
Multiple pump solutions for fishmeal manufacturer

FF of Denmark is one of the world's leading manufacturers of fishmeal and fish oil. On a yearly basis, the company processes some 1/2 million ton of raw fish, of which 75% are exported to countries around the world and the remaining 25% are sold in the home market. High quality products are key issues to FF of Denmark. Therefore, it is essential that the raw fish is always as fresh as possible when it enters the production plant in order to guarantee a continuous high product quality.

TOPIC:
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LOCATION:
Denmark

COMPANY:
FF

The Situation

The production process at FF of Denmark is divided into 4 steps: The boiling process, the pressing process, the deboning process and the drying process. Once the raw fish has been analysed and approved, it is boiled at 90°C. Then, the fish is drained and pressed. Next, the fish is dried by means of indirect steam at 160°C. Finally, antioxidant is added to the fishmeal and the meal is cooled and milled. Reliable pumps are important to FF of Denmark's production and the company uses pumps in different processes.

Previously, FF of Denmark used 11 kW end-suction pumps to handle the 160°C condensate. The pumps had a constant speed and a regulating valve to control the water level in the condensate tank. But the pumps did not live up to FF of Denmark's expectations to operational reliability. The shaft seal could not handle the high temperatures and often production had to be put to a standstill in order to replace them. Additionally, the old end-suction pumps consumed a high level of energy; obviously a cost-consuming affair for FF of Denmark.

Manually controlled diaphragm dosing pumps were used to add antioxidant to the fish substance to make sure that the fishmeal

did not go rancid. The manual setting of the dosing pumps took time and was uneconomical because it was difficult to dose the exact amount of additive.

The Grundfos Solution

The Grundfos CRNE Air-Cooled Top pump has a shaft seal that is specially designed for applications, which have to handle very hot liquids, that is 120°C to 180°C. In order to ensure that the liquid temperature around the shaft seal does not exceed the level that it can withstand, the pump is fitted with a special air-cooled shaft seal chamber.

The air-cooled pump top that cools the liquid around the shaft seal prevents the shaft seal from overheating. However, should it occur that the shaft seal needs to be replaced, it is possible to change the CR cartridge seal within only a few minutes.

The Grundfos CRNE Air-Cooled Top pump comes with an integrated variable frequency converter. This implies that the motor's speed can be adapted to the need of flow. A large flow is necessary, when FF of Denmark has a large amount of raw fish to process and additionally consumes more energy. A smaller amount of raw fish calls for a lower flow and thus for a lower energy consumption.

The Grundfos dosing pumps are easy to set. The pumps are set electronically to dose the specific amount of antioxidant in millilitres or in litres, they automatically add the exact quantity of additive. Once the Grundfos digital dosing pumps are set, they run by themselves and dose within the programmed intervals.

The Outcome

FF of Denmark is more than satisfied with the solution that Grundfos came up with. According to FF of Denmark, the Grundfos CRNE Air-Cooled Top pump is a convincing and viable solution when dealing with the high condensate temperatures. So far, the installation of 6 Grundfos CRNE Air-Cooled Top pumps has reduced the number of downtimes per pump and increased the pump's lifespan. Additionally, replacing the old end-suction pumps, (11kW) with the Grundfos CRNE, (5.5 kW) resulted in a saving of energy of some 50%.

The installation of 3 Grundfos Digital Dosing pumps fully lives up to FF of Denmark's expectations. "Thanks to Grundfos, inaccurate, time and cost-consuming dosing is a thing of the past", says Bruno Larsen, Maintenance Manager at FF of Denmark.