

Solvay Decreases Operations and Maintenance Costs With Innovative Level Technology

RESULTS

- Decreased Operations and Maintenance Costs
- Increased Evaporator Availability
- Minimized Capital Costs

APPLICATION

Brine level measurement on an evaporator

Application Characteristics:

50 – 60 °C (120 – 140 °F).

CUSTOMER

Solvay – Tavaux, France

CHALLENGE

A Solvay chemical facility experienced challenges optimizing the performance of its evaporator. As the brine temperature increased inside the evaporator, the salt would separate and form as crystals at the bottom of the vessel.

Solvay had been making the measurement using a differential pressure transmitter with impulse piping. The salt crystal formation routinely plugged the impulse piping going to the DP transmitter and resulted in a loss of measurement. A complicated water injection system was unsuccessfully used to try and purge the impulse piping of crystallized salt formations.

Loss of evaporator level measurement led to several negative business impacts. Solvay had to routinely take the evaporator offline so the maintenance staff could remove the salt buildup and purge the impulse piping. This resulted in lost production time and increased maintenance costs. Also, instrumentation engineers were challenged by finding a solution that minimized the capital costs necessary to optimize the performance of the evaporator. A capillary-based solution had also been considered, but Solvay ultimately decided against this due to the amount of capillary required would be in excess of 10 m (33 ft).



“The installation, start-up and the wiring of the ERS system was very simple. The ERS system has been installed for months, much to our total satisfaction.”

Jean-Marc Deconto
Solvay Engineer



SOLUTION

Solvay was able to easily retrofit the vessel with a Rosemount 3051S Electronic Remote Sensor system. The 3051S ERS™ system consisted of two pressure sensor linked together digitally. Differential Pressure was computed in one of the two sensors and sent back to the DCS. A tank spud remote seal was used on the high-pressure side transmitter located at the bottom of the vessel. The diaphragm of the tank spud was now flush with the inner-wall of the tank, eliminating the problem of having the salt crystals plugging in the impulse lines.

The 3051S ERS system enabled this customer to easily implement a solution to optimize the control of the brine evaporator. Since installing the ERS system, Solvay has not had a lost brine level measurement due to plugging. This has enabled higher levels of efficiency with the evaporator control, resulting in decreased operations and maintenance costs and increased availability. The automation staff also minimized the capital costs by choosing the 3051S ERS system over other capillary based systems.

RESOURCES

Emerson Process Management - Chemical Industry

<http://www.emersonprocess.com/solutions/chemical/>

Rosemount 3051S Series

<http://www.emersonprocess.com/rosemount/products/pressure/m3051s.html>

The Emerson logo is a trade mark and service mark of Emerson Electric Co. Rosemount and the Rosemount logotype are registered trademarks of Rosemount Inc. All other marks are the property of their respective owners.

Standard Terms and Conditions of Sale can be found at www.rosemount.com/terms_of_sale

Emerson Process Management

Rosemount Division
8200 Market Boulevard
Chanhassen, MN 55317 USA
T (U.S.) 1-800-999-9307
T (International) (952) 906-8888
F (952) 949-7001
www.rosemount.com

Emerson Process Management

Blegistrasse 23
P.O. Box 1046
CH 6341 Baar
Switzerland
Tel +41 (0) 41 768 6111
Fax +41 (0) 41 768 6300

Emerson Process Management

Emerson Process Management Asia Pacific
Private Limited
1 Pandan Crescent
Singapore 128461
T (65) 6777 8211
F (65) 6777 0947
Enquiries@AP.EmersonProcess.com

Emerson FZE

P.O. Box 17033
Jebel Ali Free Zone
Dubai UAE
Tel +971 4 811 8100
Fax +971 4 886 5465

ROSEMOUNT®

For more information:
www.rosemount.com


EMERSON™
Process Management