



Application Note



Product 1267 Air Filter Regulator, 1451 Freezeless Control (Dump) Valve, and 1510/1540 Level Switches

Application Compressor Separator Level of Sour Media

Industry Oil & Gas

Challenge At a Natural Gas Treatment Project located in the Xinjiang Province, China, a compressor OEM customer needed a pneumatic level switch and pneumatic dump valve to maintain the level in a separator. They also needed four pressure regulators to control the supply pressure being sent to the pneumatic instruments through one of four branch pipelines. Lastly, they needed an electric level switch to be used as a high level alarm, signaling to the HMI through their PLC/DCS system. However, the application involves a very complex process media whose composition includes: 58.4% Methane, 4.51% Ethane, 2.76% Propane, and 2% Hydrogen Sulfide. To make certain all of the instruments would work safely in the process media, the customer required NACE MR0175 construction for all instrumentation to be used in the application.



Solution The customer reached out to many instrumentation manufacturers, but only SOR could provide a complete instrument package which would satisfy all of the customer's requirements. One of the manufacturers could only provide their standard product with a Urethane seal and was unable to ensure its corrosion resistance to H₂S. Similarly, another instrumentation manufacturer could only offer their standard seal of Buna-N which is also incompatible with H₂S.



To overcome the presence of Hydrogen Sulfide, the 1451 dump valve was provided with Neoprene o-rings rather than the standard o-ring material, Buna-N. The 1510 and 1540 used for the level switches included the NACE accessory as well as 316SS bodies and floats, to ensure they withstand corrosion from the H₂S. Additionally, SOR provided a single 1267AFR pressure regulator instead of four regulators, as just the one 1267AFR was able to properly regulate the supply pressure for all four branch pipelines, thereby reducing cost for the customer by eliminating the quantity of pressure regulators required.