



**TIM GERLER**  
**MECHANICAL ENGINEER**  
**PROJECT EXPERIENCE LIST**

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**Lingjintan Hydropower Project, China, Hunan Wuling Hydropower (1997–1998)**

Complete Governor Systems for nine (9) new Hitachi 31 MW Bulb Turbines. Served as Project Engineer and Mechanical Engineer, and was also involved during earlier sales phase of the project.

**Stave Falls Dam and Powerhouse, Canada, B.C. Hydro (1998-1999)**

Complete Governor Systems for two (2) new G.E. Hydro 50 MW Kaplan Turbines. Served as Mechanical Engineer, and was also involved during earlier sales phase of the project. Performed seismic calculations for all pieces of equipment supplied.

**Ham Thuan Hydropower Plant, Vietnam, Electricity of Vietnam (1998-2000)**

Complete Governor Systems for two (2) new Toshiba 154 MW Francis Turbines. Served as Project Engineer and Mechanical Engineer, and was also involved during earlier sales phase of the project. Scope included separate inlet valve hydraulic systems and also draft tube blow-down systems.

**Kali Gandaki "A" Hydropower Plant Rehabilitation Project, Nepal, Nepal Electricity Authority (1998-1999)**

Complete Governor Systems for three (3) new Toshiba 48 MW Francis Turbines. Served as Mechanical Engineer, and was also involved during earlier sales phase of the project. Scope included inlet valve controls. Performed seismic calculations for all pieces of equipment supplied.

**Blue Mesa Dam and Powerplant, USA, U.S. Bureau of Reclamation (2000)**

Refurbishment of two (2) Pelton Cabinet Governors controlling 43 MW Hitachi Francis Turbines. Served as Mechanical Engineer. Scope included new wicket gate distributing valves, distributing valves adapters, new pressure switches, speed signal generators (SSG) and wicket gate restoring systems.

**Morrow Point Dam and Powerplant, USA, U.S. Bureau of Reclamation (2000)**

Refurbishment of two (2) Woodward Mechanical Cabinet Governors controlling 86.7 MW Mitsubishi Francis Turbines. Served as Mechanical Engineer. Scope included new wicket gate distributing valves, distributing valves adapters, new pressure switches, speed signal generators (SSG) and wicket gate restoring systems.

**Crystal Dam and Powerplant, USA, U.S. Bureau of Reclamation (2000)**

Refurbishment of one (1) Woodward Analog Electric Governor controlling a 28 MW Litostrój Francis Turbine. Served as Mechanical Engineer. Scope included new wicket gate distributing valves, distributing valves adapters, new pump unloader valves, pressure switches, speed signal generators (SSG) and wicket gate restoring systems.

**Little Falls Hydroelectric Development, USA, Avista (2001)**

Replacement of one (1) Circa 1905 I.P. Morris Mechanical Governor controlling a 7 MW Dual Horizontal Francis Turbine. Served as Mechanical Engineer and Mechanical Designer. Scope included new high pressure HPU and distributing valve, new wicket gate servomotor and wicket gate restoring system.

**Product Engineer - Hydro Governor Products, Woodward Governor Company/GE (1999-2001)**

Distributing valves, pump unloader valves, speed signal generator (SSG).

**Glen Canyon Dam and Powerplant, USA, U.S. Bureau of Reclamation (2003-2004)**

Served as Proposal Manager on successful \$25,000,000 bid to refurbish eight (8) 169 MW Francis Turbines. Scope included new turbine runners, wicket gates, stationary wear rings and other equipment.

**Clyde T. Ellis Hydroelectric Generating Station, USA, Arkansas Electric Coop. Corp. (2004-2005)**

Refurbishment of three (3) Voest-Alpine Analog Electric Governors controlling 11 MW Bulb Turbines. Served as Mechanical Engineer. Scope included electrohydraulic interfaces (proportional valves), adapted to existing Voest-Alpine distributing valves, and oil filter assemblies.

**Carl S. Whillock Hydroelectric Generating Station, USA, Arkansas Electric Coop. Corp. (2004-2005)**

Refurbishment of three (3) Voest-Alpine Analog Electric Governors controlling 11 MW Bulb Turbines. Served as Mechanical Engineer. Scope included electrohydraulic interfaces (proportional valves), adapted to existing Voest-Alpine distributing valves, and oil filter assemblies.

**TXU Unit X, USA, TXU Energy (2005)**

Mechanical Engineer for steam turbine controls upgrade on Demag Delaval Boiler Feed Pump Turbine (BFPT).

