



Learning Event



OPERATING HYDRAULIC EQUIPMENT

HAZARD

Physical
(Moving or rotating parts)

**Person in
Line of Fire**

CONSEQUENCES

Actual: Fatality

WHAT ARE YOU DOING TO ADDRESS LINE OF FIRE RISK WHEN USING HYDRAULIC EQUIPMENT?

What Happened?

A worker sustained fatal injuries while working on a polyethylene fusion welding machine. In reaching out to adjust the lifting sling on the piece of pipe that was in the machine, the worker's body was placed between the hydraulic pipe lift and the tie bar. The control levers of the machine were accidentally activated during this time, leading to fatal injuries.

Why did it Happen?

Note: This incident happened more than 5 years ago

Context:

- Polyethylene fusion welding machines are used for work conducted on newly installed gathering pipelines and repairs to existing pipelines.
- The work being undertaken at the time of the incident was to join a low point drain to existing pipe work.
- In moving polyethylene pipe in and out of this machine, operators are required to use a sling to assist with lifting the pipe out from the machine.

Causes:

- The machine being used during the time of the incident was energised.
- The control levers on the machine were not isolated. The machine did not have a mechanism to isolate the hydraulic system which is the source of the energy to the control levers.
- The control levers on the machine were not shrouded to prevent accidental activation.
- The piece of pipe that was on the machine had a lifting sling around it.



Poly Welding Machine

What did they Learn?

Following this incident, all operations utilising fusion welding machines were halted, and an investigation was conducted to identify controls that could prevent this incident from reoccurring.

Operations with polyethylene fusion welding machine were re-commenced once the identified controls were implemented. The controls are still in place today and include:

Engineering Controls

- Guarding installed in crush zone
- Dual activation levers for hydraulic systems
- Isolation device for hydraulic systems

Administrative Controls

- Plant Risk Assessments reviewed to ensure risks of accidental activation, crush points are sufficiently captured
- Safe Work Method Statements updated to capture risk of potential crush points
- Safety leadership to allow everyone to lead safety conversations

IOGP Life-Saving Rules

- ✓ Understand and use safety critical equipment and procedures which apply to the task
- ✓ Obtain authorisation before disabling or overriding safety equipment; deviating from procedures
- ✓ Identify all energy sources
- ✓ Check there is zero energy and test for residual or stored energy
- ✓ Be positioned to avoid moving objects
- ✓ Establish and obey barriers
- ✓ Confirm that hazards are controlled and it is safe to start
- ✓ Stop and reassess if conditions change



Ask yourself or your Crew:

- How are you checking and assuring that the polyethylene fusion welding machines have guarding and other engineering controls in place?
- Do the risk assessments completed on plant/machinery address the risk of accidental activation?
- Does the training completed by workers using this machine cover crush point hazards?
- Are we reviewing advances in technology for new machinery to undertake fast fusion welding activities?

Further information:



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