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STORY

Performance for Life

Collaboration with customer creates new application for Larox pressure filter

Pulp maker appreciates the excellent usability

The Larox PF pressure filter at Sunila Oy's sulphate pulp mill in Kotka, Finland, has a colourful history behind it. It was first tested to filter white liquor sediment in a joint R&D project carried out by Sunila and Larox. Afterwards it was decided to transfer it to filter green liquor dregs. It is not usual for a filter to be transferred to a new application, but in this case Sunila had a strong need to increase the efficiency of its green liquor dregs filtration.

The filter could not be utilised for its new application as is, however, so Larox and Sunila decided to collaborate on studying the changes that needed to be made to the filter and its application area. Pressure filters are not often used for this purpose, but following the changes, the results were positive.

"We agreed with Larox that the filter had to be fully overhauled, and that's what we did," says Eero Dufva, Operation Supervisor at Sunila. "The professional skills of both companies were needed to design and implement the changes. The project was actively discussed even among upper managements."

What was changed?

The electrical devices were transferred to their own room. The local control cabin was moved to the filter area, allowing the operator the best possible visibility to the filter, and the new hydraulic unit was enclosed and moved to a protected space on the lower floor of the filter building to protect it from moisture and dirt. In addition, worn out parts were replaced. The filter and auxiliary equipment were placed entirely in their own separate building, allowing the process to be monitored and preventive and corrective maintenance to be carried out efficiently.

Improved operation of modernised filter appreciated

The changeover took a long time, and according to Dufva the filter was even temporarily not in use before an appropriate application was found. The filter's operators at Sunila considered the filter to be difficult, and they did not believe that it would work even in its new application. Larox nevertheless implemented the changes, and today the system works excellently. Anyone in the factory area can see concrete evidence of this.

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"We previously used a drum filter to treat the green liquor dregs. This resulted in large quantities of black sediment that had to be transported through the factory area to the waste disposal site. Once this black mess ended up all over the factory when the tailgate of the tractor leaked," Dufva remembers.

The pressure filter has completely changed this, producing extremely dry cakes compared with before. The solids content of the dregs is now at least 45 percent of its weight.

"The usability has also increased considerably; the cake is clean and the filter easy to use. We no longer have this terrible black, wet sediment all over the factory yard," Dufva adds.

Furthermore, polymers are now used in the filtration process instead of powerful chemicals, as before. This allows the cakes to be easily and safely transported to the factory's waste disposal site, as the amount of residual alkalines is small.

"What is most important, however, is that we have improved the runnability of the pulp mill considerably now that we can utilise polymers for green liquor filtration properly. We now get clean lime mud and that way clean liquor, which ensures uninterrupted operations," Dufva explains.

Altogether, the filter project represented a long process for Sunila. Eero Dufva nevertheless considers the project to have been economically efficient.

"Even though the changes and investments were expensive, we easily get our money back through improved production, runnability and reliability, as we no longer have so many production stoppages," Dufva says.

Ease of use motivates operators

Creating a new application for the filter and learning the new operator interface demanded flexibility from Sunila's personnel. Dufva remembers that as soon as they realised that the filter performed well and was easy to use, the personnel began to like it.

"When the operators noticed how reliable the filter was following the changes, and once they learned how to run the filter, the criticism ceased. The reliable filter keeps operators motivated," Dufva points out.

The usability of the filter has been excellent following the changeover, almost as high as 99 percent. According to Dufva, the collaboration with Larox has been excellent from the start.

"Larox has provided excellent expertise and help in situations where we alone could not do anything. They also provide support over the phone when needed," Dufva says.

Service contract creates ease of mind

Sunila has a long-term service contract with Larox for its filter. Sunila carries out scheduled daily and weekly maintenance, while Larox inspects the machinery six times a year to ensure that it operates perfectly. At the same time Larox advises about recommended servicing and spare parts. Larox also carries out inspections whenever else needed, such as before factory shutdowns.

"This lets us know in advance what servicing has to be carried out during the stoppage. We willingly rely on Larox's expertise in areas where we ourselves lack the required know-how. Such areas include filter pressing diaphragms and hydraulics, for example," Dufva explains.

Larox offers its customers a wide range of service contracts. In some cases Larox carries out just two inspections a year and gives recommendations about repairs. At the other extreme, Larox personnel assume complete responsibility for maintenance, and even operations, making filters completely carefree for customers.

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