**LYF, Mexico, Luz y Fuerza del Centro (2005)**

Mechanical Engineer for gas turbine controls upgrade on two (2) Pratt & Whitney Dual Fuel FT4 Twin Packs.

**J.E. Corette, USA, PPL Montana (2005-2006)**

Mechanical Engineering and mechanical design work for redesign of steam chest governor valve actuators on main-line Westinghouse steam turbine.

**Cane Run Generating Station, USA, Louisville Gas and Electric Company (2005)**

Mechanical Engineer for steam turbine controls upgrade on main-line Westinghouse steam turbine.



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**HELCO, USA, Hawaii Electric Light Company (2006)**

Mechanical Engineer for turbine controls upgrade on three (3) GE Liquid Fuel LM2500 gas turbines.

**Lagunillas 3, Venezuela, Petróleos de Venezuela S.A. (2006)**

Mechanical Engineer for gas turbine controls upgrade on one (1) Avon Gas Fuel turbine.

**Morgantown Generating Station, Unit 1, USA, Mirant Mid-Atlantic, LLC (2007)**

Mechanical Engineer for steam turbine controls upgrade on two (2) Westinghouse Boiler Feed Pump Turbines (BFPT). Scope included new high-pressure HPU and steam valve actuators. Also performed part of the mechanical design work.

**Arvah B. Hopkins Generating Station, Unit 2, USA, City of Tallahassee, FL (2007)**

Mechanical Engineering and mechanical design work for redesign of steam chest governor valve actuators on main-line Westinghouse steam turbine.

**Ernest C. Gaston Electric Generating Plant, USA, Alabama Power Company (2007)**

Mechanical Engineer for gas turbine controls upgrade on one (1) Pratt & Whitney Liquid Fuel FT4.

**Shoshone Hydroelectric Generating Station, USA, Xcel Energy (2007-2008)**

High pressure refurbishment of two (2) Circa 1908 I.P. Morris mechanical wicket gate actuators operating 7.2 MW Dual Horizontal Francis Turbines. Served as Mechanical Engineer and Mechanical Designer. Scope included new high pressure HPU and distributing valve, new wicket gate servomotor and wicket gate restoring system.

**Poatina Power Station, Australia, Hydro Tasmania (2008-2010)**

Governor replacement for two (2) 50 MW Pelton-Style Turbines (six units in powerhouse – involved in two units). Served as Mechanical Engineer and performed some of the mechanical design work. Designed special hydraulic pilot manifold and adapted standard distributing valve to perform hydraulic shutdown of the turbine system.

**Central Hidroeléctrica Santa Cruz, Peru, GCZ Ingenieros (2009)**

Complete Governor Systems for two (2) new 3 MW Horizontal Francis Turbines. Served as Mechanical Engineer and Mechanical Designer. Scope included inlet valve controls.

**E.B. Campbell Hydroelectric Power Station, Canada, SaskPower (2009-2012)**

Governor Replacement, with high pressure upgrade, for eight (8) Francis Turbines (6x34 MW, 2x42 MW). Served as Mechanical Engineer and performed some of the mechanical design work. Scope included new high pressure HPUs and distributing valves, new wicket gate servomotors and wicket gate restoring systems, speed sensing systems. Designed special hydraulic pilot manifold to comply with system shutdown scheme. This special pilot manifold was supplied on the distributing valves for all units.

**Island Falls Hydroelectric Power Station, Canada, SaskPower (2009-2012)**

Governor Replacement, with high pressure upgrade, for nine (9) Francis Turbines (4x14.2 MW, 3x10.4 MW, 2x0.9 MW). Served as Mechanical Engineer and performed some of the mechanical design work. Scope included new high pressure HPUs and distributing valves, new wicket gate servomotors and wicket gate restoring systems, speed sensing systems. Designed special hydraulic pilot manifold to comply with system shutdown scheme. This special pilot manifold was supplied on the distributing valves for all units.

**Middle Fork Powerhouse, USA, Placer County Water Agency (2010)**

Governor Replacement, for two (2) 61 MW, 6-Needle, Voith Impulse Turbines. Served as Mechanical Engineer and performed some of the mechanical design work. Scope included new deflector servomotors with position feedback devices and needle control valve assemblies with position feedback devices and oil filtering assemblies. Designed special manifold-style adapter for deflector distributing valve in order to fit the assembly in an existing restrictive enclave within the turbine pit.

