Case Study: Gain immediate visibility into rupture disc failure using electronic smart switch

Industry
PETROLEUM REFINING

ONE SERIES
1XSWLL

CHALLENGE:

Customers use a rupture disc to prevent an overpressure condition from damaging equipment and infrastructure.

The problem faced is that when these disc(s) ruptured, the operators had no way of knowing the discs failed and when they needed to replace them. In some cases, even though the disc(s) were integrated with a simple switch indicating the rupture when it tripped, the switching function was not reliable. Thus, the customer needed a reliable way of knowing when the disc(s) ruptured so that corrective action could be taken quickly to minimize further loss of process material.
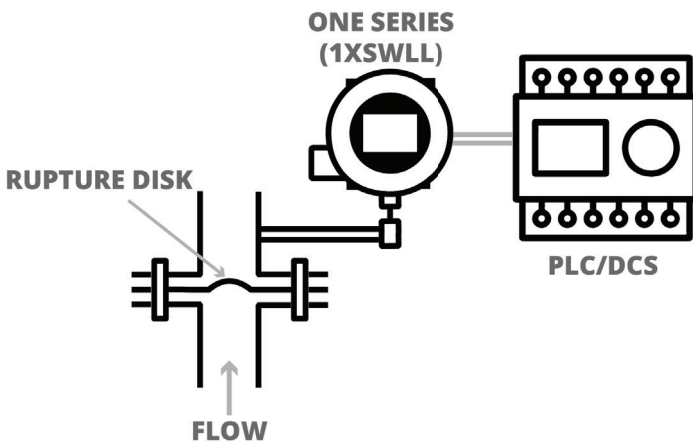
SOLUTION:

By installing the One Series smart electronic pressure switch (1XSWLL) right after the rupture disc(s), the operator was immediately notified when the One Series detected pressure changes downstream, indicating a leak or rupture of the disc(s). When this happened, the One Series tripped a local alarm sending a signal to the distributed control system (DCS) so maintenance could be scheduled to replace the failed disc(s). The One Series' smart diagnostics made it easy for operators to check on the 'device health status', so there were no surprises with sudden product fault codes.

With the One Series installed, the customer can now be **notified immediately** via the DCS that the rupture disc(s) have failed. From a maintenance standpoint, the operator has **visibility** on how frequent the discs fail and can take corrective action immediately. They will also be able **to track mean time between failure** and create a more robust maintenance program for the rupture discs. The self-checking diagnostics on the One Series ensures that the values reported by the device are accurate and will inform the operator if it is not. This **improved device reliability** gives the user peace-of-mind when it comes to pressure monitoring.

ONE SERIES (1XSWLL)

RUPTURE DISK

PLC/DCS

FLOW

Immediate notification on DCS

Better operator visivility with device diagnostics

Track mean time between failure

UE