

INDUSTRY: PULP & PAPER | CUSTOMER: FINNISH P&P COMPANY | LOCATION: FINLAND

ISSUE

At this facility, there were seven evaporators in series, and during the flow from evaporator 6 in the beginning of the process to the last evaporator 1A, fluid from the process liquid evaporated and the dry material content of the liquor increased from around 10 % to over 50 %. As a side effect of this process, the black liquor flowing through the series of evaporators caused calcium-based fouling issues especially in the evaporators at the end of the series, 1A and 1B.

- Fouling in the black liquor evaporators reduced energy and process efficiency and frequently reduced total pulp manufacturing capacity.
- In the worst case, the warmest evaporator (1A) needed two cleaning stops (1-5 days per stop) per month, whereas the 2nd warmest evaporator (1B) needed one cleaning stop per month.
- Constant “firefighting” and disturbance caused by the need to clean evaporators 120/365 days a year.

SOLUTION

A multi-channel solution was placed on the pipes of evaporators 1A and 1B to create an even ultrasonic field.

- Multi-channel solution
- Remote operation of the transducers with Altum's software

RESULTS

Pump current levels and flow rate were measured to see the effect of Altum's solution:

- Pump current levels became more even and stable.
- Energy efficiency improved by 10% per unit.
- Amount of washes decreased 75% for evaporator 1A and over 85% for evaporator 1B.



UP TO
120 DAYS
PER YEAR
OF PRODUCTION
INTERRUPTIONS



Altum's COD (Clamp-on Device) with ultrasonic transducers



ENERGY EFFICIENCY
IMPROVED BY MORE THAN
10% PER UNIT



€730K / YEAR WORTH
OF PRODUCTIVITY
ENHANCEMENT



€120K / YEAR
WORTH MORE
OPERATION UPTIME



€180K / YEAR
SAVINGS IN
ENERGY COSTS



OVERALL BENEFIT
EXCEEDS
€1M PER YEAR