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## WinDaq Cuts Maintenance Costs in Steel Mill

DATAQ Instruments

A mill customer wanted to predict bearing failure in the huge ladles they use for pouring molten steel since unscheduled shutdowns greatly complicate the repair process and significantly increase costs. The ladle is placed on a turret and filled with molten steel. The turret, riding on the critical bearing, is then rotated to reposition the ladle for pouring. Simultaneous measurements of voltage and current on the motors used to rotate the turret were made when the bearing was first replaced, then periodically over its life until failure. Readings were acquired using DATAQ Instruments' DI-730 hardware and WinDaq software. Multiplying the voltage and current waveforms, then integrating the result yielded a profile of the amount of energy required to rotate the turret in units of watt-seconds. As the turret bearing wears, the energy required to rotate it increases a predictable amount. Mill technicians used this information to accurately predict when a bearing failure would occur, thus allowing a controlled shutdown of the line for maintenance. The instrumentation used in this application paid for itself 70 times over during the first maintenance cycle alone.