PAPER MILL REDUCES BLOWDOWN AND CONDUCTIVITY WITH CETAMINE®

A major factory cuts total costs with our all-in-one product

KEYWORDS

- Cetamine® V211
- Boiler
- Turbogas
- Cogeneration
- Blowdown reduction
- Paper Industry

Total costs reduction

−50% Blowdown improvement

All-in-one product

BACKGROUND

A major Italian paper mill uses recycled raw materials from the pulped paper to produce specific paper which will then be used in corrugating plants for corrugated cardboard production.

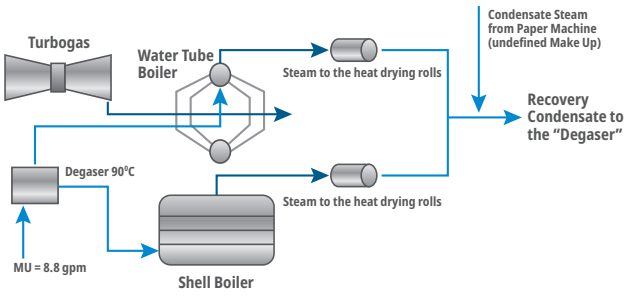
The factory works 365 days a year and produces over 26 million pounds of paper a year.

This paper mill was one of the first in Italy to install a cogeneration plant that could satisfy the whole power requirements of the plant.

SYSTEM DESCRIPTION

The processes of paper production require steam in order to heat the drying rolls of the machine. The steam is generated by two boilers:

- A shell tube boiler
- A water tube recovery boiler which uses smokes coming from a Turbogas
- Pressure: 174 psi
- Steam production: 52,910 lbs./hour
- Make-up water: 8.8 gpm demineralized water
- Feed Water average temperature: 194°F



Return condensate:

- Shell boiler: 92 %
- Water tube boiler: undefined, because steam condensation is recovered from the paper machine but without flow measuring

OBJECTIVES

The proposal of Kurita was based on the following objectives:

- Conductivity reduction
- Blowdown reduction
- Unique product to simplify operations
- Total cost reduction
- Global service with fixed cost
- High service quality

ACTION/APPROACH

The previous treatment was based on combined treatment with volatile Deox/NaOH/ neutralizing amines. High conductivity and high alkalinity were normally accepted, and the cycle of concentration was just around 10-15 with high blowdown volumes. Therefore, the consumption and hence the costs of demineralized water as make-up were high. Kurita proposed a very simple and easy to manage treatment: Cetamine V211.

After the presentation of the detailed technical proposal, it was agreed to start a trial period of three months. During the trial, the customer could appreciate our professional service, with an engineering approach and numerous analyses taking place on field.

ACHIEVEMENTS

During the first month of treatment, Cetamine generated a cleaning action in the system, which was visible on turbidity. After this period, conductivity and the turbidity dropped down and blowdown could be significantly reduced.

As the blowdown was manually controlled, the exact monitoring on its required volume was not possible. Nevertheless, our customer evaluated a reduction of at least 50%. The quantity of condensate return coming from the condensate of paper machines, cannot be measured. Therefore, the Cetamine V211 dosage cannot be expressed as usual. It was dosed in the demineralized make-up water, in a dosing rate which enabled a suitable residual of amines in condensate.

CONCLUSIONS

The results were very satisfying:

- A very significant reduction of the conductivity
- 50% reduction of blowdown
- Easier and faster handling of the chemicals (one unique product instead of the former preparation of mixture with various products)
- Reduced operating costs, thanks to the reduction of water consumption and of the treatment cost.