

Refinery Gets Tighter Control of Vapor Recovery System with Nitrogen Blanket Monitoring

RESULTS

- Tighter control of vapor recovery system
- Environmental protection against benzene leakage
- Manpower savings with reduced manual measurements



APPLICATION

Nitrogen blanket monitoring

CUSTOMER

Refinery in Eastern United States (U.S.)

CHALLENGE

State regulations require a refinery in the Eastern U.S. to monitor the nitrogen blanket on benzene tanks to prevent it from being vented into the atmosphere. Without proper pressure information, overpressure could occur resulting in leakage. Pressure control is especially problematic during transfer of the hydrocarbon between the three tanks. The amount of pressure that will create leakage is very small; overpressure is 1.7in H₂O, so the measurement must be very accurate. Underpressure creates a vacuum which will draw air into the tank, losing the nitrogen blanket and possibly creating undesired reactions, changing the composition of the hydrocarbon.

Wired solutions were not an option; the wire runs were long, making it expensive and time consuming to implement.

SOLUTION

Five Rosemount™ 3051S Smart Wireless high performance transmitters were installed on three tanks containing benzene to provide pressure monitoring of the nitrogen blanket. The Smart Wireless pressure transmitters were placed on the inlet and outlet of the nitrogen pad system (also called the vapor recovery system) and on each tank to monitor pressure. The information gathered from the wireless transmitters alerts of any leakage and provides valuable data to trace the problem. In fact, the pressure transmitters made an immediate impact by providing information to troubleshoot a bad valve.

“The greatest benefit is better control of the vapor recovery system to prevent overpressure and leakage to the atmosphere. Now we can more easily conform to the strict state environmental regulations.”

Plant Engineer

Refinery in Eastern U.S.

But most importantly, the transmitters provide information to optimally control the nitrogen blanket and prevent overpressure and leakage.

The plant can now conform more easily to the state's strict environmental requirements. There are manpower savings as well, since personnel no longer need to take manual pressure readings.

RESOURCES

Emerson™ Process Management Refining Industry

www2.emersonprocess.com/en-US/industries/refining/Pages/index.aspx

Rosemount 3051S Wireless Pressure Transmitter

www2.emersonprocess.com/en-us/brands/rosemount/pressure/pressure-transmitters/3051s-wireless/pages/index.aspx

Rosemount transmitters provide information to optimally control the nitrogen blanket and prevent overpressure and leakage.

Standard Terms and Conditions of Sale can be found at: www.Emerson.com/en-us/pages/Terms-of-Use.aspx

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