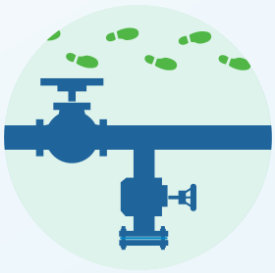
Fire in a Pipeline Trench

EPSC Learning Sheet February 2021

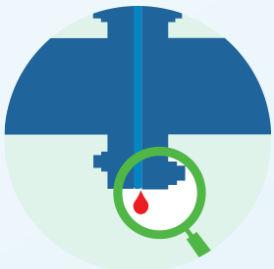
EPSC

What Happened:
To start-up a new isomerisation unit at a refinery, an existing pipeline was cleaned and drained. When Naphtha was pumped through that line, the drain plate was still open and over 1000 m3 spilled into a pipe trench. This started a fire with serious damages.

Relevant Process Safety Fundamentals



Walk the Line



Validate Leak Tightness

Aspects:

- Good checklists "isolation plans" should indicate all flanges and valves to be involved in a special operation.
- After opening an installation, a leak proof test is required before putting hazardous chemicals in that system.
- Before starting a transfer-pump apply "walk the line" principles, to validate the line-up. Also check that changes in level and transfer-flow do match well.
- Pipeline trench design can reduce consequences of a spill: compartment of the trench, gas detection, fire resistance of critical pipelines and good access to fire hydrants.

Validate the line-up at a transfer