STATEMENT OF QUALIFICATIONS

Water & Wastewater January 2017

Firm Profile

SCI Automation & Electric is a national leader in the design and implementation of full turn-key automation systems. Since 1996, our customized solutions have consistently delivered measurable results that improve the bottom line for our clients.

These benefits are derived from a unique combination of employee and management experience. SCI combines field-tested Process Control Engineers with more than 100 years of electrical expertise, improving the coordination from grounding through programming. With SCI, in addition to the data, controls, and alarming, which improve operational efficiency, safety, and the lifetime value of your equipment, you also have access to strategies that have won multiple state and national awards for energy efficiency and water conservation. Most recently, we are proud to have helped Centerville, UT receive the **2016 National Award for Energy Efficiency** from the **Rural Water Association**. To win the award, Centerville demonstrated **an 80% reduction** in water system energy costs.

SCI provides 24 hour service and support, and has offices strategically placed throughout the country. Our current staff of 21 includes Automation Engineers, Programmers, IT & Network Engineers, Calibrators, Cathodic Protection Testers, Radio Technicians, Tower Climbers, and Licensed Electricians.

"SCI has been very responsive, and considerate of the needs of faculty, staff, and students. Each installation has been neat and professional, which is something I value greatly with my background in commercial wiring"

- Bart Peacock, Energy Controls Manager, Dixie State University

SCADA Integration in Ivins, UT

Ivins, UT

- **7** integrators in **10** years were unable to get SCADA working.
- SCI had existing equipment programmed and communicating in **4** days.
- Saved the city more than $200k they had budgeted for a new system.

Operator at an HMI Screen

True Integrators

SCI is proud to be a group of true systems integrators. We have intentionally avoided setting up exclusive service or supply agreements with manufacturers that would limit our ability to recommend what is truly best for our clients. Because we service multiple industries, the volume of material that we install has allowed us to obtain **manufacturer-best pricing without exclusivity agreements**. Our experience with multiple manufacturers, hardware and software languages, and individual instruments allows us to succeed at getting systems online and functioning at peak efficiency when others have failed.

Riverton City

SCI installed a full turn-key culinary and secondary water SCADA system. ClearSCADA was chosen for the HMI system, and we incorporated IP radios throughout the city that allows **redundant ClearSCADA servers in separate office buildings to access the remote sites**. We also setup all of the remote locations with master/slave programming. This allows the entire system to be non-dependent on the HMI system. It will run on its own closed-loop radio system ensuring that tanks and reservoirs are filled in the event of any computer equipment malfunction.

Roosevelt City

Full **turn-key** culinary water SCADA system including fully optimized HMI system with truck bulk water loading station, wells, tanks, reservoirs, booster, PRV's, at 10 remote locations.

Duchesne City

Full **turn-key** culinary and waste water SCADA system including lift stations, tanks, reservoirs, PRV, sewer ponds, and swimming pool chemical injection, with 6 remote locations.

Funding

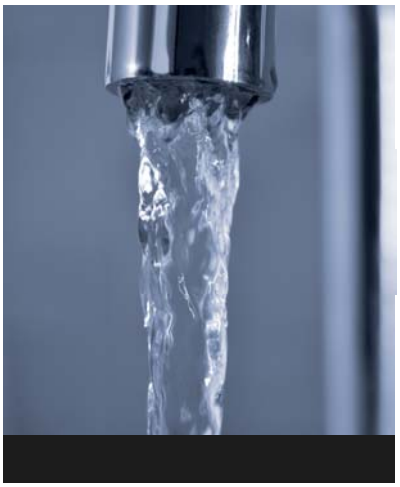
SCI Automation has established relationships with state agencies establishing valuable experience assisting municipalities obtain grants and zero interest loans for water and wastewater system infrastructure and improvements.

The Division of Drinking Water was recently subjected to a legislative audit which found that the state was in desperate need of more data, and more accurate data supporting the long-standing minimum source capacity of 800 gallons per day per connection.

As a result of the audit, the Division has been highly motivated to use all the resources at their disposal to help pay for SCADA improvements that will provide them with the data they need.

Of particular importance and priority to the Division are SCADA systems that are capable of providing data on Peak Day Usage per connection.

From experience, smaller projects under $100k are more likely to qualify for grants, and larger projects are typically assigned zero percent interest loans. To date, none of our applicants have been turned away because of lack of funding.



