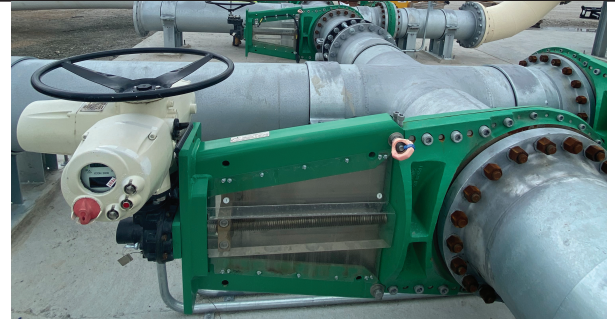


New severe service valve technology enables tailings relocation and mine life extension

RESULTS

- Installed 60+ manual and automated knife gate valves
- Slurry valves cycled up to 100 times per week with no failures after 12 months
- Enabled the relocation of 30 million cubic meters of tailings to a new storage facility
- Project allowed extension of mine life by 10+ years at current production rates



APPLICATION

Construction of a new tailings relocation system, in addition to modifications to the existing water management system for an open cut and underground coal mining site.

CUSTOMER

Major coal miner in Australia.

CHALLENGE

A major coal miner was looking to extend the life of their mine while maintaining their current production rates. To achieve this, the mine owner planned to open up new areas for mining. The challenge was that the most attractive areas for this extension included areas currently used as tailings storage facilities (TSF).

To achieve their goal, the team would need to relocate approximately 30 million cubic meters of tailings, the equivalent of 12,000 Olympic-sized swimming pools. The project would also require modifications to the existing water management system to ensure continued efficient reclamation and return of water to the mining operation.

The new relocation system was needed to be designed to handle the rigors of high volume and high solids content abrasive tailings slurry. This system design included valves that were required, in some applications, to cycle 70 to 100 times per week and provide zero leakage isolation in a system that would run 24 hours a day, 7 days a week.

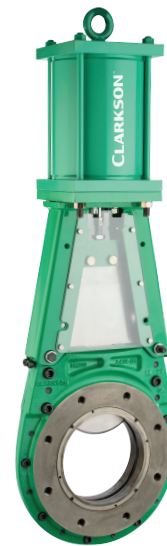
SOLUTION

Emerson was selected to supply the project with a variety of knife gate valves. Emerson experts analyzed the applications and selected solutions that would deliver reliable performance over an extended lifecycle, while optimizing for cost.

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“The valves are operated 70 to 100 times per week and have given us reliable zero leakage isolation during their time in service.”

Project Supervisor
Major Coal Miner



*Clarkson™ KS1
Severe Service Knife Gate Valve*

SOLUTION (Continued)

In total, more than 60 valves were supplied for the project. Emerson was able to deliver the complete package of both manual and automated valves by leveraging its extensive valve and actuator portfolio.

Working with a single valve partner also simplified the end-to-end supply process to ensure the valves were delivered in full and on time.

As a partner with deep mining application expertise, Emerson was able to identify the most challenging installations and deploy its latest innovation, the Clarkson™ KS1 Severe Service Knife Gate Valve. This ASME Class 150 rated valve is engineered to excel in challenging slurry applications such as high pressure tailings.

More than half of the valves supplied were Clarkson KS1's, installed to perform critical isolation duties in pump stations and related pipelines. This included 4 valves that were automated with the Biffi™ ICON3000 electric actuator, also from Emerson. These valves are operated up to 100 times per week and demand technology capable of reliable performance in high cycle, severe service slurry conditions.

As the manufacturer and expert valve partner, Emerson provided regular onsite presence for commissioning to support the successful completion of the tailing's relocation project. As a testament to Emerson's engineering and quality excellence, the Clarkson Knife Gate Valves continue to deliver zero leakage isolation, each and every cycle with no significant maintenance events or failures in the 12 months since commissioning.

RESOURCES

Clarkson Knife Gate Valve Product Portfolio

<https://www.emerson.com/en-us/automation/brands/clarkson>

Emerson's Tailings Pipeline and Spigot Solutions

<https://www.emerson.com/en-us/industries/automation/mining-minerals-metals/tailings-waste-management/tailings-pipeline-pump-spigot-isolation>

Emerson's Tailings Pump Station Solutions

<https://www.emerson.com/en-us/industries/automation/mining-minerals-metals/tailings-waste-management/tailings-pump-isolation>

Clarkson KS1 ASME Class 150 Severe Service Knife Gate Valve

<https://www.emerson.com/en-us/catalog/clarkson-sku-ks1>

Biffi ICON3000 Electric Actuator:

<https://biffi.it/en-us/biffi-products/biffi-electric-actuators/biffi-icon-3000>

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