

# Incident at pressure leak test

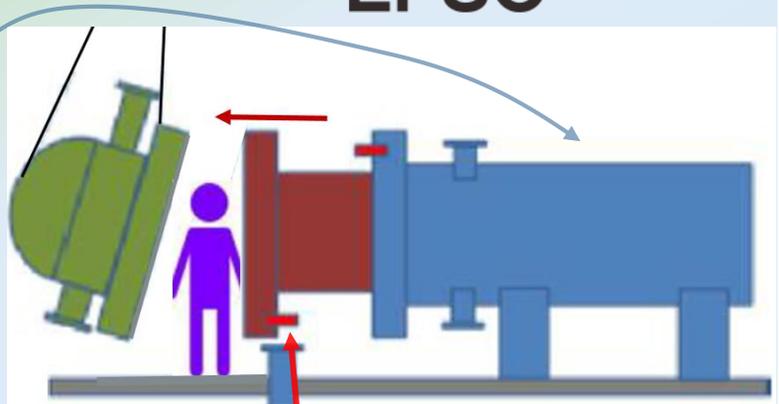
EPSC Learning Sheet , April 2019



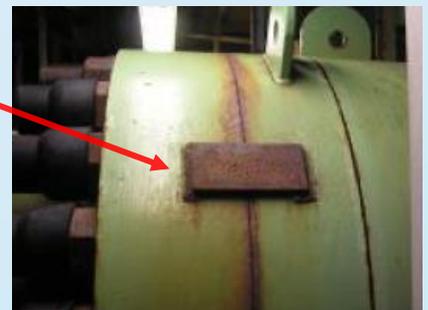
## EPSC

### What Happened:

In a turn around the head of a leaking heat exchanger was removed. 8 barg gas was placed on the body to find the leak. The tube bundle was pressed out of its house, killing two mechanics.



Clamp



### Aspects:

- When pressurizing the space between shell and tube-bundle for the leak test, it was not realized that with removed head, the bundle could come loose from the tube sheet
- The failed clamp, was only designed to keep the seal in place
- The approved permit to work, did not discover the hazards of reintroducing pressure during the production stop
- In the test protocol there was no remark to stop when a certain pressure was detected in the body (blue part in fig.)
- A gas was used in this pressured leak test; a liquid would have most likely avoided fatalities
- The mechanics were positioned in the line of fire

Validate equipment integrity at leak testing and assure a safe test protocol