

Release of Stored Energy

Safety Alert

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Enform

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An Industry Product

This document was developed by industry for industry. Working collaboratively, Enform works with the submitting organization representative in developing these documents to improve the industry's hazard awareness. Canada's leading oil and gas industry trade associations support the use of shared information to help companies of all sizes improve performance.

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Description of Incident:

A service rig crew was in the process of unsetting a downhole tubing anchor. The rig manager, floorhand and consultant used two pipe wrenches to rotate the tubing string two to three times. The torque was held by the workers as the driller bounced the string with short, quick jerks in a downward and upward motion. An additional one to two rotations were introduced into the tubing string and the string of pipe was bounced again. The tubing string suddenly completed $\frac{3}{4}$ of a rotation causing the consultant to lose his grip on the 36" pipe wrench. The rotating pipe wrench struck the floorhand on the back of his hard hat causing him to lose balance and fall on the tubing slips, injuring his abdomen.



Re-enactment of workers torquing tubing with pipe wrenches



Re-enactment of worker being struck by wrench

What Caused It?

Release of stored energy in the tubing.

Contributing Factors:

- Workers did not review work procedures prior to conducting work on that day
- Workers did not follow the work procedures for unsetting a tubing anchor that specifies the use of hydraulic tongs, not pipe wrenches
- Not all workers were trained on the task of unsetting a tubing anchor
- Stored energy such as trapped torque must be identified during hazard assessment processes where controls should be discussed, communicated and implemented

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Corrective/Preventative Actions:

- Review and follow established procedures
- Ensure that all workers are trained on all procedures
- Be aware of the potential for stored energy, such as trapped torque in equipment and tools and include this in the hazard assessment
- Be willing to refuse unsafe work if, on reasonable and probable grounds, the worker believes there is imminent danger to the health or safety of any worker present at the work site

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