PROJECT PROFILE

UPGRADE

Supplied automated data acquisition equipment, software and services to upgrade the Dam Safety Instrumentation System (DSIS)

HARDWARE

Replaced existing hardware with Canary Systems MLDAQ hardware

MULTILOGGER SUITE

MLSuite® provides a robust data collection and data management platform for the new ADAS data, as well as automated and manually collected historical data.

FLEXIBLE CHARTS

Easily plot data from any time range with a few mouse clicks allowing for automatic generation of supporting FERC reports

AUTOMATED IMPORT

Integration of automated import of online rain gage measurements

ROCKY MOUNTAIN PUMPED STORAGE HYDROELECTRIC PLANT

OVERVIEW

The **Rocky Mountain Hydroelectric Plant** is a pumped-storage power plant located 10 miles northwest of Rome in the U.S. state of Georgia. It is named after Rocky Mountain on top of which the plant's upper reservoir is located. The plant has an installed capacity of 1,095 megawatts and is owned by both Oglethorpe Power and Georgia Power.

As a pumped-storage power plant, it uses two reservoirs to produce electricity and store energy. The upper reservoir stores water (energy) for periods when electricity demand is high. During these periods, water from the upper reservoir is released down to the power plant to produce electricity. Water from the power plant is then discharged into the lower reservoir. When energy demand is low, usually at night, water is pumped from the lower reservoir back up to the upper reservoir. The upper reservoir can be replenished in as little as 7.2 hours. The same turbine-generators that are used to generate electricity reverse into pumps during pumping mode.

The upper reservoir covers 221 acres and is formed on **Rocky Mountain** above the lower reservoir by a 120-foot tall and 12,895-foot long continuous earth and rock-fill dam. The upper reservoir lies at an elevation of 1,392 feet while the lower reservoir is at 710.5 feet. The lower reservoir covers an area of 600 acres. It impounds Heath Creek and is created by two embankment dams and a 120 feet tall gravity/ embankment composite dam. The gravity section features a spillway with two Tainter gates. Two other auxiliary reservoirs are located adjacent to the lower reservoir and serve to provide additional water during periods of drought, and are also used to sustain wildlife and provide for recreation.

WHAT WE DID

Canary Systems® has been tasked with supplying automated data acquisition equipment, software and services to improve and upgrade the Dam Safety

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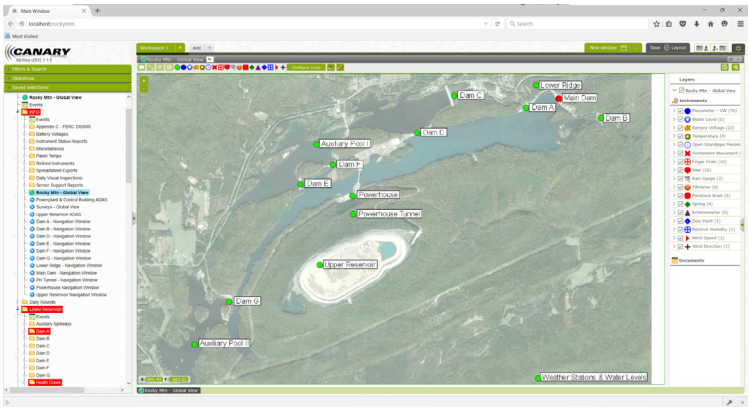
ROCKY MOUNTAIN PUMPED STORAGE HYDROELECTRIC PLANT

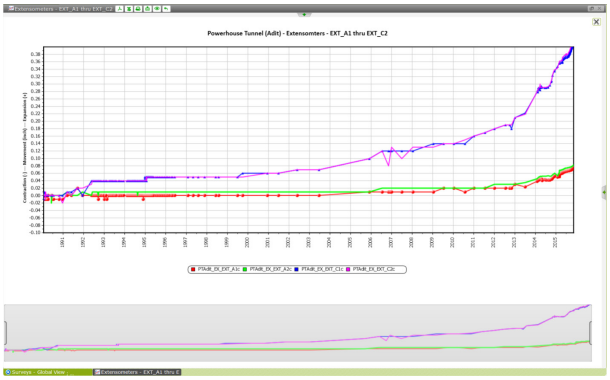


MLWeb global project and site overview

Instrumentation System (DSIS) at the Rocky Mountain Hydroelectric plant. This included building the project database as well as aggregating historical data: manually collected measurements including weirs, settlement monuments, and standpipes, as well as automated piezometer data.

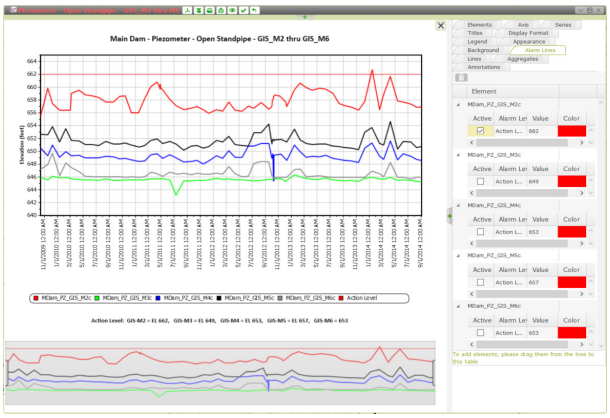
We replaced the existing DAQ hardware with **Canary Systems®** hardware, consisting of a combination of Campbell Scientific dataloggers and vibrating wire interfaces integrated with new multiplexers and radio/fiber optic communication devices to improve the performance of the Automated Data Acquisition System (ADAS).

A total of 3 dataloggers were installed - in the Power Plant, the Control Building at the Main Dam, and the Control Building at the Upper Reservoir. The dataloggers utilize existing battery power systems with AC charging as well as TCP/IP connections at each of these locations for power and network connectivity.



Extensometer Quick Chart, showing over 25 years of historical and current (automated) data

The dataloggers collect data from the various sensor locations via fiber optic or radio. Each sensor location has a multiplexer and AVW200 Vibrating Wire Interface to facilitate communication with the existing vibrating wire sensors and to allow for system expansion in the future. A 4th datalogger was installed to monitor weather conditions including wind speed and direction, barometric pressure, humidity and temperature, as well as rainfall.



Quick chart with correlated piezometer data, with alarm line configuration panel

Canary Systems® personnel conducted several days of field support to finalize the system installation and conduct a system startup to assure the ADAS was functioning properly. This also meant organizing the **MultiLogger®** configurations for each system to include Zero Readings, Gage Factors and Offsets for all channels.

To facilitate datalogger programming, automated collection of data from the dataloggers, and database management, Canary Systems installed its MultiLogger Suite software on a Windows Server at the plant. **MLSuite®** provides a robust data collection and data management platform for OPC's automated and manually collected historical data. This includes integration of up to 2 online rain gage measurements, either using USGS or NOAA resources, through scripting to automatically retrieve data points, automated import, calculations and charts.

WHO TO CONTACT

- *If you have questions about this project, or would like to obtain project reference contact information, please contact:*
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