Honeywell Partners with TATA Steel for their Energy Management Center for Gaseous & Liquid fuels

“Choosing Honeywell as a Technology Partner to setup a modernized Energy Management Center, has brought us closer to the goal of reducing CO2 emissions. This project required careful coordination between different processes, and we were able to place our trust in Honeywell as we have worked together on challenging projects in the past.”

Mr. Lahiri, Sr. Manager - Fuel Management, Tata Steel

Benefits
In any industry, the three top operating expenses are often found to be energy, labour and materials. In terms of cost saving potential energy would invariably emerge as a top ranker. Responsible companies also look at energy management as a societal and environmental necessity.

Tata Steel, India’s oldest steel plant lists one of its core values as “respecting the environment and caring for the communities”. This reflects in the company’s sustained environment management efforts and initiatives of reducing energy consumption, total water pollutant discharge, and Carbon-dioxide (CO2) emission. Tata has set up a modernized Energy Management Centre (EMC) equipped with a Supervisory Control And Data Acquisition (SCADA) system that gathers all plant site energy information and manages the load dispatch. Honeywell is the selected technology partner helping with the task.

As part of phase one of the project, Honeywell supplied 8 PLC based Remote Terminals in 1998. Later, two more orders were placed in 2006 and 2010 to add RTU/PLC’s in the network, Field Instruments and SCADA modification to cater the subsequent capacity additions.

Using Honeywell’s Experion and the SCADA system, Tata Steel has been able to reap the following benefits:

- Ability to correlate energy consumption of process units to its measured output, and with benchmarks using data from the historian. This allows to set targets for energy efficiency improvements, and periodic review of the targets
- Plantwide access to the energy supply and consumption of the entire site through a centralized server, enabling monitoring of individual energy networks, and individual process units in real time

Tata Steel uses Honeywell Control Systems to improve Energy Management

Background
Tata Steel, a Fortune 500 company, is the world’s 6th largest steel company with an existing annual crude steel production capacity of 30 Million Tonnes Per Annum (MTPA). Established in 1907, it is the first integrated steel plant in Asia and is now the world’s second most geographically diversified steel producer.
Jamshedpur Steel Works has been the production base of the company since its establishment a century ago and produces over 5 million tons per annum of pig iron, 6.8 million tons of crude steel and 6.5 million tons of saleable flat and long steel products in the current fiscal 2009-10. The capacity is slated to increase to 10 MTPA of crude steel by 2012. The integrated Iron and Steel complex is equipped with 6 Coke Oven (CO) Batteries, 4 sintering plants, 7 Blast Furnaces (BF), 5 Linz-Donawitz (LD) Converters, 3 Billet Steel Shops, 2 Slab Steel Shops, and a number of rolling mills producing wire rod, bar, plate, hot strip and cold strip products.

Challenge
Having already halved the amount of energy needed to make a tonne of steel over the last 40 years worldwide, Tata Steel has set itself a target of reducing CO2 emissions by a further 20% within the next decade. The India division has a target to reduce CO2 emissions to 1.5 tons/ton of liquid steel from the current 1.8 tons.

Tata Steel was looking for an automation partner to help them implement and achieve this goal for energy management. The need was to install various controllers and terminal units at different shops distributed throughout the plant over a plant-wide dedicated fiber optic network of more than 100km. The system is required to monitor and control the supply, consumption, and network of industrial gases (Oxygen, Argon, Nitrogen, CO), compressed air, instrument air, turbo blast air, blast furnace gas, converter gas, propane, steam boilers, clarified water and gas booster in the gas mixing stations, water treatment plant, and pump house operations.

“The task of laying the fiber optic cables required careful coordination between the different plant process automation suppliers and shops as the inputs to PLCs come from different processes. We were able to place our trust in Honeywell as we have worked together on challenging projects in the past,” said Mr. Lahiri who heads the fuel management department at Tata Steel.

Solution
The extensive knowledge of control systems, energy management, and iron & steel processes gave Honeywell an edge over others and was chosen by Tata Steel for this project. The strong presence of local engineering and service staff in Jamshedpur and Pune, India was an added factor in Honeywell’s favour. Also, Tata has used Experion before and found it highly flexible and reliable, consistently delivering high-performance and meeting all their requirements.

As part of the second phase of the project, Honeywell installed 8 operator stations, 67” Video screen in the EMC control room and plant wide redundant Fibre Optic Network. The SCADA system is network connected to 8 old and 3 new PLC based Remote Terminal Units located in various process areas.

“Honeywell provides hardware, software, and engineering implementation as well as project management, site start-up, commissioning and training services for the projects - and we were looking at the option of single sourcing. Also Honeywell products have proved efficient, reliable, and cost effective in the past,” said Mr. Lahiri. “We know our trust was well placed - good team work, detailed planning, and time management helped us complete phase two of the EMC successfully.”

Honeywell is now working on the third phase which involves add-ons of 4 PLC/RTU and field instrumentation over the fiber optic network for the 3MTPA expansion of the plant. It is due for commissioning in 2012.