

Line of Fire Potential – HEX Tube Pulling

Description

A CEDA crew was using a front-end loader with a sling attached to an improvised tube-pulling device to remove tubes from an exchanger. While pulling a tube, the tube slid forward and then became stuck. As force continued to be applied, the tube suddenly snapped, causing the end of the improvised device to recoil and strike the front-end loader, damaging the windshield. Luckily, no injuries occurred.

Findings

- Operator of loader had pieces of glass fly at their face. Safety eyewear protected their eyes.
- An engineered tool, the hydraulic tube puller, is available for this task and significantly lowers risk.

Preventative Actions

- CEDA procured a hydraulic tube puller immediately after the incident ([click here](#) to view demo video of the tool).

Learnings

- No job is so important that we sacrifice safety.
- Line of fire hazards can have serious consequences.



Life Saving Rule – Line of Fire

Line of Fire is one of *The 10 Life Saving Rules* that have been developed by Energy Safety Canada and the Safety Standards Council member companies and adopted into practice by CEDA.

Keep yourself and others out of the line of fire

- I position myself to avoid:
 - Moving Objects, Pressure Releases, Vehicles, Dropped Objects
- I establish and obey barriers and exclusion zones
- I take action to secure loose objects and report potential dropped objects

CEDA also requires positioning to avoid

- High pressure waterjets (always use mechanically mounted anti-withdrawal devices)
- Energy sources from hoses (i.e. vacuum, fluid, gases, etc.)



LINE OF FIRE

Serious Incident Safeguards are actions and steps that prevent life changing or life ending events. Examples of Serious Incident Safeguards relating to Line of Fire are:

- Workers are positioned outside the line of fire of potential.
- Exclusion zones are identified and controlled, and access to exclusion/ drop zones are controlled.
- Tools and materials are secured when at height, and openings to lower levels are covered.
- Always use approved mechanically mounted anti-withdrawal devices as outlined in CEDA's high pressure water blasting practice.
- Ensure energy sources from hoses are identified and controlled. Controls may include; using the correct hose, whip checks (hose restraints), grounding, and vacuum breakers.