

DuPont Chemical Release

DATE OF EVENT: 23rd Jan 2010

OUTCOME: 1 Fatality

THE CIRCUMSTANCES:

- The onshore chemical processing plant used phosgene, a highly toxic substance, to create pesticides.
- The phosgene liquid was delivered from 1 tonne cylinders into the process via PTFE lined flexible hoses.

WHAT HAPPENED:

- Phosgene problems were encountered, so operators began switching between the two phosgene cylinders.
- During the course of switching cylinders, one of the flexible hoses containing liquid phosgene was not purged with nitrogen.
- The liquid phosgene turned to gas and expanded as it heated to ambient temperature.
- The flexible hose burst, spraying a lethal dose of phosgene onto a passing operator.
- Despite medical care being provided, the operator died the day after the accident.

Photo showing
ruptured hose →



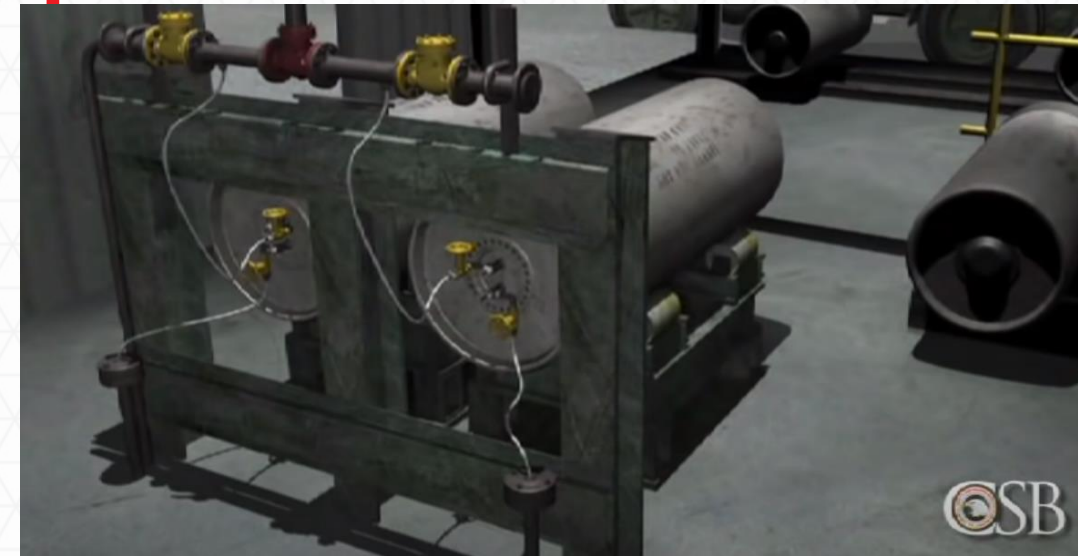
MAH Barriers

Maintenance

- PTFE-lined stainless-steel hoses are susceptible to failure when using phosgene. This was known several years before the incident.
- Standard operating procedure require replacement of hoses in phosgene service every 30 days. However, on the day of the incident the hoses had not been changed in over 7 months.
- The software used to manage plant maintenance had been modified and it no longer notified operators when to replace hoses.

7Cs Discussion Points

- **Change Management** – Changes in maintenance system was not fully assessed to ensure all routines were captured. How do you ensure that changes to your systems are controlled?
- **Complacency** – Although the phosgene hoses were previously changed out every 30 days, when the system changed and they weren't changed out, no-one questioned why. What do you have in place to enable personnel to raise maintenance concerns?



MAH AWARENESS
MINI ALERTS PACK

 **STEP CHANGE
IN SAFETY**