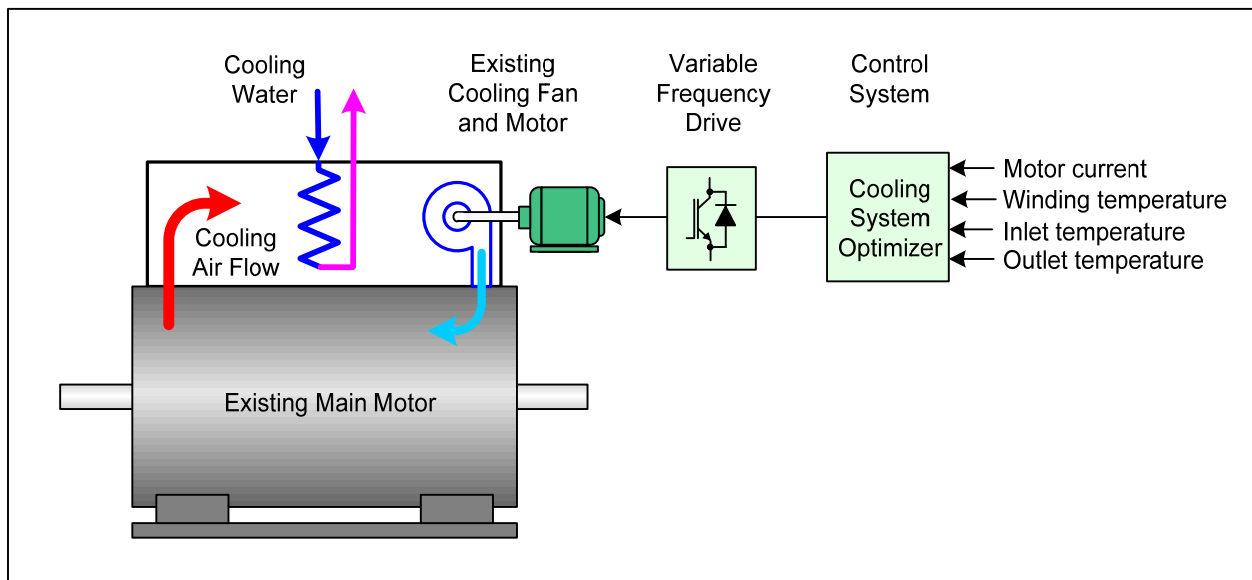


The large main motors on rolling mills are air cooled and have an overhead heat exchanger supplied with cooling water. The cooling fan runs continuously at constant speed using large amounts of energy, even when the motor is lightly loaded and does not need much cooling.

A variable frequency drive (VFD) can be used to power the cooling fan motor. With the VFD the fan speed can be reduced when motor loading is low and cooling is not required, thereby considerably reducing energy consumption.



Motor Cooling Fan Control System

The cooling system optimizer determines the speed of the motor cooling fan so as to obtain the required main motor cooling air flow. To do this the optimizer estimates the temperature rise of the main motor based on the real-time current, winding temperature, inlet temperature and outlet temperature, and then adjusts the speed of the fan motor to produce the desired cooling flow.

Actual system tests on rolling mill motors in a metals company have shown that energy savings of 7,760 MWh/y can be achieved with this control method.

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