



Red Valve Company, Inc.

# Red Valve Company Case Study

## Large-diameter knife gate and pinch valve handle lime slurry

With one of its lime slurry holding dams rapidly approaching maximum capacity, a major power generator sought a solution that would keep it in compliance with state Department of Environmental Protection (DEP) regulations without requiring a great deal of maintenance or on-site operation.

For nearly 20 years, the company has operated a 250-foot-deep dam that serves as a collection point for lime slurry. Though the company expects to be able to use the dam for at least three more years, the slurry level has reached a point about five feet from the surface, presenting the risk of overflow in the event of a heavy rainfall, especially as the level continues to rise.



Large-Diameter Knife Gate Valve

A local engineer worked with the company to devise a plan that would ensure the amount of lime slurry discharging from the dam would never exceed the amount allowed by the DEP. The design included two valves to be installed at the dam's surface: a modulating valve to regulate flow and an isolation/safety valve to cease flow when necessary.

Given the plant's location 15 miles from the dam site, plant operators desired a hassle-free system that would allow for remote operation. Lime is a difficult fluid to handle given its tendency to harden quickly and scale on process equipment, so proper product selection was crucial to the system's success.

For modulation, a 20-inch manually operated pinch valve from Red Valve was chosen. The flexing action of a pinch

valve sleeve allows the valve to self-clean, breaking apart even dewatered lime. Furthermore, the all-elastomer construction of the sleeve resists corrosion while isolating the metal valve body from the process fluid, yielding a lengthy useful service life.

A 20-inch air-operated knife gate valve, also from Red Valve, was installed for isolation. The valve is hooked to a remote sensor and contains a fail-closed feature. When discharge capacity has been reached, the sensor sends a signal that closes the valve.



Large-Diameter Manual Pinch Valve



Two large-diameter valves from Red Valve will protect against overflow for the remainder of the dam's useful life.