



ENHANCING PLANT EFFICIENCY

OUR CUSTOMER

One of the leading United States producers of steel and steel products

- In operation for over 100 years
- Over 26,000 employees
- Annual revenue in excess of \$ 22 Billion

THE CHALLENGE

Our customer repeatedly suffered unplanned downtimes of at least 14 hours due to overheating of his mill stands. This significantly affected production and numerous unusable steel by-products had to be disposed of. The goal was to reduce these unplanned downtimes and to lower the scrap rate.

THE SOLUTION – Why ifm?

Together with the customer, ifm engineers with knowledge of the industry analysed the causes and determined that the project should focus on the flow rate, temperature and pressure of the cooling water of the mill stands and the temperature of the bearings.

In order to detect leaks or insufficient cooling water flow rates in the cooling lines of the mill stands, the electromagnetic flow sensor of the SM series from ifm now not only monitors the flow rate but also the inlet and outlet temperature of the cooling water. The PN series pressure sensor ensures that the system pressure in the cooling lines is at the correct value and the TP/TS series temperature sensor monitors the bearing temperatures of mill stands.

All sensor signals are monitored by the steel mill's control system. As soon as the values are outside their permissible range, an immediate message is sent that the roll stand can be shut down and taken out of operation before damage occurs.

MEASURABLE RESULTS

ifm's intelligent sensor technology increased the visibility of process values, resulting in fewer unscheduled downtimes and roll stand failures.

- The old system had about four failures per year, which corresponds to about 56 hours of unplanned downtime or a loss of \$ 232,000.
- Repairing the mill stands cost approximately \$ 276,000.
- In five years, this system has an expected cost savings of \$ 2,500,000 and 280 saved labor hours.

