

Application Data

Water Treatment ♦ Washwater Discharge ♦ Control Valves



Engineers who specify pressure control valves for waste water treatment plants often call for Red Valve Control Pinch Valves, as in the following application.

In this Waste Water Treatment Plant, a pressure control valve is often needed on a standby pump to control discharge of wash water from the Washwater Pumping Station.

The main pump and the standby pump are rated to provide maximum flow at a constant pressure. A Pressure Sensor with integral transmitter is required to continually monitor system pressure. Under normal operating conditions, the pressure control valve is normally closed. After the surface wash shuts down, pressure from the discharge pump changes. The sensed line pressure is transmitted to a controller which, in turn, sends a signal to the positioner on the Control Valve. As the line pressure increases, the Series 5400 Control Pinch Valve opens. As the flow demand

increases, line pressure decreases, and the valve closes. This system constantly maintains the pressure needed to operate the system. From the pressure control valve, the system discharges to atmospheric pressure over a clear well.

Due to the potentially high pressure drop conditions, the pressure control valve needs to be able to withstand the effects of possible cavitation. Red Valve Series 5400 Control Pinch Valves, with their unique one-piece elastomer cone sleeve construction, are ideally suited for this application. The flow characteristics and pressure drop capabilities of a Cone Sleeve controls the flow and handles the pressure drop in the system. To assure cavitation does not occur, Red Valve includes as part of this package a TFO Variable Orifice to stage the system pressure drop by creating back pressure on the Control Valve. This setup fulfills the need of the Waste Water Treatment Plant, and is a proven cost-effective, maintenance-free solution.