**Ralston Powerhouse, USA, Placer County Water Agency (2010)**

Governor Replacement, for one (1) 79 MW, 6-Needle, Voith Impulse Turbine. Served as Mechanical Engineer and performed some of the mechanical design work. Scope included new deflector servomotors with position feedback devices and needle control valve assemblies with position feedback devices and oil filtering assemblies. Designed special manifold-style adapter for deflector distributing valve in order to fit the assembly in an existing restrictive enclave within the turbine pit.

**Glen Ferris Hydropower Project, USA, Brookfield Renewable Power (2010-2011)**

Governor Replacement, with high pressure upgrade, of two (2) Woodward Governor Gateshaft Governors controlling 1.8 MW Francis Turbines. Served as Mechanical Engineer and performed some of the mechanical design work. Scope included new HPUs and wicket gate servomotors with position feedback devices.

**Chester Lake Hydro Plant, USA, Metlakatla Power & Light (2010-2011)**

Governor Replacement, with high pressure upgrade, for one (1) 1.1 MW Pelton-Style Turbine. Served as Mechanical Engineer for HPU design.

**Purple Lake Hydro Plant, USA, Metlakatla Power & Light (2010-2011)**

Governor Replacement, with high pressure upgrade, for three (3) 1.25 MW Francis Turbines. Served as Mechanical Engineer for HPU design.



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**Mayo B Dam and Powerplant, Canada, Yukon Energy (2010-2011)**

Served as Mechanical Engineer for HPU design.

**Mugica Hydropower Station, Mexico (2010-2011)**

Served as Mechanical Engineer for HPU design.

**Tyee Lake Hydroelectric Project, USA, Southeast Alaska Power Agency (2010-2011)**

Mechanical Engineering and design of spring-loaded follower device for Impulse Turbine needle valves. Original OEM mechanical feedback device had been previously replaced with electronic feedback transducer. Additional provisions were needed to ensure the electronic feedback device followed the needle valve precisely. Symmetrical pattern of three (3) posts with three (3) springs provided a rigid structure and stable spring loading.

**Paugan Hydroelectric Generating Station, Canada, Hydro Quebec (2011-2012)**

Mechanical Engineering and design of distributing valve controlet cylinder (valve servomotor), the interface to the existing Woodward Governor Type "A" Actuator distributing valve spool (plunger), and a special distributing valve pilot manifold to comply with system shutdown scheme. Designed custom tooling for making required site modifications and installation of the new controlet cylinder. Created detailed instructions for the site demolition, modification and installation process. Wrote Factory Acceptance Test (FAT) procedure and supervised testing. Wrote Site Acceptance Test (SAT) procedure

**Yards Creek Pumped Storage Hydroelectric Project, USA, First Energy Generation Corp. (2011)**

Governor refurbishment for three (3) Pelton Mechanical Governors controlling 151 MW Pump Turbines. Mechanical Engineering and mechanical design work for various scope items, including oil pump/motor replacement and addition of new pump unloader valve and interfacing plumbing.

**Snoqualmie Falls Hydroelectric Project, USA, Puget Sound Energy (2012-2013)**

Extensive refurbishment of multiple vintage hydro turbines and ancillary systems. Contributed to project by checking drawings, formally documenting hydraulic design calculations for customer submittal, preparing factory acceptance test (FAT) procedures, site acceptance test (SAT) procedures, site installation instructions, and O&M manuals.

**Terror Lake Hydroelectric Project, USA, Kodiak Electric Association (2012-2013)**

Complete Governor Systems for one (1) new Andritz 11 MW, 6-Needle, Impulse Turbine (new Unit 3). Served as Mechanical Engineer for project and also performed mechanical design work involved with converting existing water-operated inlet valve actuating cylinder (operated by penstock water) to one operated by pressurized hydraulic oil.

**Product Manuals - Hydro Governor Products, L&S Electric (2007-2013)**

Created and updated numerous product manuals including those for distributing valves, pump unloader valve, pilot control manifolds and servo control manifolds.

**Standard Hydraulic Power Unit (HPU) Development, L&S Electric (2008-2011)**

Participated as Mechanical Engineer and Mechanical Designer in Standard HPU development project.

**Hydro Turbine Governor Product Development, Gerler Engineering & Design, Inc. (2013-2014)**

Pilot control manifolds for operating main distributing valves in hydro turbine governor applications.

**Little Falls Hydroelectric Development, USA, Avista (2013-2014)**

Wrote mechanical portion of technical procurement specification for complete high pressure replacement of four (4) governor systems controlling 7 MW Dual Horizontal Francis Turbines. Original equipment was Circa 1905 I.P. Morris Mechanical Governors which had previous modifications.