SUPERIOR FILTRATION

CASE STUDY

KLEERFLO: AUTOMATIC SELF-CLEANING FILTER

VULCAN MOATIZE COAL MINE – BLOCKED FLUIDISING NOZZLES

Client: Vulcan Moatize Coal Mine
Industry: Coal Mining and Processing
Region: Tete Province, Mozambique
Product: Kleerflo self-cleaning filter

Challenge

- Vulcan Moatize Coal Mine appointed DRA Global to design and manage the expansion project for the existing coal processing plant.
- One of the process units for the plant is the reflux classifier, which incorporates fluidising bed systems.
- Blocked fluidising nozzles are a common problem in fluidised bed systems and result in the substantial loss of production time and maintenance costs, while increasing the risk of unfiltered particles damaging downstream equipment - all of which lead to increased costs and to lower levels of production.
- As the water used at Vulcan Moatize is recycled it contains large suspended particles that block the fluidising nozzles. a superior filtration solution was required.

Application

Kleerflo self-cleaning filters were incorporated into the design of the expansion project.

Solution

- Kleerflo Filters are pressurised, automatic, self-cleaning filters installed in process lines to remove suspended solids from water.
- Factors taken under consideration:
  - Kleerflo's unique design has no rotating parts or close tolerance elements, very few moving parts and no electric motor, ensuring robust performance and proven reliability.
  - Kleerflo filters offer a continuous flow and a strong, positive backwash action that ensures thorough cleaning of the stainless-steel screens that never need to be replaced.
  - Completely automatic backwash.
  - Low maintenance with virtually no downtime.
  - Zero energy consumption.

Results

- With all the debris and suspended solids in the recycled water supply eliminated, there are no fluidised nozzle blockages, almost zero downtime and no damage to the downstream equipment that otherwise would have escaped the filtration solution.
- The fluidised bed system at the mine runs without interruptions caused by failing water filtration and high levels of maintenance and management.
- The mine has made substantial cost savings and productivity increases, thanks to the high in-service time coupled with low maintenance and low operational costs.

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