Canyon Hydro

Project References: Energy Recovery Hydropower

Greeley Canal M300

Sacramento, CA

M300-60 Hydro Turbine
300 W Output
Canal Water Supply

The Greeley M300 Hydro Turbine System is installed at a pressure control station outside of Sacramento, California.

The water department needed a way to power a new control station without installing overhead poles or trenching underground power lines as doing so would require passing through residential property which would be both costly and obtrusive.

The M300 system was implemented to generate low voltage power from the water that would be passing throug the control valve. The turbine system is installed in parallel with the valve and charges a battery bank, providing reliable grid-free power to run site controls and SCADA system.

Vernon Hydro Park PAT

Portland, OR

Pump-As-Turbine
26 kW Output
Drinking Water Distribution System

Located in Portland, OR, the Vernon Hydro Park is a fixed flow system that was installed into an existing pressure reducing valve vault.

The 26 kW turbine operates as a PRV, reducing the pressure and generating power which is sold to the local utility. Since this installation is in a neighborhood it was important to provide a solution that was compact and unobtrusive to the nearby park play space.

Canyon performed civil and mechanical design, specified and supplied equipment, and developed a control system that met the water system's operational needs.

Libby ILT06

Libby, MT

In-Line Hydro Turbine
26 kW Maximum Output
Drinking Water Distribution System

The Libby ILT06 Hydro Turbine System is installed in a preexisting vault in Libby, Montana.

The system was placed inbetween two existing headers, paralleling the existing pressure reducing valves. Water is diverted through the turbine which reduces pressure year round generating up to 26 kW of power. Electrical output from the system is interconnected with the local utility via a net metering agreement.

Canyon designed, manufactured, and supplied the hydro turbine and provided the necessary appurtenances and control system.

Basalt Pelton

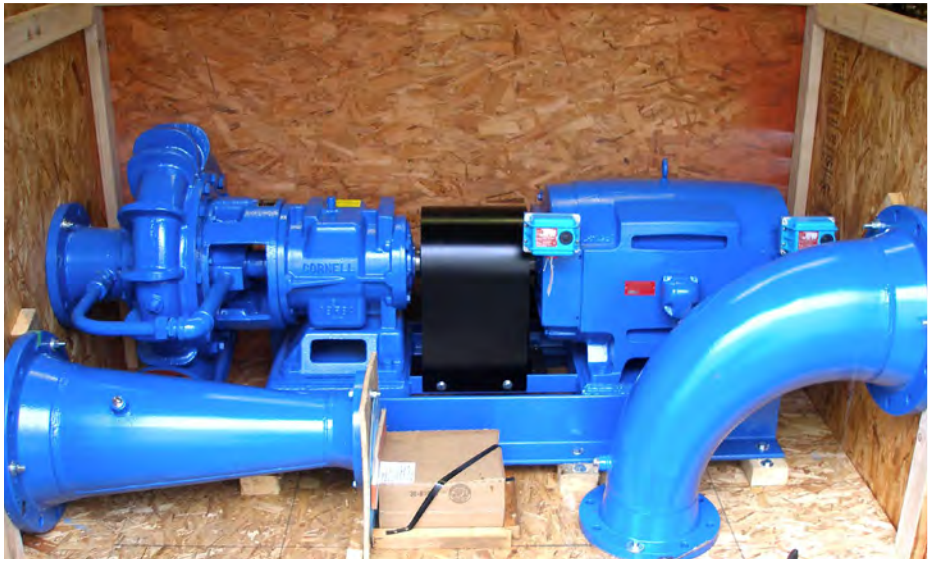
Town of Basalt, CO

Horizontal Shaft Pelton Turbine
41 kW Maximum Output
Municipal Water Supply

This small Canyon system breaks pressure in a raw water delivery system in the Town of Basalt, Colorado.

The turbine replaced an energy dissipation structure and feeds up to 41 kW to the local electrical utility grid. Water is delivered to the turbine from two separate intakes which collect flow from different elevations. This required flow across the turbine to be automatically adjusted based on a pressure transducer signal.

Canyon designed and manufactured the turbine to meet site and project requirements. Canyon also supplied the balance of the powerhouse's hydroelectric equipment.



Alice Street PATs

Pearland, TX

Dual Pump-As-Turbines
56 kW / 112 kW Output
Drinking Water Distribution System

This fixed flow hydro instillation is an energy recovery station for a water treatment plant in Pearland, Texas.

The dual turbines and control system generate a combined 112kW at peak capacity. Flows are diverted through a single turbine during low flow conditions, and both turbines are operated simultaneously during high flow conditions for year round power generation.

Canyon supplied the turbines and controls, assisted with plant layout, and executed FERC licecnsing & power purchase agreements.

Dewitt Springs Francis

Logan, UT

Horizontal Shaft Francis Turbine
137 kW Maximum Output
Municipal Water Supply

This horizontal shaft Francis turbine generates power in an existing pressure reducing vault on the City of Logan's primary water supply line.

The Dewitt Springs water supply line was replaced with larger diameter pipe during infrastructure improvements resulting in higher flows and consequently faster degradation of the existing pressure reducing valves. As a solution the turbine was installed to bypass the existing PRVs and generate power while extending the PRV lifecycle.

Canyon designed a compact system that fit within the available footprint, providing turbine, generator, hpu, valving, and control system.

M7W ILT12

Palmdale, CA

In-Line Hydro Turbine
218 kW Maximum Output
Drinking Water Distribution System

The M7W In-Line Series ILT12 Hydro Turbine is installed in an existing drinking water distribution vault in Palmdale, California.

The unit replaced a pressure reducing valve with a 210 kW turbine, generating electricity and revenue for the department of water at a location which previously dissipated the energy through a PRV.

Canyon hydro designed and supplied the turbine and controls, provided engineering support, and executed the necessary FERC licensing.

Pandora WTP Pelton

Telluride, CO

Horizontal Shaft Pelton Turbine
320 kW Maximum Output
Water Treatment Plant Intake

This Canyon Pelton turbine generates power for the water treatment plant in Telluride, Colorado.

The powerhouse is located inside the treatment plant, reducing pressure on the gravity fed water intake line and generating up to 320 kW. All of the treatment plant's power needs are met and excess power is sold to the local utility.

Canyon Hydro designed and manufactured the turbine, provided generator, controls and valving, and assisted in design for a fully operational power generation system.

Olivenhain Dual Francis

Olivenhain, CA

Dual Vertical Shaft Francis Turbines
350 kW Maximum Output
Drinking Water Distribution System

This dual Francis turbine system is installed on a raw water feed line for the water treatment plant in Olivenhain, California.

The double turbine arrangement reduces pressure at a tank fill location for the treatment plant, maintaining the tank's water level to ensure proper operation. By utilizing two turbines the plant generates efficiently over a wide flow range, providing power for the zero-waste treatment system and feeding excess power to the grid.

Canyon designed and manufactured the turbines, and provided the generators, controls, and valving.

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