



Single-Source System Provider

Water-to-Wire, Turbine-Valve-Controls Integration,
Motion & Control Engineered Systems

Design/Build of Special Gate & Valve Control Systems for Chicago Deep Tunnel Project

Controlling gates and valves that operate dams on America's waterways is one of the most important capabilities that distinguish Sorensen Systems from other system designer/builders. For the past 50 years, the company has developed a reputation for designing, fabricating, installing and servicing water, waste-water, and water to wire electrical control systems that control the flow of water for large scale municipal and industrial systems.

Recently, Sorensen Systems has developed a hydraulic and automation motion control system to operate a massive water control gate system at the 300 foot deep Thornton Quarry Reservoir near Chicago, Illinois. This enormous project, which is variously known as the Deep Tunnel Project and the Chicago Deep Tunnel, is a large civil engineering project that was built to reduce flooding in the metropolitan Chicago area and to reduce the harmful effects of flushing raw sewage into Lake Michigan by diverting storm water and sewage into a series of deep, large diameter tunnels and vast holding reservoirs.

Gates Regulate Water Flow

According to Mike Gardella, VP of Engineering and Manufacturing for



Major Engineering Project

The Chicago Deep Tunnel project has been in the planning and development phase for decades, but actually first came to life last Thanksgiving when for the first time it handled a 400 million gallon overflow of rain water successfully avoiding flood damage to the Chicago suburbs.

Sorensen Systems, the gates for this project regulate the flow of water through large underground tunnels constructed to slowly feed the stored water to the Calumet treatment facility before being released into the Cal Sag Channel. The four stainless steel roller gates, each 18 feet wide and 28 feet high, manufactured by Steel-Fab, Inc., of Fitchburg, MA, are powered by sophisticated Sorensen Systems Hydraulic Power units. The Programmable Logic

Controller (PLC) ladder logic that monitors the gates, controls motion and performs coordinated multi-gate control and sequencing was developed by Casco Systems of Cumberland, Maine, as a subcontractor to Sorensen Systems. Each of the four gates weighs approximately 100 tons and can withstand 300 feet of water pressure and isolate the tunnels from the reservoir when necessary.

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ISO 9001 Certified
UL 508A Panel Shop

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