CASE STUDY

INDUSTRY: FOOD & BEVERAGE

CUSTOMER: Food Processing Plant*

LOCATION: France

BACKGROUND: This food processing plant produces 25 tons per hour of steam for their process, but had zero percent condensate return. Some condensate was sent to the process or used as washing water.

SCOPE OF WORK: Armstrong International conducted a feasibility study to identify and quantify the condensate that could be recovered and used in the boiler house.

The results from the study revealed 13.2 gal/min (3 m^3/h) of condensate that was sent to existing process water storage tank could be recovered. Condensate is pure water with very low conductivity, and when used as feed water in the boiler house, it reduces the blowdown in the boiler and decreases the steam flow required in the deaerator; 10% of steam production was for the deaerator.

An additional internal audit revealed that the plant's process water in the plant can be generated by other source of heat recovery.

Armstrong delivered a complete turnkey project by installing a DN80 pipe with insulation to collect condensate from the different part of the plant towards the deaerator in the boiler house. A contamination detection system was installed to send the condensate to the boiler blowdown tank in case of pollution by the process. Armstrong also installed an ultrasonic water flow meter with a temperature sensor to validate and monitor the savings.

BENEFITS: The customer realized significant savings due to the recovered condensate and also enjoyed the ability to monitor their process operation. The customer invested $130,719 (roughly 120 000 €) with an ROI of $76,252 (roughly 70 000 €) within one year.

*Armstrong International respects the customer's request to remain anonymous.