Safety Alert

Main Inlet Valve (MIV) failure – broken actuator piston rod

What happened?

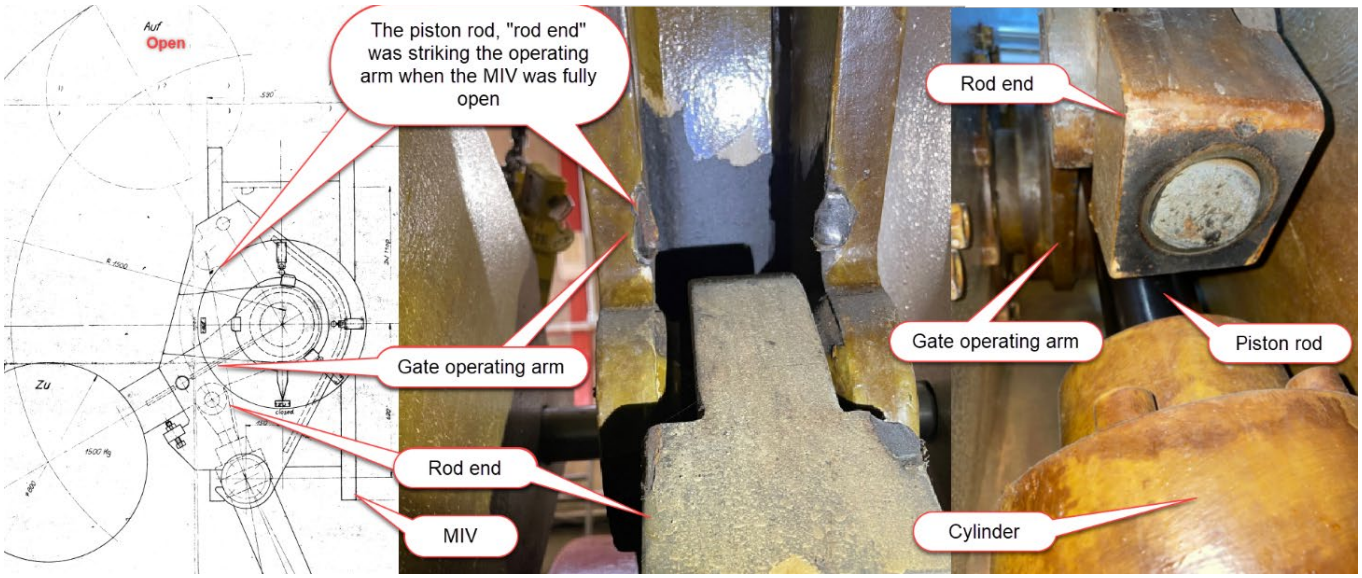
Paerau scheme was dewatered and being prepared for testing. The G2 MIV was being dry stroked prior to testing. While the MIV was being opened, the counterweight was observed to shudder violently.

The MIV actuation was inspected, and the piston rod was seen to have broken off where the rod end screws on.

Detailed inspection of both G1 & G2, showed that the rod end had been contacting the MIV operating arm on both units. The forces associated with this applied very high side-loading on to the piston rod. This resulted in cracking then gross failure of the piston rod.

This issue will have been present since the station was first commissioned.

In different circumstances, this could have led to a conveyance overpressure, potentially catastrophic.



What did we learn?

- This issue highlights the importance of thorough routine inspections of safety critical plant,

Bullet point lessons

- Ensure that there are Preventative Maintenance (PM's) checks in place for all safety-critical plant
- Ensure that inspections are thorough – if an operating mechanism is difficult to inspect, use tools to help carry out inspections, e.g., use a borescope
- Record inspections in a brief report and attach to completed PMs for future reference (comparison)
- Do not assume that there are no issues with a plant item, just because it has been in service for many years