SULZER

CASE STUDY

AHLSTAR pumps with maintenance-free dynamic seals for paper mill wastewater treatment plant

Built in 1992, Norske Skog Golbey located in France is the largest newsprint production facility in Western Europe with a capacity of 600’000 tons per year. The paper mill includes a conventional wastewater treatment plant which treats about 20’000 m^3 per day of process effluents. At the output of the plant, about 30% of the discharge water is reintroduced into the mill circuit and the remaining 70% is returned to the Moselle river. Despite the increasing stringency on the quality of the discharge water, no environmental incident has occurred since the start-up of the plant.

“Since 1992 our AHLSTAR pumps equipped with dynamic seals have proven to be extremely reliable and economical even in the toughest applications.”

Jean-Yves Verguet, Process Engineer Energy & Fluids

The challenge

For the integrated wastewater treatment plant, Norske Skog wanted some dry installed pumps similar to the main process pumps used in the paper mill, with high reliability and ease of maintenance. Superior product technology was a must to avoid any disruption of the process and to optimize the work environment.

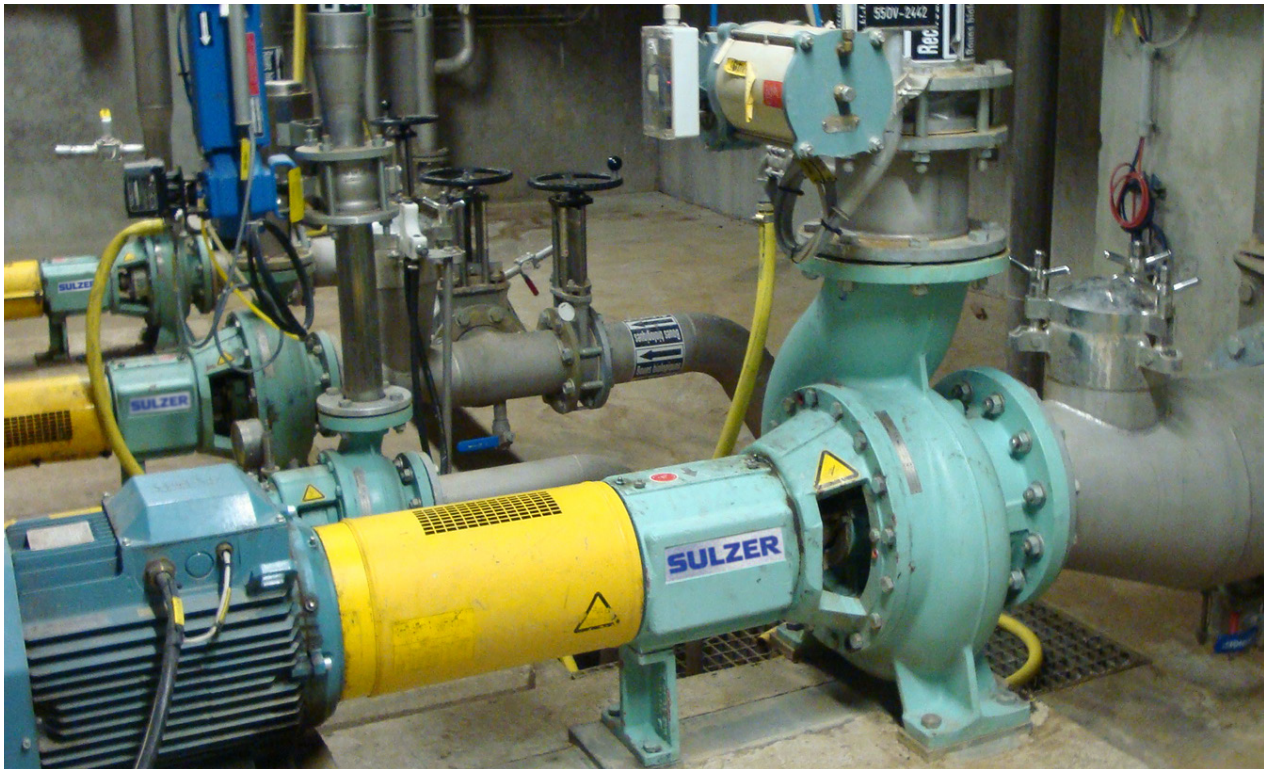
The solution

In close cooperation with the customer, Sulzer chose some AHLSTAR APP and NPP pumps for each stage of the wastewater treatment process. In total, more than 50 AHLSTAR pumps were installed. APP pumps with open impellers are handling mill effluents, clarified water and light sludge, while NPP pumps with vortex impellers are running on higher dry solids content (up to 7%) sludge. APP and NPP pumps are equipped with contactless dynamic seals, which eliminate mechanical wear, leakage and the need for sealing water.

