Inyo County Department of Public Works Pump Operation Redundancy and SCADA Improvements Project

Project Description

Inyo County owns and operates three community water systems serving the unincorporated towns of Laws, Independence and Lone Pine. The combined population served by the water systems is approximately 2,000 people. The Lone Pine and Independence water systems are supplied by water from a well and gravity head storage tanks. A well and hydro pneumatic storage tank supplies the Laws community water system. Transducers located at the tanks send high /low signals to the Supervisory Control and Data Acquisition System SCADA system to operate the pumps. Currently, there is no redundancy to activate the pumps should the transducers or SCADA system fail. Laws, Independence and Lone Pine are Disadvantaged Communities. Ratepayer revenues for Independence and Lone Pine cover Operations & Maintenance (O&M) but are insufficient to build capital reserves for upgrades. The County has had limited success raising the water rates. The Laws water system supplies water for only 14 ratepayers. Monthly revenues are too small to operate the system in the black. Inyo County subsidizes the system operation and maintenance costs.

The goals of this project are to increase the overall reliability of the water systems' ability to start the pumps when necessary, provide redundancy to operator notification in the event of an emergency, increase the variables monitored by the SCADA system, install a communications line to increase the variables monitored, and to achieve a degree of energy savings and efficiency by shifting the pump-on times to the lo peak or base peak periods from the hi peak period. This project will install secondary pressure sensor switches on each water system as a back up to energize and operate the well pumps and maintain system pressure in case of transducer or SCADA system failures. Secondary Auto-dialers are also included for operator notification redundancy. The project also will upgrade the SCADA systems to include capability to program off-peak pumping capability to save energy.

Overall system reliability and efficiency will be facilitated by increased variable monitoring, installing a communications line, shifting the pump-on times to the low peak or base peak, adding secondary pressure sensor switches on each water system as a backup, as well as auto-dialers and programming capabilities. The need is to eliminate as much as is practical the current malfunctioning of pump starts and SCADA auto dialer malfunctions we experience sometimes frequently.