



Learning Event



MAINTAINING PROCESS EQUIPMENT

HAZARD
Chemical
(Corrosive)

**Loss of
Containment**

CONSEQUENCES

Actual: No harm to persons
Potential: This could have caused a fatality

WHAT ARE YOU DOING TO ENSURE SAFETY CRITICAL EQUIPMENT IS CORRECTLY INSTALLED AND TESTED PRIOR TO BEING RETURNED TO SERVICE DURING MAINTENANCE?

What Happened

A screw compressor was put into service with an incorrect acting blow down valve which would have resulted in it not operating as required under process upset conditions.

Why did it Happen?

An incorrect valve was fitted at service. The supplied valve had a fail closed operation. It should have had fail open. An incorrect valve was ordered because:

- The existing valve nameplate did not specify the fail state of the valve. The valve is capable of both fail open and fail close orientation depending on how the diaphragm is installed.
- Technical information found in the maintenance system did not state the fail state of the valve. This was not understood by the mechanical team.
- The description of the valve ordered in the maintenance system did not explicitly describe the fail state of the valve.
- The system for identifying equipment specifications relied on people. The technical data for existing legacy assets was originally manually uploaded in the maintenance system.

The valve was not tested prior to the compressor being put back into service.

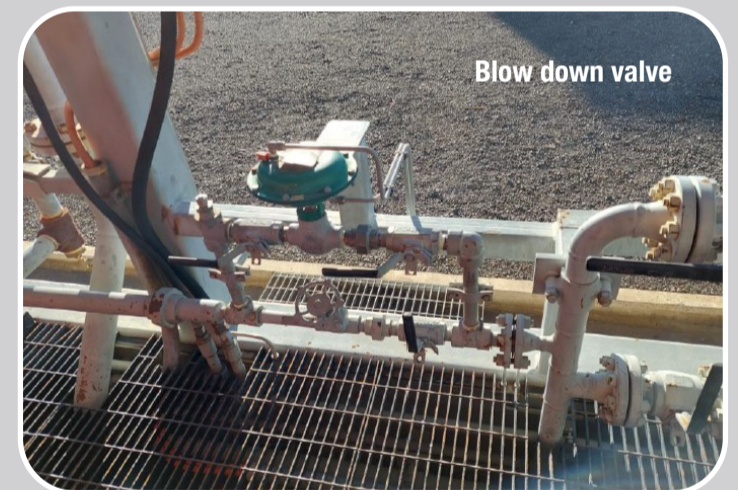
- The mechanical team were unsure of the need to test the valve. The Work Order did not provide information about the need to test the valve. Although the valve was identified as Safety Critical Equipment in the maintenance system, there was no other technical data available. The technical data for existing legacy assets was originally manually uploaded in the maintenance system.
- The Instrument Electrician Tech was not contactable prior to bringing the valve on line as they were on another job. The maintenance team was experiencing multiple work activities which prevented them doing one job at a time.

What did they Learn?

- Communicate to Operations teams to seek engineering support if not 100% sure of equipment required for a Work Order.
- Ensure correct valve descriptions are in the maintenance system.
- Change the P&ID to reflect the latest model number. (The technical details of the valve shown on the P&ID showed an obsolete model number and misleading valve description).
- Create a procedure to assist in ordering replacement equipment to minimise risk of incorrect equipment being purchased.
- Validate existing datasheets in legacy assets as accurate.
- Re-iterate to all work crews the need for Quality Assurance (QA) documentation to be completed prior to returning an asset to service. Emphasise the need to seek assistance from the Discipline Lead or Subject Matter Expert if unsure of the QA documentation required.
- Communicate to maintenance teams the need to stop the job and seek confirmation if new equipment being installed has a different part number and/or is physically different to the existing equipment being replaced.



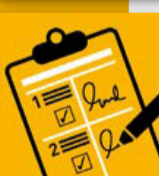
The compressor



Blow down valve

IOPG Process Safety Fundamentals

- ✓ We improve our understanding of process safety hazards at our location and our roles in controlling them.
- ✓ We discuss process safety hazards before starting a task.
- ✓ 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.



Ask yourself or your Crew:

- Are you involved in maintaining safety critical equipment? Do you complete Quality Assurance documentation prior to returning an asset to service? Do you seek assistance if you are unable to confirm data during a maintenance task?
- Do you stop the job and seek confirmation if new equipment being installed has a different part number and/or is physically different to the existing equipment being replaced?

Further Information:



SCAN ME

Safer Together - Maintain It video (Process Safety Awareness)



SCAN ME

Safer Together - We all have a part to play (Process Safety Awareness)



SCAN ME

Safer Together - Contain It (Major Accident Event Awareness Training)

Click here to send us your feedback



or scan the code

