



Learning Event



LOADING / UNLOADING (VESSEL)

HAZARD
Chemical
(flammable)

**Loss of
Containment**

CONSEQUENCES

Actual: No harm to persons
Potential: This could have caused multiple fatalities

WHAT ARE YOU DOING TO ENSURE VESSEL / SHORE INTERFACES ARE IN A SAFE STATE BEFORE CONNECTION / DISCONNECTION ACTIVITIES COMMENCE?

What Happened?

A loss of containment occurred from the loading arm quick connect/disconnect (QC/DC) coupling when disconnecting the Butane liquid loading arm from a receiving LPG vessel. Two personnel and two ship crew were in the immediate vicinity and were enveloped in a hydrocarbon vapour cloud. After removing themselves from the vapour cloud and regaining visibility of the loading arm controller, the Storage & Loading (S&L) Area Operator closed the QC/DC coupling using the handheld remote, stopping the leak.

Why did it Happen?

- **Procedure:** The ship's Manifold Drain valve was closed without authorisation from the Loading Master.
- **Verification:** Post handover of the task, the incoming Storing and Loading (S&L) Area Operator and Load Master did not complete any verification of the status of the equipment prior to recommencing the activity. The area had been unattended for about an hour.
- **Management of Change:** The introduction of informal loading hold points associated with crew handover pauses the critical activity of vessel loading and introduces opportunity for conditions to change during this high-risk activity. This practice was not proceduralised or risk assessed.

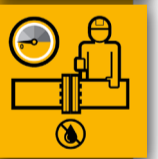


What did they Learn?

- Simplify procedures and improve readability so personnel clearly understand roles & responsibilities and all steps in the process, including verification.
- Improve handover process for S&L Operators to ensure it aligns with industry practice, and incorporate into relevant site procedure/s.

IOGP Process Safety Fundamentals

- ✓ We improve our understanding of process safety hazards at our location and our roles in controlling them.
- ✓ We are vigilant about the potential impacts of uncontrolled process safety hazards.
- ✓ We discuss process safety hazards before starting a task.
- ✓ We bring forward process safety hazards to be included in activity risk assessments.
- ✓ We use operating and maintenance procedures, even if we are familiar with the task.
- ✓ We pause before key steps and check readiness to progress.
- ✓ We stop, inform supervision and avoid workarounds if procedures are missing, unclear, unsafe, or cannot be followed.
- ✓ We check for residual pressure or process material before breaking containment.
- ✓ We monitor the integrity of isolations regularly and stop to reassess when change could affect an isolation integrity.
- ✓ We confirm leak-tightness before, during, and after reinstating equipment.
- ✓ We look for and speak up about change.
- ✓ We discuss changes and involve others to identify the need for management of change (MOC).
- ✓ We proactively look for indicators or signals that suggest future problems.
- ✓ We speak up about potential issues even if we are not sure they are important.



Ask yourself or your Crew:

Frontline teams

1. How do you positively confirm an isolation (no residual pressure or material) prior to breaking containment?
2. What could change the integrity of the isolation?
3. What are the known "workarounds" used in tasks you perform? What's the issue that necessitates a "workaround"? How can the procedure be updated (prior to executing the task) to reflect how work actually occurs?
4. What are the emergency responses and procedures that may apply if something unexpected occurs?

Support teams

1. When developing or reviewing procedures and guidance documents, how do you make sure it's simple for all end users to read and understand?
2. How do you make sure new or updated documents are communicated effectively and reach the people that need to use the document?

Further Information:



The Society of International Gas Tanker and Terminal Operators (SIGTTO) - LNG Marine Loading Arms and Manifold Draining, Purging and Disconnection Procedure



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