

Shoulder injury during intrusive work on pressurised hydraulic system

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A hydraulic technician sustained a left shoulder injury during maintenance on a known small leak on a main hydraulic pressure line.

What happened?

The system had been shut down and locally isolated; however, residual hydraulic oil remained within the pipework. During the task, the technician loosened the flange connection, which resulted in the release of hydraulic fluid. The technician attempted to control the escaping fluid while simultaneously repositioning the pipework within a restricted work area at shoulder height. Whilst applying force to align the pipe, resistance was encountered, followed by a sudden transfer of load through the shoulder, resulting in injury.

Why did it happen?

- **Work classification and planning gap:** The task was treated as routine maintenance. The Method Statement and Task Risk Assessment were not reviewed or applied, resulting in inadequate identification of hazards and failure to recognise the work as an “intrusive” activity on a pressurised system.
- **Residual energy was not controlled:** Although the system was isolated, residual hydraulic fluid remained within the line. Formal verification was not undertaken to confirm the system was fully drained and clear of pressure and residual fluid prior to breaking containment, with assumed system condition influencing decision-making.
- **Task execution and work conditions:** The task was undertaken by a single technician in a restricted workspace, requiring simultaneous control of pipework and fluid. No engineered support, supervision, or worksite controls were in place, increasing physical demand and reducing control at the point of work.

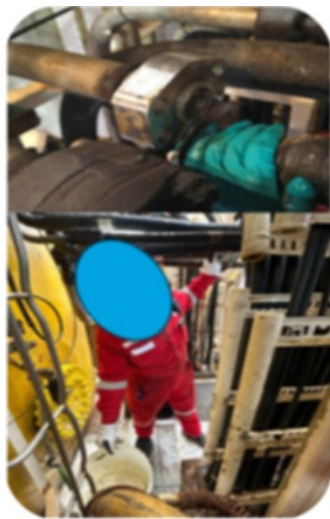
IOGP Life Saving Rules:



Energy isolation



Line of fire



What were the actions?

- Ensure all “intrusive” work involving breaking pressure containment is correctly classified and supported by task-specific planning, including use of a Permit To Work (PTW) and a full application of a “safe system of work” – routine doesn’t mean trivial or safe.
- Implement a formal verification step to confirm systems are clear of pressure and residual fluid BEFORE breaking them open, and ensure all isolations are requested, reviewed, and authorised through the Issuing Authority.
- Ensure adequate supervision, resourcing, and engineering controls are in place, including avoiding lone working for tasks involving residual fluids, manual handling, or intrusive maintenance.

Questions to ask

- Are tasks involving breaking pressure containment correctly classified and supported by task-specific planning?
- How do we check and verify that systems are clear of pressure and residual fluid before starting work?
- Are isolations formally requested, reviewed, and properly authorised, rather than carried out locally?
- Are tasks involving manual handling and residual fluids adequately resourced, supervised, and supported?
- Are our risk assessments detailed and specific to the actual task and conditions, or are they just “generic”?
- Task seen as routine: do we challenge work that is perceived as “routine” but introduces additional risk?

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