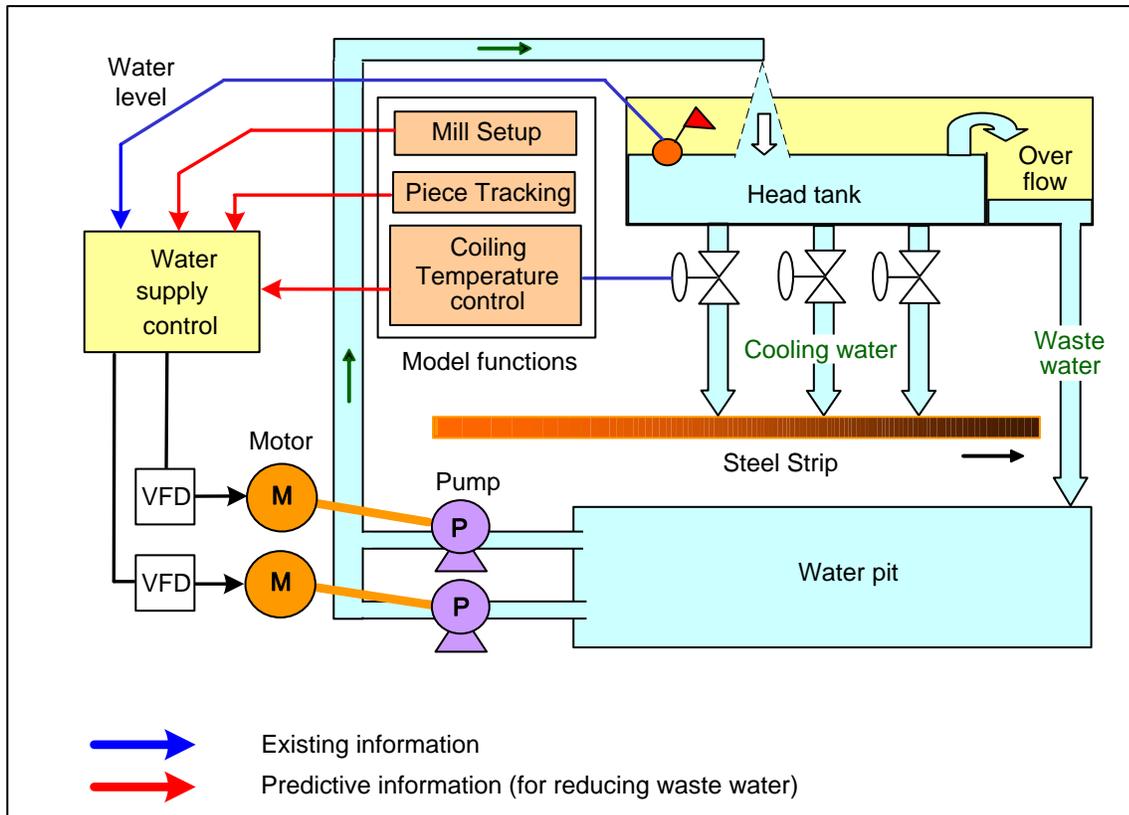


Cooling Water Flow Control on a Hot Strip Mill



Run Out Table for steel strip cooling on a Hot Strip Mill

Several run-out table pumps feed cooling water to the header tank, which supplies the laminar flow cooling tubes on a hot strip mill. Constant water level in the header tank produces a constant pressure at the flow control valves in the laminar flow lines and allows good flow control. If too much flow enters the header tank, the surplus water overflows into the scale water pit, and wastes pumping energy.



In order to improve this situation, a water supply control system has been developed which uses existing control information and predictive information from the strip mill models. This control sets the speed of variable frequency drives (VFD) connected to the pump motors, and operates as follows:

- The Coiling Temperature Control (CTC) computer calculates the required flow of the cooling water in advance.
- The water supply controller receives the required cooling water flow data from CTC computer, and the mill setup and piece tracking models.
- The water supply controller predicts the water volume using this information and determines the speed of the run out table feed pumps.
- During a roll change, the run out table feed pumps are stopped or slowed.

Using this system, pump energy savings of 5,010 MWh/y (43%) were realized on a steel mill coiling temperature control system.

For more information about our many energy saving applications, please contact metals@tmeic.com, or call TMEIC at 540-283-2100.