

Coil Tubing BOP Stack Separation

Description:

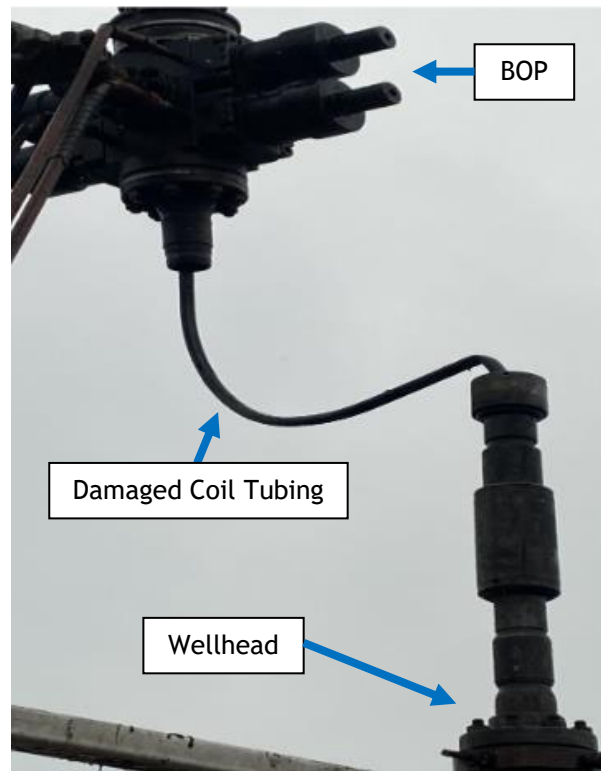
A coil tubing crew was running a fibre optic string into a production well. While placing the coil tubing into the well, the blowout preventor (BOP) separated from the wellhead. This resulted in damage to the coil tubing and loss of well control protection.

What Went Wrong:

- A connector that mated the BOP with the coil tubing riding valve was worn. In addition, because of its design using a ring, the connector was subject to a specific failure mode leading to separation.
- The crane hook holding the injector was excessively pulling up (i.e., too much hook weight) on the injector and stack, causing the injector and BOP to jump off the stack when the connection failed.

Actions Taken/Recommendations:

- The connection type that uses a ring was replaced with a new design that is not subject to the same failure mode.
- Load cells were installed on all cranes to monitor hook weight during all lifts and when holding equipment on wellheads. The procedure was modified accordingly to define allowable hook weights.
- The inspection procedure was updated to require visual inspection of all threaded and flanged connections in the stack prior to being placed on the wellhead.



View of separated stack and damaged coil tubing



View of connection that failed, including ring

Industry Resources

- [DACC IRP Volume #21 - Coiled Tubing Operations](#)
- [Coiled Tubing Well Servicing Blowout Prevention Course](#)
- [Process Safety: A Barrier Focused Approach](#)
- [Process Safety Posters](#)

Help industry by sharing lessons learned from an incident. [Submit your Safety Alert.](#)

SHARE AND COLLABORATE

Energy Safety Canada (ESC) works collaboratively with industry to share information aimed at helping companies of all sizes improve safe work performance.

DISCLAIMER

Use of this document or any information contained herein is at the user's sole risk. ESC makes no representations and assumes no liability. For further information on these restrictions, go to <http://www.energysafetycanada.com/legal.cfm>

COPYRIGHT/RIGHT TO REPRODUCE

Copyright for this document is held by Energy Safety Canada, 2021. All rights reserved. Energy Safety Canada encourages the copying, reproduction and distribution of this document to promote health and safety in the workplace, if Energy Safety Canada is acknowledged. However, no part of this publication may be copied, reproduced, or distributed for profit or other commercial enterprise, nor may any part be incorporated into any other publication, without written permission of Energy Safety Canada.