

PROJECT PROFILE



Bad Creek Hydro Dam Safety Instrumentation Monitoring System Salem, South Carolina

Client:

Duke Energy Corporation

An existing Automated Data Acquisition System (ADAS) for monitoring the dam safety instrumentation at the Bad Creek Hydro Project had become obsolete and difficult to maintain. As a result, Engineered Monitoring Solutions was asked to configure and install a replacement ADAS. The Bad Creek Hydro Project, located near Salem, South Carolina is a 1,065 megawatt pumped storage facility. The project began generating electricity in 1991 and is Duke Energy's largest hydroelectric facility.

The monitoring system for the project includes a network of 11 Measurement and Control Units (MCUs) and a Network Monitoring PC.

The ADAS monitors 82 piezometers, 1 earth pressure cell, 1 penstock pressure, 3 flumes, 2 weirs and a rain gage. The system is designed to collect historical and real-time data for on-going evaluation and performance monitoring of the dams and dike. Data collected at the Network Monitoring PC is imported into the Duke Energy Pi database via their wide area network. The Pi database is used to archive the collected data and create reports required by the Federal Energy Regulatory Commission (FERC).



Eight of the MCUs located on the Main Dam, West Dam and East Dike communicate via UHF radio links either through a repeater MCU or directly with a gateway MCU located near the Network Monitoring PC. A ninth MCU in the powerhouse communicates with the gateway MCU via fiber optic cable.