Customer benefit

About 450 AHLSTAR pumps are working in the paper mill, most of them with dynamic seals. The dynamic seals are designed for stock consistencies up to 8%, but are also perfectly suitable for all other difficult liquids with a high solids content, including sludge. By using the same type of AHLSTAR pumps with dynamic seals in the wastewater treatment plant, the client can be ensured of equally trouble-free operation. Also, by having the same pumping equipment at both locations, the spares storage and maintenance costs are greatly reduced.

AHLSTAR APP41-200 with open impeller and dynamic seal pumping return activated sludge



The Sulzer difference

Sulzer has developed and utilized dynamic seals for its process pumps for almost 30 years. Today, more than 50,000 dynamic seals have been installed all over the world, proving their popularity and reliability. By choosing AHLSTAR pumps with dynamic seals for demanding wastewater applications, the client can take advantage of:

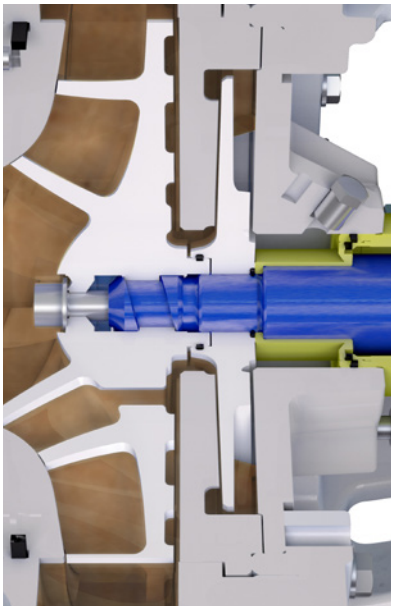
- Interchangeability of spares with other pumps in the paper mill
- Trouble-free operation without risk for leakage
- Costs savings through reduced maintenance and no sealing liquid

Product data

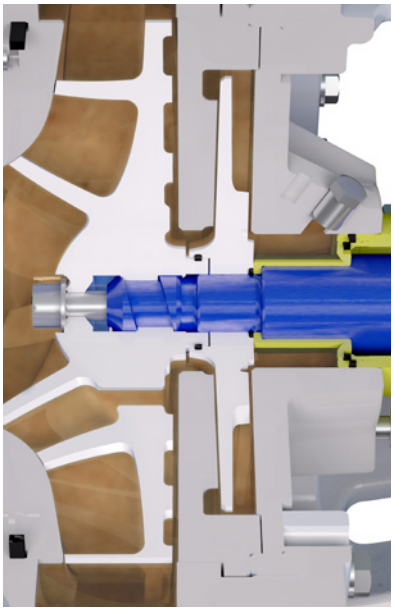
The wastewater treatment plant has a total of 51 AHLSTAR pumps.

Liquids	No. of pumps	Pump types	Impeller	Seal
High DS sludges (primary, thickened, combined)	11	NPP	Vortex	Dynamic seal
Low DS sludges (return activated, excess)	8	APP	Open	Dynamic seal
Others (mill effluents, storm water, treated water, nutrients, acids)	32	NPP, NPP-S, APP, APP-S	Vortex, open, closed	Dynamic seal, others

Most of the pumps are fitted with dynamic seals. The contactless dynamic seal uses an expeller to move liquid back into the volute casing and away from the stuffing box when the pump is running. When the pump stops, the liquid flows back into the stuffing box, creating an elastomeric static seal to prevent leakage.



Sulzer dynamic seal running



Sulzer dynamic seal stopped

For any inquiries please contact

denis.rosier@sulzer.com

sulzer.com