therefore its true structural integrity was unknown.
- The PFD did not activate because a gas cylinder had not been screwed tightly into place following the last inspection of the device. The incorrect installation had not been detected.

## **Actions required**

In this incident, two control measures failed:

- The handrail was designed to prevent falls from height.
- The PFD was provided as protective equipment to support the wearer should they fall into the sea. Fortunately, the worker remained conscious otherwise the consequences could have been more serious.

The following actions are recommended.

### ***Steelwork***

Although steelwork may be fit for purpose when it is newly installed, the corrosive conditions in the offshore operating environment mean that a more rigorous approach should be adopted when assessing structural integrity. This includes:

- the identification of potential risks associated with failure
- an appropriate inspection, testing and maintenance regime.

Using GVIs alone is not a suitable method for assessing the integrity of steelwork and attachments because it does not allow the structural material thickness to be determined.

Monitoring strategies for structural integrity should include thickness measurements using:

- non-destructive examination (NDE) technologies
- fit-for-purpose testing (e.g. load testing).

The testing apparatus and a suitable process are not defined in AS 1657 and therefore a suitable process and procedure should be developed, verified and implemented.

### ***Personal flotation devices***

The failure of PFDs to inflate due to incorrect installation of CO<sub>2</sub> cylinders is common, and has been documented by PFD manufacturers as well as the Australian and US military.

The problem is readily addressed by using a simple checklist to inspect PFDs before they are issued to workers.

Ross Stidolph

DIRECTOR DANGEROUS GOODS AND PETROLEUM SAFETY

14 August 2014