

High Pressure Water Cleaning

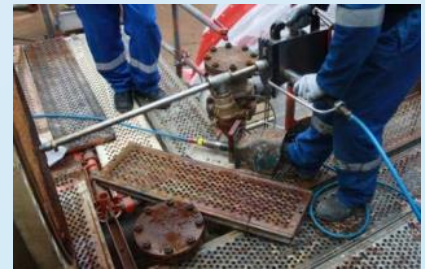
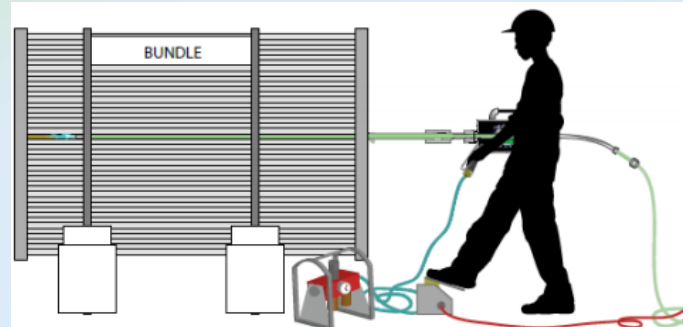
EPSC Learning Sheet , February 2019



EPSC

What Happened:

Heat exchanger bundles are cleaned in turnarounds using high pressure water of 1000 bar. A cleaner died after hit by a water beam



Aspects:

- The lower tubes could not be cleaned with the foot on the dead man switch. The Cleaner disabled the switch to be able to do the work. When losing his balance the nozzle came out of the bundle and hit the cleaner, that died from the injuries
- Consider ergonomic and tripping hazards of critical work in Job Safety Analyses and at work floor inspection (LMRA)
- A second person needs to observe the work permanently, and activate an emergency stop. He missed the incident; in practice it is hard to be in time in such a rare event.
- Automated HPW cleaning of heat exchangers is safer
- A culture to “get the job done” can result in an increased acceptance level to bypass safety systems

Never bypass a safety systems