MAJOR FUNCTION
This is technical work ensuring reliable and effective function and automation of the City's Supervisory Control and Data Acquisition (SCADA) systems. Work involves computer configuration, systems installation, maintenance and repair, and the support of various technical equipment, systems and services, including installing, wiring, repair/replacement, and configuration of programmable logic controllers (PLC's), remote terminal units (RTU's), hubs, switches, routers, Ethernet and fiber optic networks and radio telemetry/communications equipment. Work also includes the need to drive, operate and work from a 65-foot boom/bucket truck. An employee in this position may serve in the role of project manager and exercises technical independence in determining work methods and procedures. Work is performed under general supervision of the SCADA Engineer and is reviewed through observation, achievement of goals and objectives, conferences and written reports.

ESSENTIAL AND OTHER IMPORTANT JOB DUTIES

Essential Duties
Supports SCADA operations and system integrity and ensures the highest operational reliability and system availability on a 24hour/7days a week basis. Maintains the Master Station (including personal computers [PC]), expansion units with communications and multiple display hardware, high-speed modems and failover hardware) and associated remote stations connected by high-speed data links. Provides SCADA server/PC support and troubleshooting. Implements and adapts new hardware, software and security measures, as required for North American Electric Reliability Council (NERC) compliance with current operations. Configures and codes control programs, documentation forms, flow charts and diagrams to adapt the utility's operations to electronic monitoring and to meet emerging operational needs of system requirements. Prepares test data, performs testing, modifies and revises programs. Evaluates control programs to assure system integrity. Selects and installs (or arranges installation of) equipment and software at both central and remote areas. Makes recommendations for upgrading equipment on an on-going basis. Ensures that system performance meets dependability targets and all outages or problems are analyzed for cause, trends, and duration. Ensures successful rollout of products and services. Monitors process, testing, and implementation of system upgrades and enhancements. Serves as a point of contact on technological issues and searches for ways to improve existing methodology and recommend new technology as it becomes available. Determines causes of operating errors and take corrective actions. Confers with vendor representatives, console operators and utility system administrators to gather information for system improvement, expansion and strategic planning purposes. Develops knowledge for system database, application, hardware, RTU and field devices and communication protocol, in accordance with SCADA evolution. Oversees the work of contractors installing new equipment or working on the City's infrastructure. Performs related work as required

Other Important Duties
Prepares and reviews system documentation. Monitors remote stations via the SCADA system, as required. Assists with engineering design, technical review and installations of the Utility's capital improvement projects related to, or interfacing with, SCADA systems. Resolves computer, operating system (OS) and OS patching problems within procedural guidelines. Specifies and purchases fiber optic cable, communications and power cable, and other wide area network (WAN) components. Conducts field inspections and maintenance to ensure safety and integrity of equipment, as needed. Performs related work as required.

DESIRABLE QUALIFICATIONS

Knowledge, Abilities and Skills

Knowledge with installing and maintaining servers and workstations. Knowledge of configuring and maintaining Human Machine Interfaces (HMI). Knowledge of NERC Critical Infrastructure Protection (CIP) requirements dealing with SCADA. Knowledge of computer applications concerning supervisory control equipment and communications. Knowledge of communications protocols such as Modbus, BSap, DNP3, TCP/IP, etc. Knowledge of the Institute of Electrical and Electronics Engineers (IEEE) and International Society of Automation (ISA) standards applicable to process control and SCADA networks used in the utility industry. Knowledge of cyber security practices and principles. Thorough knowledge of the application of power system control databases, applicable database design techniques and the principles and practices of applications and implementation. Knowledge SCADA application to the transmission and distribution of electrical power. Knowledge SCADA application to water production and distribution; wastewater collection and treatment; and natural gas retail distribution. Knowledge of electronic computer programming principles, techniques and concepts. Ability to apply computers to the real-time monitoring and control of the electric power system with the use of advanced algorithms. Skill in programming and configuration of intelligent electronic devices (IED's), PLC's and RTUs using ladder logic and International Electrotechnical Commission (IEC) programming languages, including ladder logic, defined function block, sequential flow chart, or any subsequent industry standard equivalent. Ability to learn new methods, procedures and operations. Ability to develop working relationships essential to successful job performance, project completion, sharing of information, and cross-training. Skill in using PCs running Windows. Skill in mentoring daily work activities of others. Ability to instruct and train system users in the use and care of system software and hardware. Ability to understand and effectively carry out verbal and written instructions and the ability to give clear and concise verbal and written instructions. Highly developed skill in the use of computers and the associated programs and applications necessary for successful job performance.

Minimum Training and Experience
Possession of an associate's degree or a two-year technical or trade school certificate of completion in electronics or electrical engineering technology; computer technology, networks or information systems; fiber optics or a related field, and four years of technical experience in the installation, programming, configuration, maintenance and/or support of supervisory control and data acquisition (SCADA) systems, intelligent electronic devices (IEDs) or electronic communications protocols; or equivalent combination of education/training and experience.

Necessary Special Requirement
Must possess a valid Class E State driver's license at the time of appointment.

At the department director's discretion, a valid Class B CDL State driver's license may be required for designated positions only.

Successful candidate in designated positions may be required complete a personnel risk assessment consisting of an identity verification and seven-year criminal history screening (minimum) and maintain satisfactory clearance for continued employment.

Established: 09-10-11
03-13-13*
09-11-18
11-16-20