



Decanter centrifuge reduces chemical losses in green liquor dregs

Case story



Södra Cell is one of the world's leading manufacturers of market pulp. The company's paper pulp production takes place at three mills in Sweden and two in Norway, with a total annual production volume that exceeds 2 million tons. The mill of Södra Cell in Tofte, located at the edge of Oslo Fjord, produces around 400,000 tons per year of ECF sulphate pulp from a mix of softwood and hardwood (eucalyptus).

As part of the chemical recovery system, the plant was operating a vacuum filter for dewatering the green liquor dregs after the clarifier. The existing vacuum filter was limited in capacity and delivered a very low cake dryness of no more than 40%. "This meant poor chemical recovery and great difficulties with handling the sludges for disposal," says Solveig Borge Tveit, superintendent in the chemical recovery department.

Side-by-side test

In 2003, a comparative test showed that a decanter centrifuge was better suited for dewatering purposes than precoat vacuum filters. At that time, the cake dryness was measured as being close to 55% dry substance.

The advantages of using a decanter centrifuge proved to be numerous:

- Lower installation costs
- Higher chemical recovery
- Better ability to handle the sludge
- Lower sludge disposal costs.

Exceeding expectations

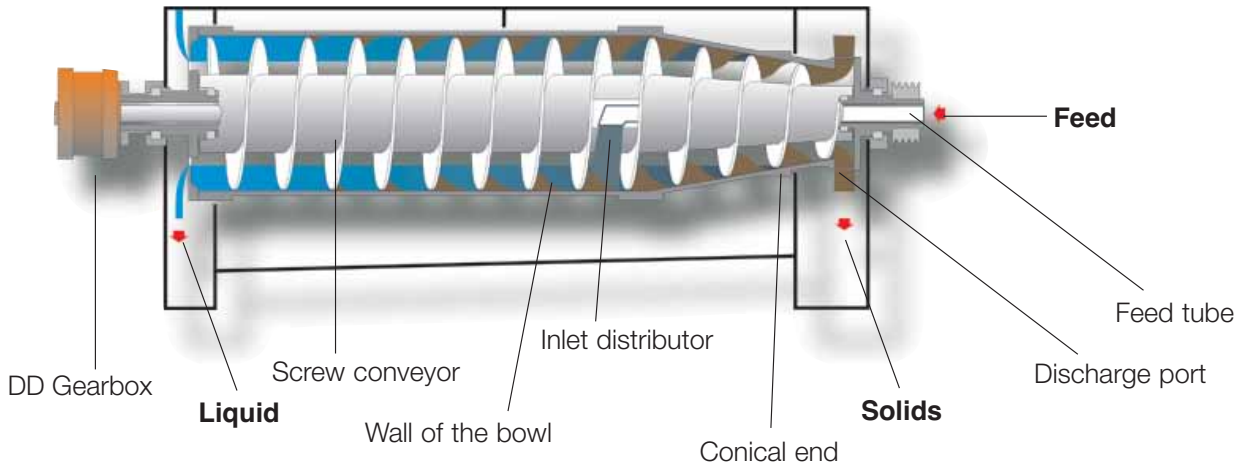
In July 2004, an Alfa Laval decanter centrifuge was put into operation to treat the full volume of green liquor dregs produced by Södra Cell Tofte. "The performance of the machine has actually exceeded forecasts, with a cake dryness that is consistently above 60%. This results in much better chemical recovery, and savings that more than cover the cost of the polymers added to achieve a proper clarification of the overflow," says Solveig Borge Tveit. Even when the pulp mill is running at maximum capacity, the decanter centrifuge only needs to run 5 days a week and therefore still has some spare capacity.

Low operating costs

The Alfa Laval decanter centrifuge requires no specific action from the operators, such as pre-coating. After each cycle, the machine only needs flushing with hot water, condensate, or any other available hot flow. This new type of centrifuge has also proved to be very low on energy consumption.

Easy installation

"It only took us 14 days to remove the existing vacuum filter and replace it with the new decanter centrifuge – which only took up 20% of the space that would have been required for a new filter!" explains Pål Salberg, the project engineer responsible for installation.

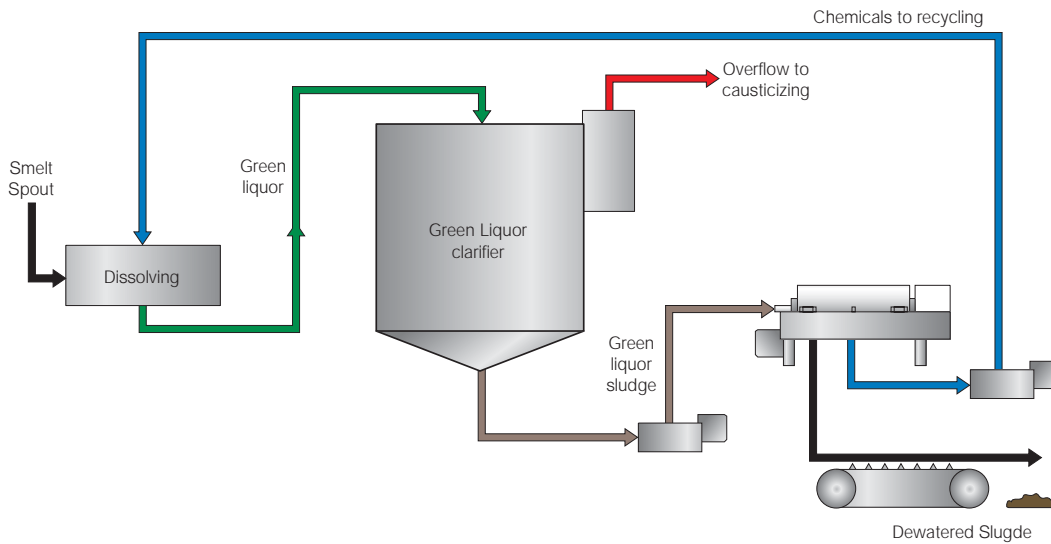


Low maintenance costs

"After 15 months and 6,500 hours of operation, we have not yet had to open the machine. We'll probably follow the Alfa Laval recommendations and plan a standard service of the machine after the first 8,000 hours," notes Pål Salberg. This service consists mainly of changing the bearings and seals. Possible wear on the conveyor flights was also discussed prior to installation, bearing in mind that Alfa Laval can also provide tungsten carbide tiles, which could be added later on. However, the company settled on Alfa Laval high-grade surfacing for the flights, and after regular follow-ups, Södra Cell Tofte is very happy with this choice.



"The decanter centrifuge takes up only 20% of the space required for a vacuum filter," explains Pål Salberg – project engineer at Södra Cell Tofte – to Thomas Svensson, sales engineer at Alfa Laval Nordic.



How to contact Alfa Laval

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