In today’s competitive market, hydropower is the most cost-effective method to quickly provide dispatchable electricity to the grid. Operators can release water to rapidly ramp the hydro generators to help meet peak demands and maintain grid stability.

After the initial construction and startup investment, the operating costs of a hydroelectric plant are minimal compared to other generation resources. As the fuel for the hydro plant is renewable, so is the equipment that keeps the plant operating. Modernizing legacy hydro plant automation can improve your ability to dispatch generated power, extend the life of your plant, and improve the plant’s reliability and availability. However, as with any large undertaking, modernizing automation of your hydroelectric or pump storage power plant is not without challenges.

Emerson Solutions for your Hydroelectric Power Plant
Emerson Process Management Power & Water Solutions has a rich history of energizing the power industry with new and revolutionary ideas. Our portfolio includes decades of experience providing automation solutions that help mitigate the costs and risk associated with operating and maintaining hydropower assets.

>> Why Emerson and Ovation for your hydroelectric power plant?

- Leverages industry expertise gained from hundreds of installations on all types of power generation units, including hydroelectric, coal-fired, cogeneration, combined cycle, and biomass facilities
- Provides control strategies proven in thousands of MW’s worth of hydro generated power
- Offers a comprehensive project approach that encompasses architecting, implementing, and managing your hydroelectric automation solution
- Supports a variety of user interface requirements through an open, flexible architecture
- Communicates to field devices through wired or wireless networks
- Provides access to plant data from remote locations
- Disseminates plant information to facilitate efficient commercial operation
- Ovation Process Historian supports NERC CIP security requirements
- Provides full-service, long-term support and training
- Offers membership to our global Users Group for ongoing and open communication between Emerson and its customers
- Employs a scalable architecture that compliments both large and small scale hydro plants
- Expandable system to incorporate future processes
- Allows integration of the entire generating fleet — including hydroelectric plants, other renewable energy generation facilities such as biomass plants and wind farms, and traditional coal and gas-fired generating units — for dissemination of information throughout your organization to help meet dispatch or regulatory requirements

For more information visit www.EmersonProcess-PowerWater.com

Control the Flow
Ovation™ Distributed Control and SCADA Solutions for Hydroelectric Power Plants

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For over a century, Emerson Process Management Power & Water Solutions has been using the world’s most advanced technology to help customers control critical generation processes, increase plant efficiencies and megawatt production, and realize long-term O&M savings.

Key to our automation solution for hydroelectric plants is the Ovation™ expert distributed control and SCADA system. Ovation was specifically designed for the power generation industry to increase unit performance, provide safe and reliable operations, and centralize power plant control and monitoring applications. Install Ovation as part of your automation strategy to gain higher levels of integration that will reduce costs, enhance operations, facilitate information sharing, and support your ability to meet regulatory and commercial objectives.
Ovation™ Distributed Control and SCADA Solutions for Hydroelectric Power Plants

Ovation is a product of Emerson’s five decades of experience in process control for the power generation industry. Ovation utilizes commercially available, off-the-shelf technology to provide a powerful and secure architecture while allowing your system to easily progress with rapidly advancing computer technologies. Ovation provides a seamless interface with the most widely adopted bus standards allowing you to incorporate smart device technologies into your process. And Ovation’s embedded advanced algorithms and proven industry-specific control routines assure that you can optimize your operations to maximize efficiency, productivity, and profitability.

Coordinated control of all your hydropower operations through the Ovation system contributes to improved unit stability, responsiveness, and thermal efficiencies; tighter overall control of plant operations; and a more streamlined view of key plant parameters.

Ovation’s SCADA server makes important information from remote controllers readily available to the Ovation control system and desktops of supervisors and managers throughout your organization — enabling them to make faster, more effective operating decisions.

**Ovation Hydro Station**
Emerson offers a scalable option with a condensed footprint for reliable control and monitoring of small hydro power plants. The Ovation Hydro Station is a cost-effective, all-inclusive package consisting of a single cabinet containing standard Ovation components such as network interfaces, controllers, I/O, and a PC loaded with operating, engineering, and historical software functions.

Emerson’s flexible solution for small hydroelectric plants allows the Hydro Station to act as a stand-alone system, yet is powerful enough to be integrated with multiple Hydro Stations installed at other plants along the run-of-the-river for efficient water resource management. The Ovation Hydro Station can also securely interface with the control room of a larger power plant or a local dispatch center for remote operation.
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Key Features of the Ovation Distributed Control and SCADA Solution for Hydro Plants

- Uses standard algorithms designed specifically for the power generation industry
- Provides fault-tolerant data transmission through redundant communication schemes
- Employs a distributed architecture to increase reliability
- Is easily expandable to meet future growth demands
- Utilizes a single, system-wide relational database to coordinate and maintain data
- Executes remote start, stop, or tagout of equipment to minimize site visits
- Implements automatic supervisory shutdown to protect assets
- Performs online diagnostics to quickly isolate and address problems
- Readily disseminates plant information to facilitate efficient commercial operation

Ovation Hydro Station for Small Hydroelectric Plants

Ovation Hydro Station for Large Hydroelectric Plants

Ovation/SCADA Architecture for Large Hydroelectric Plants
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