

Dam & Reservoir Monitoring



The practice of managing water flow and water supplies with dams dates back many centuries. The reasons are many: concentrating the natural fall of a river at a given site, directing water from rivers into canals and irrigation/ water-supply systems, increasing river depths for navigational purposes, managing water flow during times of flood and drought, and creating artificial lakes or reservoirs for recreational use. Monitoring the results of the dam's effectiveness for a given objective is critical to its success.

Stream gauges and hydrologic monitoring stations are important to dam and reservoir maintenance. They assist in daily management and collecting long-term statistics for water resources planning. Besides the basic parameter of pressure transducers, bubbler gauges, and incremental shaft encoders, High Sierra Electronics can also assist with water temperature and water quality instruments, automated telemetry systems with data loggers for remote locations, and ultrasonic, acoustic level sensors.

In addition to spillways that ensure that the reservoir does not overflow the dam, "outlet works" are necessary so that water can be drawn continuously from the reservoir. Water withdrawn through "outlet works" may be discharged into the river below the dam, run through generators to provide hydroelectric power, or used for irrigation. The outlets consist of pipes or tunnels with intake ends near minimum reservoir level. These sluiceways utilize gates or valves to regulate the flow rate. High Sierra Electronics provides pump stations and gate control systems that automatically respond to changes in water level and flow conditions. It is also possible to incorporate telemetry links and optically isolated relay technology to monitor conditions from a base station or office.

Reliable automated systems require precise engineering.

High Sierra Electronics provides:

- ▶ Data Transmitter with Data Logging Capability
- ▶ Shelters or Environmental Enclosures
- ▶ Stage Measuring Sensors including:
 - Submersible PTs, Bubbler Gauges
 - Incremental Shaft Encoders, Flow Probes
 - UltraSonic & Acoustic Level Sensors
- ▶ Auxiliary Sensors including:
 - Water Temperature & Water Quality
 - Tipping Bucket Rain Gauges
- ▶ Data Recorders
- ▶ Batteries, Solar Panels, Cables, Antennas & Mounting Hardware
- ▶ Gate Controllers
- ▶ Remote SCADA

