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### **Application Case Study: Large Diameter Zero leakage, Triple Offset Zwick valve with 316 SS Hydraulic Automation Package**

A local municipal water district customer wanted to replace an existing cone valve at a control station. Genesis Systems had proposed a new 16" zero leakage rotary Zwick valve for long term reliable service. Because of the remote location of the valve there was no air or electrical supply available to drive the automation package. The only power source available to drive the actuator was city water in the line that the valve was controlling. The customer also wanted to modulate the valve with a remote 4-20mA signal. In the past, Genesis Systems had provided on/off automation packages with water as the power source using a combination of Versa solenoid valves to direct and control the water entering and leaving the cylinders of a Morin B or S series actuator. The twist was making it modulate. Genesis utilized a Westlock switch box on top of the Morin S all 316 SS actuator that included a 4-20mA retransmission module. We then contacted our panel manufacturer and explained that we needed him to build a system controller that would accept a 4-20ma signal and compare it to the output signal from the Westlock retransmission module. In order to make the second one match the first it needed to open or close specific relay contacts until the signals matched. After designing and constructing a small PLC control panel in a NEMA 4X enclosure we then tied the controls into two solenoid valves suitable for water service and looped in retransmission module. The small PLC, using the feedback from the retransmission module, drove the two solenoids open and closed thus allowing modulating control of the valve using water to drive the actuator.

The assembly was installed and commissioned with the assistance of Genesis Systems in the summer of 2003. The valve has been operating continuously since then with no issues.

If you would like additional information on this application or any of our other specialty valve or valve automation packages, please contact us at (972) 578-5105 or [sales@callgenesis.com](mailto:sales@callgenesis.com).