

Securing trouble-free production

PT Indo-Bharat Rayon in Puwakarta, Indonesia, is the world's largest producer of viscose rayon staple fibres employed in the textile industry.

Rayon fibre is an extremely versatile man-made fibre based on 100% natural ingredients. Soft and absorbent, it goes into everything from fabrics to nappies and can be used to produce yarn of different characteristics. When blended with synthetic fibres it imparts comfort and natural feel to the fabric.

The Situation

Production at PT Indo-Bharat Rayon is totally dependent on continuous trouble-free operation of a steam boiler, generating steam at high temperatures and a maximum pressure of 16 bar. The system previously operated with a single-stage centrifugal pump, but this was found not to meet the company's very strict demands for reliability and long service intervals.

The boiler is fitted with an economizer where the boiler flue gas (at 168-276°C) passes over the boiler feed water (at 135°C), thus causing the boiler feed water temperature to increase. This resulted in a reduction of the required energy input with the same rated output, but also decreased boiler efficiency.

The Grundfos Solution

Due to the extreme operating conditions, Grundfos suggested a solution with one CRN 64-2 pump with Air-Cooled Top. This model is suitable for handling liquids at temperatures of up to 180°C. The Grundfos CRN 64-2 offers low NPSH (Net Positive Suction Head) and is well suited for continuous operation under such extreme conditions.

The high efficiency of the CRN model – up to 80% - provides extremely low energy consumption and low long-term operating

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costs. In fact, Grundfos CRN pumps can offer a reduction in energy consumption by approximately 13,000 kWh per year compared to an average multistage pump.

The Outcome

Prior to installing the Grundfos CRN range, the Indo-Bharat boiler was subject to frequent unscheduled stops and high maintenance costs. These problems have practically been eliminated. The pump has been in operation non-stop for more than two years; the resulting service costs being non-existent.

The Grundfos CRN pump has completely solved the problems previously encountered, and the savings generated – both in terms of energy consumption and the non-existing service costs – have already more than paid for the pump.

The general outcome has been a much more profitable and environmentally friendly operation.