

CEMENTED AGGREGATE FILL PLANT VALVE SOLUTION

BC bulk handling valve extends the time between maintenance shutdowns and reduces maintenance costs

One of the biggest copper and uranium mine in the world relies on our BC bulk handling valve for its Cemented Aggregate Fill plant surge bins. The mine is made up of underground and surface operations and operates a fully integrated processing facility from ore to metal.

Sub-level open stoping has been the mining method of choice since operations started. Once the stopes are mined out they are backfilled with either unconsolidated rock fill or a mixture of aggregate and binder as Cemented Aggregate Fill (CAF).

Application

- Cemented aggregated fill plant bin outlet

Challenges

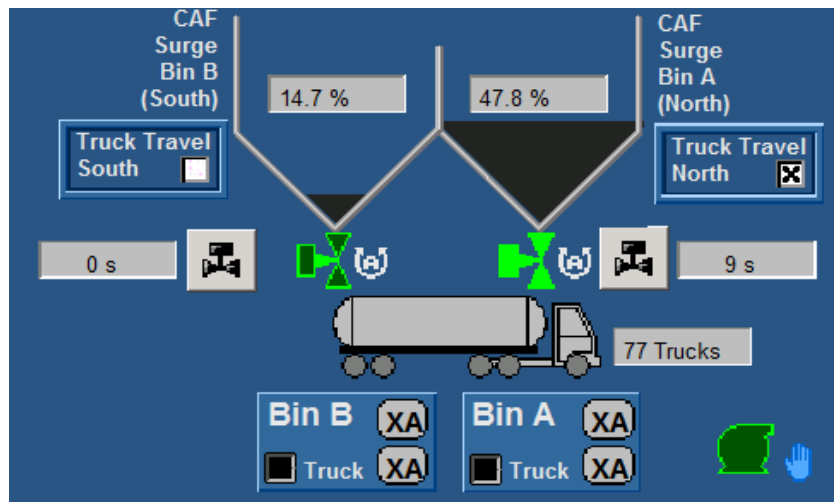
- Jam-prone application
- Extend valve life (>32 weeks)
- Very high opening/closing cycles
- Valve tightness/closure

Solution

- BC bulk handling square port valve

Result

- First valve lasted 41 weeks
- Following valves have lasted more than 48 weeks



CAF surge bin outlet valves needed to be replaced to extend time between maintenance shutdowns and reduce valve and maintenance costs by also extending valve life cycle.

ORBINOX, AVK Flow Control and Customer's engineering teams worked together to design and manufacture a special reliable valve solution.

The main purpose of the valve is to safely fill the truck underneath the bin every few minutes



FORMER BULK HANDLING SOLUTION

Process Conditions

Cement aggregate:

- Lime stone 50-60%
- Sand 20-25%
- Water 15%
- Cement 2-5%
- PH 5-7

Cycles: 6500 times/month

Bin volume 15 m³

Aggregate weight 30 to 35 tons

Aggregate density 2,2,4

ORBINOX Proposal

BC bulk handling knife gate valve

Size: DN 800

Double acting pneumatic cylinder

No jamming design

Cleaning system

Wear-resistant materials

Ultra-resistant stainless steel rollers



ORBINOX BULK HANDLING SOLUTION

Result

The first valve installed in 2018 lasted 41 weeks. Since then, 5 more bulk handling knife gate valves have been replaced by ORBINOX BC in the different surge bins.

During this time ORBINOX was working on improving valve efficiency and extending valve life. ORBINOX achieved this aim/goal by extending valve life to 48 weeks.