

CLIENT	GLOBAL OPERATOR
SECTOR	UPSTREAM OIL & GAS, UKCS
ASSET	FPSO
DATE	2018
DURATION	4-8 WEEKS
OBJECTIVE	TECHNICAL ASSURANCE ON SHIP SIDE VALVES
SERVICES	TECHNICAL CONSULTANCY



Ship side valve assurance — no operational disruption

PROJECT OVERVIEW

Imrandd was approached to conduct integrity assurance work on the ship side valves of an established installation in the North Sea. Assurance of valves guarding hull penetrations aboard an on-station asset is essential to ensure hull watertight integrity and is typically performed either via dive or ROV campaigns, or during dry-dock. Isolation of individual penetrations is made via bungs and cofferdams, prior to removal of inboard pipework and testing.

THE CHALLENGE

The client required an assurance solution that would satisfy regulatory requirements, but without availability of ROV or divers, this was not possible using conventional approaches within the required timeframes. There was an inherent risk during the work on board that in the event of a failure, the crew may not be able to satisfy full watertight integrity and ability to isolate pipework from the sea. The operator had concerns about the cost to the business, both potential failure and the costs to inspect and assure the conditions.

If it was not possible to complete in-situ, costly internal inspections, and dry-docking (along with the downtime and loss of revenue that went hand-in-hand with that) may have been the next steps.

THE SOLUTION

Imrandd presented an innovative means of evaluating valve integrity using a different testing methodology coupled with sound method of approval, that did not require valves to be isolated from the sea via conventional cofferdam or bung methods. This approach would enable immediate and ongoing ship side valve testing at no operational cost. In addition, this methodology required no equipment mobilisation and minimal vessel bed space.

An initial screening exercise identified the potential leakage rates posed by failure of all valves and identified in-line with regulatory requirements governing watertight integrity determined which valves required to have further testing carried out. These valves were then subject to practical testing offshore using novel testing approaches to verify their leak rates. The output of this exercise was a conclusive picture of the shipside valves' condition, the risks to and posed by each valve, and any mitigations required to be taken to further manage hull watertight integrity.

BENEFITS

- ▶ No operational disruption
- ▶ Satisfied regulatory requirements
- ▶ Correct risk prioritisation – ensuring that the operator could clearly see where and when inspection and remedial work was required based on risk posed by failure
- ▶ Overcame offshore constraints – the operator was able to implement a testing strategy that was possible given their offshore resourcing and equipment constraints
- ▶ Testing strategy was provided to client as the basis for ongoing testing and management of these valves to be carried out by client's own offshore personnel

CONCLUSION

Imrandd's diligent consultancy approach produced a novel, alternative approach to testing. This delivered the assurance sought by the client and the regulator in the time frame they had outlined without resorting to ROV or dive resources. Subsequently, the method is now approved by the HSE in the UK. The resultant successful testing campaign saved the operator time and budget, allowing them to confidently continue operating. Based on the results delivered by Imrandd and the subsequent testing programme, the client was able to make confident, justified, cost-effective decisions about the future of their asset.