



HEAT EXCHANGER: EFFICIENT & RELIABLE EDIBLE OIL COOLING

HIGHLIGHTS

- Easy & Simple Installation due to integration of both measurement and control
- Combined solution enables for fast and rapid control
- Digitalization of the asset with real time data
- Heat exchanger lifetime prolongation with extensive data insight



1. BACKGROUND

Established in 1996, Special Refining Company (SRC) is a renowned employment service provider in the food industry, specializing in vegetable oils and fats. As a subsidiary of the esteemed Pieter Bon Group, SRC operates exclusively as a service-oriented entity, devoid of any commercial activities.

2. CONTROL REQUIREMENTS

Heat exchangers play a critical role within SRC, facilitating the cooling of raw or refined oil to the appropriate temperature for further refining processes or storage. The efficiency of this cooling process directly impacts the quality of the oil. Additionally, a good heat exchanger efficiency reduces the risk of potential damage. From a carbon food print reduction point of view, SRC leverages from residual heat captured by the refined oil to warm up the water and optimize energy reuse in the production process.

Traditionally, in conventional heat exchanger applications, a control valve is installed, and a setpoint is provided to regulate the valve opening percentage. The percentage of valve opening is determined by the temperature of the process fluid on the cooling water outlet side of the heat exchanger. The temperature is measured with a temperature sensor and communicated to the Distributed Control System (DCS), which generates the setpoint to the valve.

However, this setup introduces latency that can affect the efficiency of the heat exchanger. Furthermore, a traditional setup falls short on measurements, which generates data, to perform comprehensive analysis of the heat exchanger's efficiency.



