

CUSTOMER STORY

Chemical Manufacturer Explores New Technologies for Monitoring PRVs

Monitor and Accurately Report Emissions With Digital PRV Solutions from Experitec

Whether initiated by your HSE team, reliability engineers, or operations professionals, the need to understand the full breadth of accurate monitoring capabilities is now considered “part of the job”.

Relief valves are the last line of defense to mitigate catastrophic events, and their successful operation can mean the difference between life and death. They are designed to move material from a high pressure to a lower one. That lower pressure either vents to the atmosphere or is released as a flare that burns up the contents—emitting toxic chemicals closely monitored by the EPA.

CUSTOMER SITUATION

This particular customer approached Experitec with their unique situation relative to their emissions challenges and government reporting. While they were already using some wireless monitoring solutions, their interest was piqued when we started discussing our pressure relief valve solutions with their reliability engineering group, which was tasked with researching new technologies for monitoring PRVs and other equipment. This conversation quickly developed into a full-blown technology presentation at our Emerson manufacturing campus in Texas.

Team Emerson/Experitec Presents

These two Emerson-exclusive solutions were selected to be the most viable to address this customer’s priorities—accurate real-time data, little to no maintenance, and ease of reporting.

The solutions presented included Fisher™ FIELDVUE™ 4400 Digital Position Transmitters with Crosby™ J-Series Direct Spring Pressure Relief Valves, and Rosemount™ 3051 Coplanar™ Pressure Transmitters with Anderson Greenwood™ Pilot Operated Relief Valves.

Let’s explore the highlights of each.

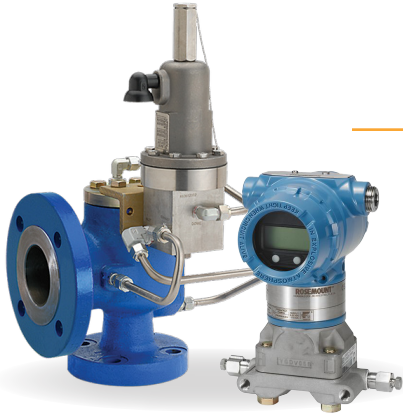


Data, All the Time, At Any Time

The Crosby J-Series has the advantage of providing an exact measurement of emissions at any given time. As a 'wired' solution it supplies data, all the time, at any time. Compared with a vendor-agnostic solution that just tells you 'if' the valve lifted (not how much), the FIELDVUE 4400 allows you to know—with confidence—the exact travel profiles at any given time. This enables very accurate emissions reporting, not over-reporting which could incur higher EPA fines. With this solution, you can also know if your valve has re-seated properly, allowing you to get ahead of maintenance.



Fisher™ FIELDVUE™ 4400 Digital Position Transmitters
With Crosby™ J-Series Direct Spring Pressure Relief Valves



Rosemount™ 3051 Coplanar™ Pressure Transmitters With
Anderson Greenwood™ Pilot Operated Relief Valves

A Modulating Solution Provides the Lowest Possible Emissions

In addition to all of the advantages of the 4400/Crosby J solution described above, the Anderson Greenwood solution will 'modulate' depending on the overpressure event – inherently emitting less. This is the most sustainable solution because we can determine the exact volumetric release into the atmosphere.

Anticipated Results

The ultimate result is to adhere to regulations and avoid unnecessary fines. Due to the inherent nature of relief valves, there is a potential for them to be damaged and not reseat, after lift. Actively monitoring them would provide a real-time alert of when that occurs which could have a significant financial and environmental impact.

Future Plans: Just Press the 'Easy' Button

The monitoring data can funnel up to an analytics program, called Plantweb Insight™, that generates the exact report that the EPA requires. By utilizing that data, it's possible to develop a root cause analysis of the release event and mitigate it in the future. This solution is currently being evaluated by this customer.

Experitec has served the industry for over 100 years, partnering with our customers to gain competitive advantages and unlock the hidden potential in their facilities. By optimizing operator and control performance, improving asset reliability, creating safer places to work, and helping clients reach their environmental and sustainability goals, Experitec is dedicated to achieving positive outcomes for the businesses we serve. Our unique long-term partnerships with Emerson and others enable us to connect customers with innovative technologies, subject matter expertise, and 24/7 lifecycle support and engineering services. As employee owners, the Experitec team is eager to partner with you on your next automation or reliability project in a positive, driven, and collaborative way. We have local offices in St. Louis, MO; Kansas City, MO; Memphis, TN; Calvert City, KY; and Decatur, IL; as well as warehouse and service locations in the surrounding areas.