AW-LAKE
PROCESS FLOW MEASUREMENT

APPLICATION SPOTLIGHT
Grease Separation & Recovery - Food Processing

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APPLICATION:

A manufacturer of frozen bakery products, packed margarine, and shortenings wanted a better process for recovering grease from margarine returned from production departments and customers. In the original process, the returned margarine was melted and pumped into tanks where it formed into three layers of density: water, grease, and emulsified grease residues. The various layers were separated by measuring the conductivity of each liquid using two level detection units. Using that data, the operator determined when to transfer the product.

For years, the company moved the recovered grease to another plant for further processing while the water was disposed of in a sewer system. As the separation method was faulty, operators constantly sampled the liquid to ensure its transfer to the correct location to avoid sending grease into the sewer system. This process resulted in a considerable waste of good fats, causing a loss of income for the food manufacturer as well as creating unnecessary pollution.

To improve the accuracy of the separation process, the food company replaced level detection units with flow meters to create a solution that ensured a smooth-running grease recovery process at the plant with minimal waste and no ecological harm.

PRODUCT SUPPLIED:

- TCMQ TRICOR Coriolis Mass Flow Meters

CHALLENGES:

- The food manufacturer sought to considerably increase the accuracy of the separation process to improve the grease recovery and reduce the ecological footprint.
- The density/thickness/viscosity of the grease and its changing thickness could affect the accuracy of flow meters with moving parts

SOLUTION:

AW-Lake quickly realized that the process was very simular to applications that their TRICOR Coriolis meters have been solving in the crude oil seperator market. For this application, AW-Lake's TCMQ TRICOR Coriolis Mass Flow Meter offered an extremely compact and accurate density measurement solution that excelled in performance, safety, and user-friendliness. With the Coriolis Mass Flow Meter measuring the specific liquid density, the new process can more accurately differentiate between the emulsion and grease layer, resulting in fewer polluting substances entering the wastewater. Completely automated and intuitive, the new system provides a user-friendly display and reliable results.

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Notable features of the Coriolis Mass Flow Meter that proved important to the success of this installation include:

- High speed diagnostic package with 4 levels of security for unparalleled security

- Compact design and simple installation for space savings and cost reduction.

- With no moving parts, the flow meter is not affected by the density, thickness, and viscosity of the grease.

- An extremely user-friendly interface reduces training costs and guarantees fast commissioning.

- Rugged housing and low profile tube design guarantee an ideal measurement environment with 0.1% accuracy and 0.05% repeatability.

- Numerous connection options including Tri-Clamp designs

- Quick data transfer via integrated USB port, and a digital sensor link for remote versions support various configurations.

- Removable SD memory card stores operation and factory parameters, calibration data, and certificates.

- 3A sanitary cerification allowing CIP and quick breakdown for cleaning.

RESULTS:

The customer noted that they have had no issues with the new installation and believe it is a perfect example of a 100% reliable solution. "We could not have hoped for more."

Based on the success of the installation, the Coriolis Mass Flow Meter is being incorporated into other applications. For example, the instrument is used to monitor the constant flow in the cooling system to guarantee consistent quality. The food company will continue to consider AW-Lake's TRICOR Coriolis Mass Flow Meters when moving forward with new projects or optimizing existing processes.