

HOT BOLT REPLACEMENT

Workscope

Stork was contracted to carry out four bolt flange replacement on the Shell Nelson.

Stork were also asked to carry out a pre-job survey on the platform to determine a fixed scope of work.

Solution

A pre-job survey was recommended and agreed with the client. This allowed work to be planned efficiently in line with ongoing work scopes.

All flanges worked were under live working conditions allowing the HBC team to work on the flanges without the need to de-pressurize and purge any lines, removing the requirement for a costly shutdown.

Innovation

The Hot Bolt Clamps are a set of purpose designed hydraulic clamps that clamp a set of pressurized bolted flanges together so stud bolts can be safely removed.

The clamps have been specifically designed to allow the hot bolting of four bolt flanges (it is not limited to this number of bolts).

"I would like very much to have Stork technicians back on Nelson in the turn of the new year, as I think that the Hydraulic Clamp would be extremely useful and open up a lot of work that will allow us to complete our Nuts & Studs 2010 spreadsheet, it would certainly make my job a lot easier together with a significant reduction in the amount of man hours and input from operations as no breaking of containment would be required and very little in the way of plant would need to be isolated".

Michael Herdman
Engineering Team Leader
Shell, Nelson



Project information:

- Maximum working pressure – 689 bar
- Hand pump operation

Typical application:

- 4 bolt flanges
- Working from 150 # to 600 # rated joints
- Temperature range up to 90°C

Works in conjunction with:

- Controlled torque tightening
- Ultrasonic bolt length measurement

Results & benefits:

- Following on from the initial trip and successful bolt change out of 20 flanges, we went on to operate a 5 month programme whereby, using the StorkHBC System, in excess of 500 four bolt flanges were successfully hot bolted
- The full work scope was carried out in time and within the CTR budget
- Work scope completed safely and on time and with zero incidents
- Job completion and work pack completion reports given to the client within 7 days of demobilization of the men and equipment.