



TK CHEMICAL COMPLEX LIMITED

Increase of Condensate Recovery from Boiler

SUMMARY OF THE OPTION

TK Chemical Complex Ltd is a privately owned, medium size paper mill located in Chor Khyderpur near Chittagong and produces office paper for the Bangladeshi market. Condensate recovery was increased from 70% to 90% by improved management of condensate that was previously discharged into the sewer. There were no investment costs, annual savings are US\$ 8620 and the payback period was immediate. Each year, 12 kiloliters of fuel oil is saved, which is equivalent to 32 tons CO₂. In addition, the amount of make up water was reduced.

KEY WORDS

Pulp & Paper, Bangladesh, Boilers & thermic fluid heaters, Condensate

OBSERVATIONS

Condensate recovery was selected as a focus area because steam is mainly used for indirect heating in the paper machine cylinders and it was considered that significant improvements in steam condensate recovery could be made. Steam is mostly used for the drying process and is distributed through a 200 mm steam main line.

The Team observed that condensate recovery was approximately 70%, which is relatively low (ideal recovery rates are around 90 – 95% of the steam used). The facilitators and the consultant were informed that a large proportion of condensate that is not recovered is not lost in the process, but is drained during electrical failures and shut downs and is then released into the sewer. As a result, water and furnace oil is wasted because new water must be heated up in the boiler.

OPTIONS

The Team proposed to increase the percentage of condensate recovery from the boiler. A tank is needed for the collection of condensate that is currently discharged. An existing in-house condensate tank can be used or it can be sourced locally from the ship-breaking yard. The installation of the tank and connection with the boiler does not need any process or lay out modification and can be installed without production disruption.

However, the company managed to increase their condensate recovery from 70% to 90% by improving good housekeeping practice to avoid condensate discharge. The company therefore managed to make savings without investment costs.



RESULTS

Financial Benefits:

- Investment: none (US\$ 8620 for condensate tank but this was not installed)
- Annual operating costs: none
- Annual cost savings: US\$ 1200 approximately (potential: US\$ 8620)
- Payback period: immediate

Environmental Benefits:

- Annual fuel oil savings: 12 kiloliters (potential 60 kiloliters approx)
- Annual GHG emission reductions: 32 tons CO₂ (potential 167 tons CO₂)
- Annual water savings: not quantified

FOR MORE INFORMATION

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