

Electrical and Industrial Solutions for Hydropower Plants

The American Recovery and Reinvestment Act (ARRA) emphasizes the importance of clean, renewable generation. Hydro plants have never been more important in America's energy landscape.

Hydropower plants are an important source of electricity. Many hydropower plants in service for 60 or more years are being rehabilitated or upgraded with innovative technologies and more efficient methods of producing power, ensuring trouble-free operation for decades to come.



Powering Business Worldwide

No one matches Eaton's expertise in assessing and performing upgrades, supplying complete system solutions, and addressing potential performance issues before they occur. Look to Eaton for solutions that blend our latest technologies with our extensive knowledge of the maintenance and operation requirements of hydropower plants.

Eaton is ready to serve the electrical and hydraulic needs of rehabilitating or upgrading hydropower plants and other valuable assets.

Eaton solutions for hydropower plants include:

- GearGard® remote monitoring
- Power Xpert® architecture meters and software
- Class 1 equipment reconditioning
- FlashGard® motor control centers
- Arc flash safety products and services
- Remote racking devices for circuit breakers
- Large custom cylinders and reconditioning
- Custom hydraulic power units for gate and turbine control systems
- State-of-the-art balance of plant auxiliary fluid power systems
- Auxiliary bearing lubrication and backwash filtration systems
- Wicket gate cylinders
- Turbine governor hydraulic power units, including accumulators and pressure vessels



ACT NOW!

Eaton Recovery Hotline

1.888.ETN.1USA (1.888.386.1872)

www.eaton.com/recovery



Our industry-leading products and services are designed to deliver:

- Energy Efficiency
- Reliability
- Safety
- Cost Effectiveness
- EISA 2007 Solutions

1 Solve problems sooner

Hydropower plants operate in high-humidity conditions that make equipment failures more likely. Eaton can provide the capability for remote monitoring of critical failure indicators, such as humidity, overheating, dust, contamination and floor water; while also providing trending analysis resulting in maintenance and upkeep recommendations.

- Remote monitoring
- Partial discharge continuous monitoring

4 Monitor use in real time

Often, older systems include equipment from several manufacturers. Metering and software let managers monitor energy consumption in real time, even across equipment from different manufacturers.

- Energy/power meters and monitoring software

2 Extend useful life

Many hydropower plants use aging equipment that's well beyond its anticipated useful life. Older equipment is more likely to fail, and replacement parts can be expensive and hard to find. Eaton's extensive selection of aftermarket solutions can extend the useful life of equipment by replacing aged components.

- Medium voltage vacuum replacement breakers
- Low voltage air replacement breakers
- Motor control center bucket replacements
- Class 1 equipment reconditioning

5 Enable precise movement

Many hydropower plant upgrades require either new or rehabilitated gate-control systems to ensure precise, automated gate positioning. Eaton offers the capability to design state-of-the-art, advanced technology gate and turbine control systems that enable automated control while improving long-term reliability; or rehabilitate existing equipment to original factory specifications.

- Custom hydraulic power units
- Custom cylinders, cylinder repair
- Advanced cylinder rod-positioning system and coatings

3 Improve user safety

Employers need to keep workers safe from arc flash hazards. Eaton can help protect personnel by specifying the right equipment, conducting arc flash safety training and properly labeling equipment.

- Arc flash hazard analysis and training
- Arc Flash Reduction Maintenance System™
- Remote racking devices for circuit breakers
- Arc fault motor control centers

6 Provide reliable operation and control

Changing outdated turbines with more efficient designs requires synchronized replacement of hydraulic control and filtration systems. Eaton provides turnkey, hydraulic system solutions that provide reliable operation and control of advanced, high-output turbines.

- Custom hydraulic power units
- Wicket gate cylinders
- Slip-in cartridge and proportional valves
- Auxiliary bearing lubrication and backwash filtration systems