Relevant Project Experience

SCI has completed electrical and SCADA system evaluations, implementations, and upgrades for a broad cross-section of Industries, including the following customers:

- EP Energy
- Newfield Exploration
- Linn Energy
- Moffat Ouray Canal
- Conoco Phillips
- BP
- Kinder Morgan
- Ashley Valley WTF
- Centerville, UT
- Dixie State University
- Ivins, UT
- Roosevelt, UT
- Duchesne, UT
- Richfield, UT
- Discovery Natural Resources
- UBATC
- Scofield Reservoir SSD
- Pleasant Grove, UT
- Hanna Water & Sewer
- Johnson Water District
- US Oil Sands
- IWM
- Utah State Hospital

Reservoir and pump station in Centerville, UT

Centerville City, UT

Centerville City has been a culinary water client since 1992, and we continue to help develop and improve their processes. They have a full turn-key Wonderware SCADA system that monitors and controls both chlorine and fluoride injection, VFD's, flow meters, and pressure transducers at multiple remote locations including tanks, reservoirs, wells, and pump stations.

Best in State and Best in the Nation

We have enjoyed working with a very analytical mind in a Public Works Director, and together have employed multiple strategies, wining **Best in State** for Resource Efficiency two out of the last three years, and **Best in the Nation** for Energy Efficiency in 2016.

Centerville has aggressively pursued the implementation of these improvement strategies to progressively reduce costs, improve operational flexibility, increase redundancy, prepare for emergencies, and increase system resource efficiency. Many of these strategies have been implemented as solutions to specific issues within the system, but by implementing these "fixes" with a long-term, strategic perspective, many other system improvements have been realized, and the problems and peculiarities of the system have been turned into strengths.

If the city used no power cost saving strategies at all, its annual power cost would be as much as $318,936. After the implementation of these strategies, the city's water production power costs in 2016 were less than $63,000, an **80% reduction**.

Randy Randall, Public Works Director: (801) 292-8232, rrandall@centervilleut.com

Discovery Natural Resources

While DNR is a oil & gas exploration and production company, their SCADA system is documented here because the principle product it manages is water.

Approximately **21 billion barrels** of produced water are generated each year in the United States from about 900,000 oil & gas wells, the equivalent of 2.4 billion gallons per day. Production water is picked up at the well and delivered to treatment and disposal facilities.

Truck Unload/Offload

A **scripted process** on weather-proof touch screens was created to allow drivers to easily populate required information such as company name, truck number, PIN number, etc. before allowing unload. Data is **tracked and pushed** into multiple reports organized in **hourly, daily, company, and volume basis**. Origin of the load is also tracked, and all the data is pushed into accounting software for billing. Tank levels are monitored and prevent overflowing, spills, and will automatically shut down if any unsafe parameters are met.

Oil & Water Separation

Utilizing dual tank level radar transmitters, valves, and pumps, this system transfers water from unload/surge tanks through a settling or wash tank where oil residue is separated from the “salt” water or brine using gravity segregation forces. Some facilities pump water through 3-phase separators and heated treaters. Clean oil floats to the top and water is removed from the bottom of the tank.

Water Treatment & Disposal

After the separation process, the resulting water is pumped through additional filters and **automated chemical injection processes** before being pressurized to more than 1,000 PSI for delivery to a disposal facility. The system dictates the speed of the main line pump to maintain desired pressure and flow set points. These parameters will also shutdown the process if unsafe variables are detected.

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Contact Us

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Relevant Expertise

- PLC/RTU Platforms: Allen Bradley, Siemens, Schneider Electric / Modicon / SCADAPack
- HMI/OIT Development
- Level monitoring & control: Pressure / Ulttrasonic / GWR / Float
- Solar/Mechanical, thermal power sources/ Battery backup power systems
- Hatch Intrusion alarms
- Pumps, VFD’s, valves
- Chlorine/Fluoride meter monitoring & control
- Radio path study, equipment installation, maintenance, repair, interference troubleshooting and networking
- Field implementations and site surveys
- Alarm notifications and call-out, data trending
- Data push to multiple applications, i.e. SQL, production, reporting
- Customer training in systems and technology
- Plunger lift systems
- Oil, H2O, gas measurement
- Down hole pump diagnosis
- Treater/separator monitor and control
- Pipeline measurement and flow control
- Gas plants and compressors