

Video inspection – seawater barrier valves

Summary

Seadrill AS engaged NCA Norway AS to inspect inside the barrier valves onboard West Alpha during normal operations.

The reason for the inspections was a great concern for corrosion and or other damages in the 1st + 2nd barrier valves - during the classification campaign, several of the main barrier valves had been leaking whilst being tested. The inspection work was to find the reason for the leaks by observing each valve during opening and closing actions.

The inspection operation used NCA's new Inuktun PTZ cameras which have locks and guidance systems, and the state of the art Edge Inspection Report DVR System.

The inspection was performed during normal drilling operations and did not require any shutdown or stoppage.

Project Facts

SOW: Inspection of 19 seawater pipes w/barrier valves
Location: Northern North Sea
Vessel: West Alpha
Timing: July 2010
NCA Client: Seadrill AS

Scope of Work

- ✓ Inspection and examination of;
 - Strainers and the connected pipes and quantified findings of corrosion, damages, marine growth and wear
 - Barrier valves, the valve housings, sealing faces and shafts, and quantified findings of corrosion, damages, marine growth and wear
 - Proper valve opening and closing action
 - Pipes between the 1st + 2nd barrier valves and pipes between the 1st barrier valve and the ship side
 - Measured the valve leakage rate, and quantified findings of corrosion, damages, marine growth and wear.
- ✓ All inspection logs, video logs, photo logs and anomaly logs were delivered to Seadrill's Technical Manager onboard before NCA's inspection team left the rig.



Results

- ✓ 1st barrier valves
 - Dense and watertight
 - Little or nothing corrosion
 - No visible damage
 - Valves are missing guide rod for the valve plate, hence there are sideways movement of the valve plate. Valve plate does not always hit the valve seat correctly
- ✓ 2nd barrier valves
 - One valve is not dense and watertight
 - Little or nothing corrosion
 - No visible damage
 - All remotely operated valves have slow and uneven movement, most likely due to air in the hydraulic system



Challenges

- ✓ Tight schedule, only two weeks time frame
- ✓ Severely limited workspace
- ✓ Entrance of cameras into the pipe geometry against full seawater pressure

Achievements

- ✓ No LTIs or LTAs
- ✓ No requirement for change-out of barrier valves, saving the client for approx. 20M NOK
- ✓ No downtime required on the vessel
- ✓ Full project SOW executed within time and budget



Contact Persons

Seadrill

Kjell Tore Klungland, Operations Engineer

Email: kjell.tore.klungland@seadrill.com

Geir Bergli, Engineer

Email: geir.bergli@seadrill.com

NCA Norway

Jørgen Aargaard, Project Engineer

Email: jorgen.aargaard@nca-group.com

Ørjan Skjerahaug, Testing & Inspection Manager

Email: orjan.skjerahaug@nca-group.com



Norse Cutting & Abandonment AS
Hamrasletta 11 ~ 4056 Tananger, Norway
Tel: +47 51 64 91 00 ~ Fax: +47 51 64 91 20

Norse Cutting & Abandonment Inc.
5535 Brystone Drive ~ Houston, TX 77041 USA
Tel: +1 832 327 3640 ~ Fax: +1 832 327 3645

Norse Cutting & Abandonment Ltd.
Units 1-6 Howe Moss Drive ~ Kirkhill Estate
Dyce ~ Aberdeen AB21 OGL, Scotland
Tel: +44 (0) 1224 722555 ~ Fax: +44 (0) 1224 773123