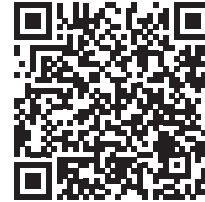




Case Study: Balancing Uptime and Safety in Paper Mills



ONE SERIES
FIELD SAFETY SYSTEM



Industry
PAPER

CHALLENGE:

A major European paper mill company wanted to upgrade their instrumentation to comply with the IEC 61511 standard - "Functional safety - Safety instrumented systems for the process industry sector". The user was looking for a pressure device that could perform the dual role of monitoring the steam distribution line used in the production of paper, while simultaneously controlling the pressure of the pilot compressed air of expensive control and block valves when a critical level is reached. The device had to be certified for use in a SIL environment as well as approved for use in an area classified as an explosion hazard according to ATEX, UL, IECEx.

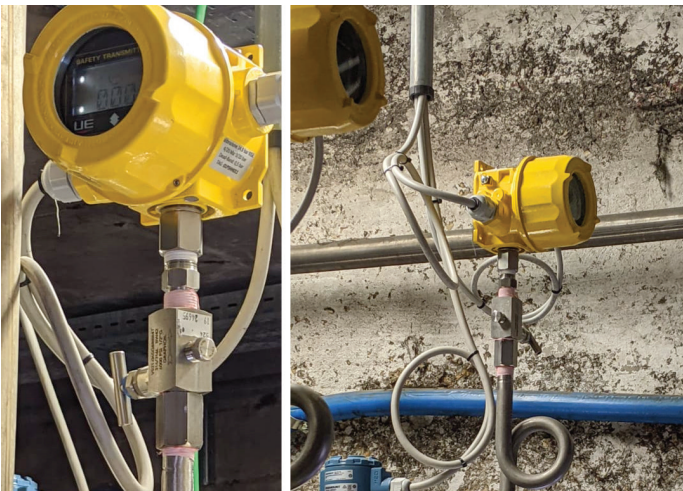
SOLUTION:

The customer decided to deploy United Electric Controls' Safety Transmitter (ranging from 1 bar to 20 bar). Setpoints were precisely set at 0.45bar and 14.8 bar with specific deadband values that satisfied the operational requirements. The Safety Transmitter was selected due to several reasons:

Precise control – Due to its electronic design, the customer was able to easily program the setpoint for the relay in the device down to the second decimal point. As a result, the customer was able to control the blocking of pilot pneumatic pressure to the valves with an actuation of less than 100 milliseconds, at a very specific setpoint.

Diagnostics - The instrument has advanced algorithms for self-diagnostics. Error codes are published locally on the device display to identify the causes of any its malfunctions. Additionally, there is a diagnostic output from the device that when connected to a PLC provides remote notification to the control room, informing there is a device issue. Local and remote notification of device issues helps the operator identify and troubleshoot the problem quickly.

Expanded device output – Besides the 4-20mA output and high capacity relay output (to shutdown a final element directly), the Safety Transmitter has additional logic outputs (e.g. relay output status) that can be employed in the voting of logic schemes to communicate warnings before activating a shutdown. The additional output has allowed the user to design a Safety Instrumented Function that has the ability to balance the need to provide a safe working environment while keeping the process running optimally.



More precise
control



Rapid
troubleshooting



Improved
operational uptime