

# Steel Mill Decreases Operating Costs and Reduces Environmental and Safety Risks with Smart Wireless

## RESULTS

- Decreased operations and maintenance costs
- Reduced environmental and safety risks
- Improved coke quality

## APPLICATION

Coke oven temperature

## CUSTOMER

Steel mill in North America

## CHALLENGE

This steel mill was having problems controlling the temperature in their coke ovens. It is crucial to stay within the coke oven operating limits. Low temperatures risk oven collapse and capital damage. High temperatures waste heat and increase utility costs.

Because of high wiring cost this steel mill initially had no measurement on their coke ovens and required measurement rounds twice every shift. The customer tried implementing a wireless technology in this application, but the technology was unreliable due to battery life and moving larry cars. The long communication distance increased the power consumption and therefore decreased the battery life to a couple of months. Also, the wireless technology was point-to-point and the larry cars regularly blocked the signal path, causing communication to be unreliable.

Not having a reliable coke oven temperature measurement negatively impacted this customer's business. Routine measurement rounds increased operations and maintenance costs. It also made an environmental impact and increased the safety risks of personnel. When the lids to the coke ovens were opened to make manual measurements, coke oven emissions were released into the atmosphere. The carcinogens and the high oven temperatures increased the safety risks of its operators. Lastly, the quality of coke exiting the oven was diminished when it did not operate at the correct temperatures.



*The customer experienced an improvement in coke quality because it could reliably control the coke oven temperatures.*



*The Rosemount 848T Wireless*

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## SOLUTION

The Rosemount 848T Wireless High Density Temperature transmitter solved the challenges this customer faced. The 848T wireless transmitter utilizes SmartPower™ technology, which provided a longer battery life for this application. It improved battery life from months to years. Also, the self-organizing network provided greater than 99% data reliability and was not affected by the larry cars.

This customer utilized the best core technology, implementation practices, and field intelligence within the Rosemount 848T Wireless High Density Temperature Transmitter to positively impact their business. The customer decreased operation and maintenance costs because they no longer had to perform measurement rounds twice every shift. Environmental and safety risks were also reduced because the coke oven doors never had to be physically opened by an operator, exposing them to the emissions or intense heat. Lastly, the customer experienced an improvement in coke quality because it could reliably control the coke oven temperatures.

## RESOURCES

### Smart Wireless

<http://www.emersonprocess.com/smartwireless/>

### Rosemount Temperature

<http://www.emersonprocess.com/rosemount/products/temperature/index.html>

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