GREEN ENERGY HUB

CASE STUDY



STEEPS OVERFLOW SOLUTION FOR A MULTINATIONAL MALTING COMPANY

BACKGROUND

Our client's brief was for Process Instrument Solutions to design and implement a system that would eliminate raw material overflows during its barley pre-steeping process. The process consists of barley grain and water being fed into a vessel, mixed and then pumped out to steep tanks.

CHALLENGE

The mixing process is continuous with barley and water being charged into the vessel at carefully controlled volumes. The hydrated barley is then pumped away to the next stage of the germination process. Due to the consistency of the hydrated barley, pumping of the product is a challenge as blockages can occur. A blockage at the pump outlet will result in an overflow of product as raw material is constantly being fed into the vessel. These overflows result in wasted raw material, production delays and effect the mix ratio within the vessel.

SOLUTION

Through the combination of a GEMÜ pneumatic butterfly valve, a Micronics doppler flow meter and Siemens Logo PLC & HMI the Process Instruments team was able to produce a solution that achieved the plant's desired outcome. Through measuring the flow of hydrated barley at the pump outlet while the process was running a clear indication of pumping efficiency was achieved. A touch input timer feature was incorporated into the HMI providing a simple method to adjust the time it takes from a blockage or pump failure being detected to the system closing the valve on the inlet preventing the feed of material. A resettable valve actuation count feature was added as well, providing the operator with a clear indication of how many times the valve has closed to prevent an overflow since the last reset.

EQUIPMENT SUPPLIED

- **Bürkert 2672 Butterfly Valve**
- **Micronics doppler flow meter**
- **Siemens Logo PLC & HMI**
- **GEMU electrical position indicator & mechanical switch unit**

RESULT

The Plant performance manager said: "Since we embarked on this project with Process Instrument Solutions to establish a new system at the plant we have seen noticeable improvements in the efficiency of eliminating the raw material overflows in our process. From the installation and calibration it has been a seamless project working with Process Instruments. The new overflow meter has given us a true view of the potential stoppages and downtime adding value to site and plant performance. With the data capture we have also been able to see and trend pump performance to plan adjustment/ replacement of key parts within the pump."

Unit 6/7, Parkway, Elm Farm Park,
Thurston, Bury St Edmunds,
Suffolk IP31 3TB

Tel: 01449 674986
Fax: 01449 833 007
Email: solutions@pi-team.co.uk

Connect with us
www.processinstrumentsolutions.co.uk