



# Learning Event



## OPERATING PROCESS EQUIPMENT

**HAZARD**  
Chemical  
(Explosive)

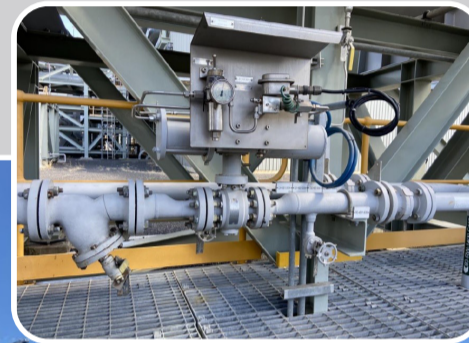
**Loss of Containment**

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

### WHAT ARE YOU DOING TO AVOID MISINTERPRETING ALARMS WHEN OPERATING PROCESS EQUIPMENT?

#### What Happened?

An inlet separator water boot level control valve failed to close at a Gas Processing Facility, causing both water and gas blow-by to the purceptor. The on-call Operator assumed the valve had failed closed. The Loss of Containment was identified by the Operator when they arrived on site the next morning. The blow-by lasted for approximately 12 hrs 40 mins. Discharge of methane was calculated to be approximately 2,300kg (Tier 2 release).



#### Why did it Happen?

**Water boot level control valve failed to close causing both water and gas blow-by to oily water separator.**

- There was internal corrosion to the valve actuator. Weather effect and age of the o-ring seal had led to the top plate seal of the actuator leaking water to actuator internals, causing corrosion.
- The valve had been in service for more than 8 years. Solids are entrained in the gas flow. These particulates are fine. Y strainers upstream of the valve are designed for removal of coarse particulates. Internal corrosion, coal fines and interburden found in the valve body, inhibiting operation.

#### Call out response not acted upon.

Feedback alarms were misinterpreted. The facility was not known for producing liquid in the separator boot. Due to the alarm sequence, the Operator determined that the valve must be stuck in the closed position.

#### What did they Learn?

Review alarms that have the potential for Loss of Containment. Answer back (valve has failed to close) alarms when it has latched.

Review 8 year rotatable overhaul for inlet separator control valves and valves on suction scrubbers.

#### 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 bring forward process safety hazards to be included in activity risk assessments.
- ✓ We discuss and use the approved operating limits for our location.
- ✓ We alert supervision if an alarm response action is unclear or the time to respond is inadequate.
- ✓ We pause and ask questions when signals and conditions are not as expected.
- ✓ We stop and alert supervision if the activity is not proceeding as expected.
- ✓ 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.
- ✓ We persistently explore the causes of changing indicators or unusual situations.



#### Ask yourself or your Crew:

- Do you operate process equipment? Are you familiar with alarms that may indicate a Loss of Containment? How recently have you re-familiarised yourself with the effectiveness of your critical control alarms? How do you respond to these alarms? Do you challenge your assumptions? Are you aware of your bias and know how to overcome it?
- Do you maintain gas processing equipment? Has the possible presence of fine particulates been considered in the design of your process equipment and maintenance schedules?

#### Further Information:



SCAN ME

Safer Together  
Process Safety Awareness  
Video: Maintain It



SCAN ME

Safer Together  
Process Safety Awareness  
Video: We all Have a Part to Play



SCAN ME

Safer Together  
Contain It

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