

Lindsey Oil Refinery

DATE OF EVENT: 29 June 2010

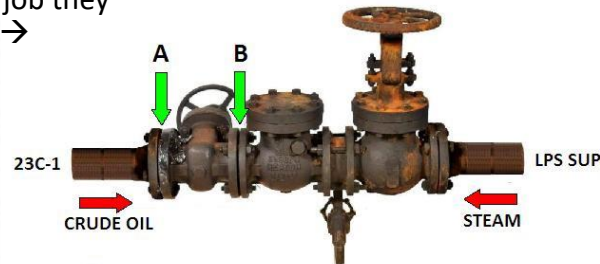
OUTCOME: Crude oil fire, 1 fatality

THE CIRCUMSTANCES:

- Start-up of distillation column following maintenance

WHAT HAPPENED:

- Shutdown work had been completed on a crude oil distillation column.
- A flange blind isolation had been removed to introduce a steam line to the column during the maintenance. This needed to be replaced before start-up.
- A change in the planned start-up process meant that the column was partially filled with hot crude oil (10-15 tonne at 264°C) prior to the work to insert the blind.
- A plant operator identified the flange to the work party but the isolation identification tags were not installed. When the work party returned to do the job they started working on flange A instead of B →
- The flange bolts were seized so were removed using a hacksaw. When the last bolt was cut, the pressure from the column above split the flange.
- The resulting release of crude oil ignited causing a large fire and killed one of the work party.



MAH Barriers

Safe Isolation and Reinstatement

- The work could have taken place with the distillation column empty.
- Flange identification tagging procedures were not being followed leading to incorrect identification.
- Assumptions were made by work party that the system did not contain hydrocarbon.
- Unsuitable method used to remove the bolts from the flange resulted in full flange separation.

7Cs Discussion Points

- Change Management** – Changes made at the time when the blind would be installed during start-up resulted in a significant increase in risk which was not managed. How do you ensure that changes in start-up processes don't increase the risk? What other barriers are in place and are they effective?
- Culture** – The flange tagging procedures were not being followed and the flange was split inappropriately. How do you know the correct piece of equipment has been identified and that it is isolated? What monitoring activities do you undertake to ensure procedures are being followed?

