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anywhere - all the time*

Anodic Protection, Maximum Efficiency: Transformer Rectifiers for Acid Coolers!

When Foskor looked for a cutting-edge solution to upgrade the Acid Coolers in their Acid Production plant, they turned to Omniflex for a game-changing replacement system that would deliver unmatched performance and reliability.



Foskor Acid Coolers

“Omniflex delivers an excellent product helping us to cost effectively upgrade our acid cooler transformer rectifiers with programable control”.

Lebo Vries
Instrumentation Engineering
Manager Foskor

Foskor

Foskor stands as South Africa's sole vertically integrated phosphate producer, committed to enhancing agricultural productivity. Our operations span the Phalaborwa Mining Division, where we extract phosphate rock, to our Richards Bay facility, where we manufacture phosphoric acid and granular fertilisers like monoammonium phosphate (MAP).

The Challenge

One key challenge in this project was replicating the legacy system's functionality while upgrading specific aspects, such as the introduction of a High Current Transformer Rectifier (TR) controlled by a Distributed Control System (DCS). The existing system, having been in use for many years, needs refurbishment periodically and the Anodic Transformer rectifiers ensure a passivate build up in the vessel which protects the metal from being attacked by the hot acid. The need to retrofit new components and ensure the system's seamless integration without disrupting ongoing operations was a significant hurdle.

The Solution

The newly implemented PowerView CP system is a distributed system consisting of several Slave Transformer/Rectifier Units (TRU's) mounted adjacent to the Acid cooler tanks to minimise cabling and installation costs. This system allows for remote monitoring of the entire system, enabling the project team to track the system's performance during integration. This ensures that potential issues are identified early, allowing for rapid troubleshooting without major disruptions to operations. Furthermore, the DCS system's remote monitoring capability means that experts and technical staff can access system data from anywhere, offering unparalleled flexibility and efficiency. Whether working from a central control room, on-site, or remotely from another location, team members now have the ability to diagnose problems, adjust parameters, and perform troubleshooting without the need for on-the-ground intervention. This significantly reduces response times, cuts travel costs, and minimizes the need for scheduled maintenance windows, all of which contribute to improved system reliability and cost-effectiveness.



Interval view of TRU's and controller

The Result

Through careful planning, phased implementation, and rigorous testing, the project successfully upgraded the legacy Transformer Rectifier System while ensuring continued operational continuity.

- 2 TRs per panel, one manual control and one DCS controlled.
- 1 x 3000W TRUs and 1x 800W per Panel.
- PowerView CP Control.



PowerView CP system close up

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