

OPERA worksheet template

Operational steps	Components	Operational threats and causes	Barriers	Consequences	Cr	Risk reducing actions and remarks
1. Transportation 1.1 Transport tubular to the base 1.2 Ship the tubular to the platform 1.3 Lift the tubular to the pipe deck						
2. Installation 2.1 Get tubing joints to the drill floor 2.1.1 Pick up a joint of tubing from pipe deck with the gantry crane 2.1.2 Place the tubing on the catwalk 2.1.3 Drive the catwalk up to the drill floor 2.1.4 Latch the elevator onto the tubing and pick up the joint						
2.2 Make-up tubing joints 2.2.1 Stab the joint of tubing 2.2.2 Make up the connection 2.2.3 Raise the slips 2.2.4 Push the control lines against the tubing 2.2.5 Install the clamp 2.2.6 RIH until the driller wants to stop 2.2.7 Set the slips 2.2.8 Unlatch the elevator 2.2.9 Pick up the next joint	Object - Tubing joints Interfaces - Tubing joints - Control lines - Clamps - Elevator - Slips - Driller - Iron roughneck - Drill floor	20. Reduced preload between tubing joints during make-up due to light galling Scenario: - Human errors during make-up Operational conditions: - Limited or wrong lubrication (human error) - High rotation speed (human error) Other influencing factors: - Mechanically weak oxide layer of super duplex Existing cause reducing actions: - Copper plated box - Lubrication of pin - Testing of galling resistance during QT - QC of tolerances - Protection during transportation - Installation procedures - Threads aligned before entrance	Detection (how): - Tubing testing Detection (when): - Initial testing or - Regular testing Existing cause reducing actions: - Safety margins - Secondary well barrier envelope	Worst case consequence: - Too low stresses in the sealing surface may cause gas leaking into the A-annulus during the operation when all operational loads are effective. The gas will mitigate through the packer fluid and accumulate at the top of the annulus. Worst case accidental event is tubing cracking (SSC) and burst in the annulus splash zone due to high level of H ₂ S in the gas leaking from the well to the A-annulus. A workover will be carried out to repair the well. Most probable consequence: - The leak rate is negligible and will not cause any pressure build-up in the A-annulus. - The leakage will be detected by the continuously monitored A-annulus and stopped by pressurizing the A-annulus.	A	<u>Suggested cause reducing actions:</u> - Inform the contractor about the important of correct lubrication, rpm and alignment to prevent light galling. - Use procedure from connector supplier - Select casing materials that resists any chemicals that for sure will be present in A-annulus - Select casing materials that resists any chemicals that accidentally may be present in A-annulus <u>Suggested consequence reducing actions:</u> - None <u>Remarks:</u> - None
2.3 Make-up premade assembly						
2.4 Make-up tubing hanger (interface)						
2.5 Run in hole (RIH)						