

Fuel efficiency improved, saving \$1.2 M per year with Micro Motion loop-powered 2-Wire ELITE

BENEFITS

- \$1.2 M a year of cost saving: one week ROI
- Green House Gas Compliance
- Better process consistency



APPLICATION

A major South Korean producer of liquid crystal display (LCD) materials generates and consumes large amounts of steam. In order to produce the steam, Natural Gas, combustion air and boiler feed water are supplied to multiple boilers. The natural gas is mixed with air and combusted to convert water to process steam. Energy usage represents a significant portion of the cost of LCD production, so the process of creating steam must be as efficient as possible.

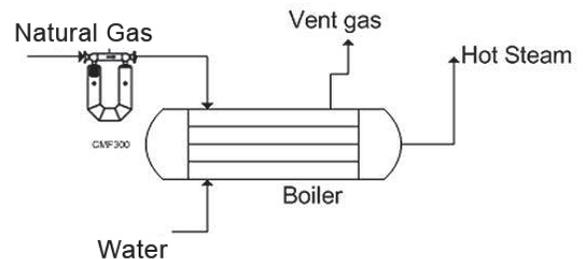
CHALLENGE

With their existing volumetric gas flow meter, which had a fixed PTz (pressure-temperature-compressibility) compensation, the customer noticed an inconsistency of steam production as well as a disagreement with downstream process requirements. They were spending substantial amounts of money on wasted energy through the process of steam production; therefore, there was an enormous need for cost reduction and a need to comply with greenhouse gas regulations.

SOLUTION

Micro Motion® offered 3" (80 mm) ELITE® model CMF300 sensors with loop-powered, 2-wire transmitters to replace the existing gas meters. The 2-wire option offered a lower installed cost due to the elimination of power wiring. Micro Motion ELITE meters were able to provide accurate natural gas feed rate control without the need for pressure, temperature and compressibility compensation. The customer was able to save 10% of their gas consumption due to a more accurate measurement, which improved boiler efficiency and reduced operating costs by \$1.2 M a year. This translates to a one week return

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CMF300 on natural gas combustion control.



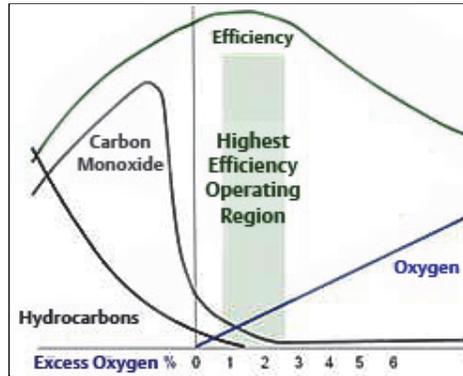
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on investment. The customer also benefited from lower maintenance, more consistent steam production for downstream processes, and was able to meet all greenhouse gas mandates.



Steam Boiler



Relationship between combustion air (oxygen), thermal efficiency and emissions.

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