White-water strategies for integrated TMP newsprint mills – Implementation of a comprehensive system for energy and water conservation at Alberta Newsprint

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ABSTRACT

A system was commissioned at Alberta Newsprint Company to optimize energy recovery and minimize steam usage for water and white water heating duties. A network of heat exchangers was designed to recover waste heat from effluent and atmospheric vapour sources and distribute the recovered energy to water and white water heating duties Provisions were made to vent excess waste heat from the network to atmosphere, allowing independent moderation of effluent temperature. Allowance was made for variable TMP production rates, the mill's response to extreme electrical price variations in Alberta. Design work showed that more energy savings could be achieved at lower installed cost if water consumption were simultaneously reduced. Recovery of press section filtrates was implemented to achieve the required reduction. The new energy optimization and water recovery systems were commissioned in December of 2004; steam usage for water and white water heating was reduced by 0.9 GJ/t.

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