BJMPumps[®]

<u>Case Study</u>

INDUSTRIAL

SOLUTIONS

FLOW

Adjusting Operations: Steel plant saves over \$80,000 by switching to KZE Series pumps

Overview

A Midwestern steel plant underwent reconstruction in 2012 as a result of a corporate merger. After the reconstruction, the plant had several scale pits in its operation. One of which holds just 25,000 gallons of water, yet has the highest concentration of scale. While changing sizes of the in-plant scale pits, the steel plant continued operating with its original 90 HP submersible scale pumps. These pumps were designed to operate on variable frequency drives (VFD) to provide constant pit level control with one pump operating and the second used as a back-up. During reconstruction, piping was changed, which decreased the system head. The original pumps failed four times in the first year following reconstruction, due to both abrasion damage and to running out of curve which led to cavitation.

Steel plant managers decided to source a more size appropriate submersible pump based on correct flow and head requirements, and the ability to process large volumes of high abrasive slurry water.

The original pumps failed four times in the first year due to both abrasion damage and cavitation.

PROBLEM

- High failure rate due to cavitation and abrasion
- Loss of productivity through flooding
- High repair and ownership costs



Solution

In collaboration with their contracted pump service provider, plant managers selected a BJM Pumps® KZE Series high-capacity, hard metal slurry pump. After confirming calculations, they chose a 75HP model with high capacity and extreme durability. The pump featured high chrome iron parts, including volute, impeller, and wear plate. A high chrome iron agitator keeps solids from settling at the bottom to prevent clogging. The semi-open impeller is capable of passing 1" solids, which would accommodate high concentrations of scale in the in-plant pits. The KZE Series pumps also feature Class H motor insulation with amperage (FLA) and temperature overload protection. Coupled with an early warning seal failure protection circuit, the plant could count on long pump and motor life. The plant's pump provider custom manufactured an adapter that would allow them to install the KZE pump onto the existing rail system and discharge elbow. Soon afterwards, they installed a second KZE pump, and purchased a third as an on-line spare. In the first two years of operation, they experienced zero pump failures. The plant operation saved a total of \$80,000 in maintenance costs, as well as greatly reduced energy usage from lower horsepower pumps.

"We are approaching two years since installing the first KZE pump, and we have not had a single mechanical failure. This pump is extremely robust and a tremendous value," remarks steel plant manager.



Features

- High capacity, hard metal slurry pump with agitator
- High chrome iron ware parts (volute, impeller, wear plate)
- High chrome iron agitator
- Semi-open impeller capable of passing 1" solids

Applications

- Mineral Processing
- **Steel Production**
- Drilling Mud or Slurry Transfer
- Sand and Gravel
- Lime Slurry

860-631-3618

Fly Ash

RESULTS

- 100% pump reliability with zero pump failures
- Massive savings in maintenance and cost of ownership
- Reduced energy cost with increase production



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