

Covanta Energy Corporation Gains Valuable Insight into the Plant and Saves on Energy Costs with the Rosemount Compact Annubar Flowmeter

RESULTS

- Added a valuable measurement point that allowed for tighter plant control
- Minimized energy costs through low permanent pressure loss
- Simple installation saved on cost

APPLICATION

Measuring superheated steam

APPLICATION CHARACTERISTICS

3 inch line, 400°F

CUSTOMER

Energy-from-Waste Facility in Niagara, NY

CHALLENGE

Covanta, a major energy provider in the Northeast United States converts 2,250 tons of post consumer waste per day to steam for surrounding chemical plants and electricity for the New York State Power Grid. A new flow measurement was required for the liquid waste storage tank farm steam heating system. According to the plant engineer adding a flow measurement point to this superheated steam line would allow better tracking of this high value / high BTU steam usage which in turn would lead to increasing plant efficiency.

The process temperature and pressure are likely fluctuating and Covanta would like to capture these independently from the mass flow measurement.



The Compact Annubar Flowmeter added a valuable measurement while saving installation and energy costs.



Figure 1. Rosemount Compact Annubar Flowmeter installation.

ROSEMOUNT

For more information:
www.rosemount.com


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SOLUTION

Covanta was able to separate the existing piping at a flange joint and install a Rosemount Compact Annubar Flowmeter between the two existing standard ANSI raised-face flanges (see figure 1). This installation eliminated any pipe modifications such as pipe cutting or welding for the primary flow element, which saved Covanta about \$1,145. The compact design eliminates impulse lines, fittings, bracket and pipe stand for the pressure transmitter making the installation faster, saving about \$1,000 in labor and material and making the measurement more reliable by removing potential leak paths. The Annubar sensor includes an integral RTD temperature sensor so an additional pipe penetration was eliminated further reducing the installation cost. The 405 Compact Annubar Flowmeter included a 3051S MultiVariable transmitter with temperature and pressure compensation. As a result, more accurate flow measurement was achieved which resulted in greater process efficiency and optimization. Using a Rosemount 333 Tri-loop signal converter, the pressure and temperature measurement are captured in the control system along with the flow rate and flow total. Covanta estimates that the total installed cost savings for this measurement by using the Compact Annubar Flowmeter, compared to an orifice plate or standard averaging pitot tube was over \$2,000.



Figure 2: The Rosemount 3051SFC Compact Annubar Flowmeter.

RESOURCES

Emerson Process Management Power Industry

<http://www2.emersonprocess.com/en-US/divisions/power-water/Pages/powerwater.aspx>

Rosemount Annubar® Flowmeter Series

<http://www2.emersonprocess.com/en-US/brands/rosemount/Flow/DP-Flow-Products/Annubar-Flowmeters/Pages/index.aspx>

Rosemount 3051S® Transmitter Series

<http://www2.emersonprocess.com/en-US/brands/rosemount/Pressure/Pressure-Transmitters/MultiVariable-Transmitters/3051S-MultiVariable/Pages/index.aspx>

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