



Safety Alert 13

Failure to Follow Safe Systems of Work (MoC & QA/QC)

What happened?

A recent incident involving the failure of a mud pump pulsation damper has highlighted the importance of ensuring that a safe system of work and appropriate management of change is applied to repair and refurbishment work.

The retention plate threads for a mud pump pulsation dampener bladder were found to have been damaged in the dampener body and the pulsation dampener was sent to shore for repair. Shortly after being returned to service the retention plate securing system failed to retain it against normal working pressure, and subsequently it was blown vertically under high pressure into the deck above. It caused minor deck damage, and released Synthetic Based Drilling Fluid in the pump room and on the main deck.

Fortunately, there were no injuries, although two personnel in the mud pump room at the time were traumatized. This incident had the potential to cause one or more fatalities either by a person being caught in the path of the retention plate as it was ejected under pressure or being under it as it fell after striking the deck above.

What went wrong?

Investigation found the engineering firm assigned to the task of repairing the dampener, verbally agreed to fit 12 x 1/12 UNF 12 TPI threaded studs and follow this with a pressure test to verify the unit was still fit for purpose. However, the engineering firm deviated from this work scope and fitted pressed parallel sleeves without consulting the operator. The dampener was also not pressure tested prior to being dispatched offshore. The operator's shore base personnel assumed certification for pressure testing went to the rig with the repaired equipment. The operator's rig personnel assumed their shore based support personnel had the certificates. The dampener was fitted without any verification it was fit for the intended service.

Both the engineering firm and the operator failed to ensure their respective processes addressing change management, design validation, verification and certification were appropriately followed and that all personnel with responsibility for the implementation of these processes had been appropriately trained in them.

Key Lessons:

- Appropriate requirements for QA/QC including validation, verification, testing and certification must be adequately documented when preparing to have plant and equipment repaired, refurbished or modified;
- Repaired or refurbished equipment must be appropriately inspected and, where necessary, tested and verified prior to bringing it back into service.

Summary of Key Regulator Requirements:

From Offshore Petroleum Act 2006, Schedule 3 clause 9

- Operators must take all reasonably practicable steps to ensure that:
 - plant and equipment are safe and without risk to health;
 - safe systems of work are effectively implemented and maintained;
 - information, instruction, training and supervision necessary for personnel to undertake their activities are provided;

From Offshore Petroleum Act 2006, Schedule 3 clause 13

- Suppliers of plant must take all reasonably practicable steps to
 - ensure it is in such a condition as to be, when properly used, safe and without risk to health, and;
 - carry out, or cause to be carried out, the research, testing and examination necessary to discover, and to eliminate or minimise, any risk to health or safety that may arise from the condition of the plant

Contact

For further information email alerts@nopsa.gov.au and quote Alert 13.