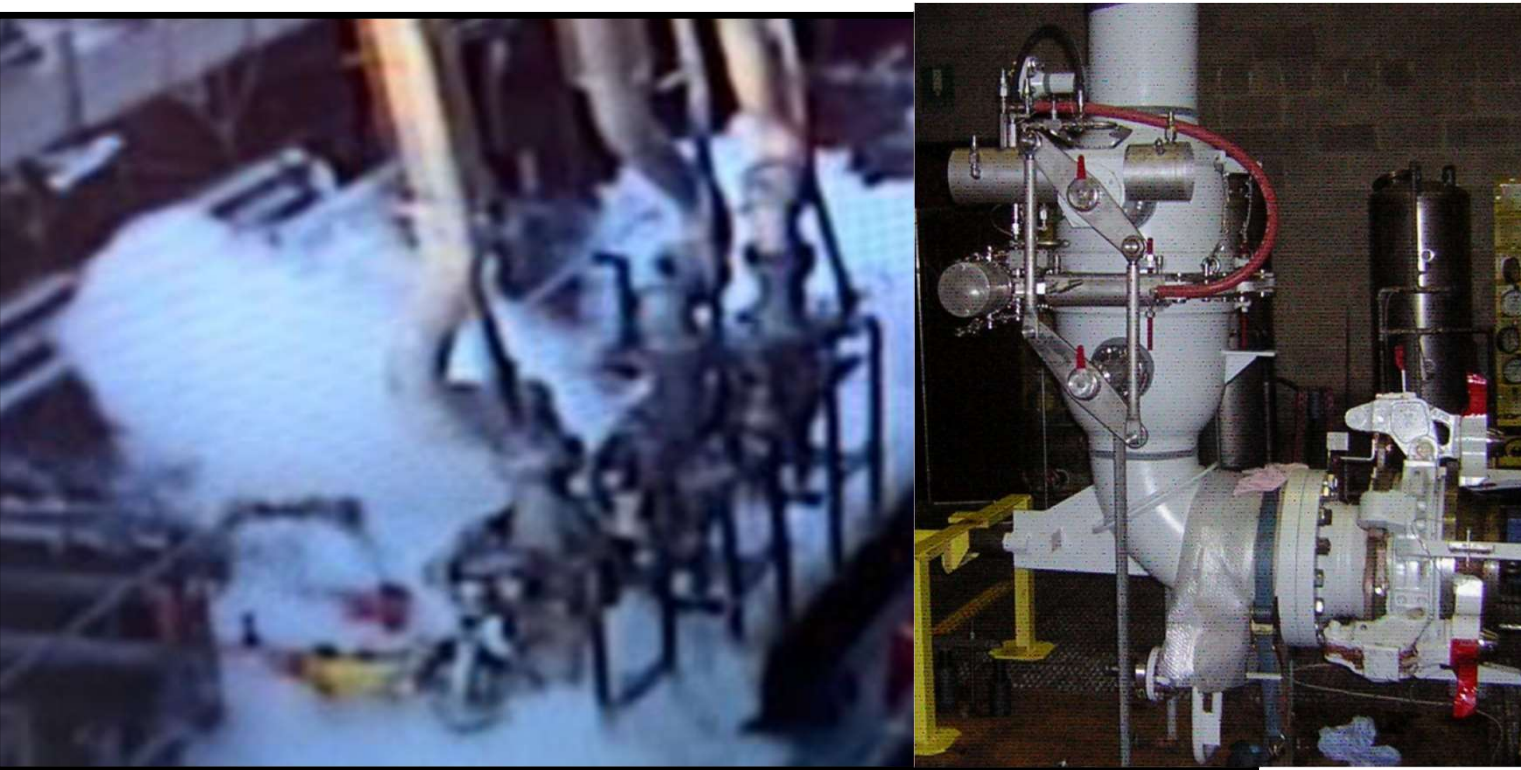




Loss of Containment from
Butane Liquid Loading Arm

Moment of Butane Release- during LPG loading



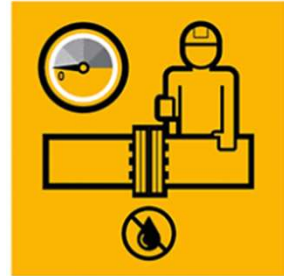
- During disconnection of the Butane liquid loading arms from the receiving marine vessel, a Butane loss of containment occurred from the loading arm coupling (QC/DC).
- Unexpected loss of containment (<50kg) of Butane
- Two Company personnel and two ship crew were in the immediate vicinity and were enveloped in hydrocarbon.
- No injuries occurred as a result of the loss of containment and subsequent exposure.

Root Causes

- **Procedure:** Ships Manifold Drain valve was closed by ship crew without authorization from Loading Master.
- **Management of Change:** The introduction of a hold point to allow shift change during vessel loading activity (area unattended for ≈ 1 hour).
- **Verification:** After handover of the task, the incoming crew did not doublecheck the status of the equipment prior to recommencing activity.

Take Away

- **“Routine Operation”** performed after more than 1000 offloadings (all products), can still turn into a major safety event. → full vigilance all the time
- **Actions:** Review and simplify relevant procedures. Revised hand over process. Design change to improve liquid arm drainage.



Maintain safe isolation



Apply procedures