

LEAD CONTROLS ENGINEERING SPECIALIST

JOB DESCRIPTION

Classification Responsibilities: A Lead Controls Engineering Specialist performs skilled electronic/electrical installation, maintenance, troubleshooting, and repair work related to the electrical/instrumentation equipment used to operate and monitor the City's water, wastewater, and gas systems and acts as a Lead to Controls Engineering Specialists involved in the design, installation, maintenance, and support of the electrical and instrumentation systems which control and monitor systems for gas, water, electric and wastewater facilities including substations, wells, pump stations, lift stations and plants. Lead duties include: primary reviewer on projects including day-to-day site inspections; scheduling/assigning work to staff, timekeeping and work coordination, training, final reviewer of project design review, and provides technical field knowledge in electrical codes required for projects. In addition, provides input in preparation of written performance appraisals and assists the Controls Engineering Administrator with the budget preparation. Lead Controls Engineering Specialist duties include: installing, programming, calibrating, and commissioning various electrical/instrumentation devices including variable frequency drives, level transmitters, flow meters, radios, power monitoring equipment, and Programmable Logic Controllers (PLCs); developing electrical and electronic system designs, plans, specifications, wiring schematics, and basic one-line diagrams; assisting in the start up, commissioning, and troubleshooting of the process control system including correcting problems with communications, field process variables, or design engineering; coordinating and acquiring materials and equipment to repair or install at facilities; acting as technical lead on new projects including new gas, water, wastewater facilities, substations, pump stations, plants, etc.; reviewing drawings, plans, specifications and submittals from the City's Engineering Department or a consultant for utility projects; enforcing compliance with City standards and technical specifications for utility projects; providing technical and inspection assistance to the City of Mesa Construction Inspectors; assisting Design Engineers or engineering companies with design criteria for process controls and electrical distribution projects; performing calibration and verification for Arizona Corporation Commission on gas regulator stations; certifying calibration for Inter-Agency flow meters; and creating, modifying, and updating AutoCAD and/or Visio drawings for new and existing projects. Other duties include: diagnosing and troubleshooting single-mode and multimode fiber optic networks and fiber splicing with a fusion or mechanical splicer on Citywide projects. Incumbents may be subject to call out and after-hours standby duty for emergency repairs, and must be willing to work overtime as required. An employee in this class is required to use appropriate safety equipment and follow safety procedures in performing assignments. This class performs related duties as required.

Distinguishing Features: A Lead Controls Engineering Specialist performs all of the duties required of the Controls Engineering Specialist and is distinguished from this class by the lead supervisory responsibility. This class receives general supervision by the Controls Engineering Administrator through conferences, reports, observation and results achieved. This class is subject to DOT Pipeline and Hazardous Materials Safety Administration (PHMSA) drug and alcohol testing as outlined in 49 Code of Federal Regulations (CFR) Part 199. This class is FLSA nonexempt.

QUALIFICATIONS

Employee Values: All employees of the City of Mesa are expected to uphold and exhibit the City's shared employee values of Knowledge, Respect, and Integrity.

Minimum Qualifications Required. Any combination of training, education, and experience equivalent to graduation from an accredited college or university with an Associate's Degree in Electrical, Electronics, or related field. Good (1 - 3 years) experience as a journey-level electrician. Considerable (3 - 5 years) experience in the instrumentation field involving the installation, maintenance, calibration, and repair of electronics solid-state controls, instrumentation, data communications, and related equipment. Good (1 - 3 years) experience in a lead or supervisory capacity.

Special Requirements. Must possess a valid Arizona Driver's License by hire date. Must successfully complete operator qualification training administered by the Energy Resources Department within 18 months of hire/promotion into the class and must retain qualification throughout employment in order to work on the City of Mesa's natural gas system.

Preferred/Desirable Qualifications. Experience with medium voltage switchgear and starters; installation of fiber optics; variable frequency drives; and AutoCad or Visio is highly desirable.

ESSENTIAL FUNCTIONS

Communication: Communicates with the public, City employees, and vendors in order to identify problems, areas of improvement, and to coordinate solutions. Works courteously with customers in situations that require tact and diplomacy in order to identify and resolve service issues. Presents ideas clearly, both verbally and in writing, to share acquired knowledge, negotiate outcomes, discuss alternatives, and address problem/conflict situations. Communicates and coordinates work activities with other work units to ensure timely completion of new installation constructions.

Manual/Physical: Reviews the work of and provides direction to Controls Engineering Specialists involved in performing electronic/electrical installation, maintenance, troubleshooting, and repair work related to the electrical/instrumentation equipment used to operate and monitor the City's water, wastewater, and gas systems including: primary reviewer on projects and day-to-day site inspections; scheduling/assigning work to staff, timekeeping and work coordination, training, final reviewer of project design review, and provides technical field knowledge in electrical codes required for projects. Provides input in preparation of written performance appraisals and assists the Controls Engineering Administrator with the budget preparation. Reviews the work products of others to ensure compliance with standard operating procedures of National Electrical Code Articles 70 and 70E and Process Controls standards developed for ensuring consistency throughout the Utilities facilities. Monitors and/or evaluates information and work related conditions to determine compliance with prescribed safety, or National Electrical Code Articles 70 and 70E standards. Distinguishes colors to work with electrical wiring installations. Uses various power tools to repair electronic/electrical controls and instruments, and installs electronic telemetering devices, ultrasonic sensors, sequential controls, alarms, and digital computer interfaces. Tests and calibrates electronic equipment. Uses lap-top computer to troubleshoot, document, modify, or correct programs for PLC's, radios, etc. Documents new installations and modifications on "as-built" instrumentation. Modifies or updates drawings in AutoCad

or Visio. Diagnoses and repairs equipment failures and malfunctions utilizing schematic diagrams and test equipment, which includes: oscilloscope, frequency counter, and signal microcomponent level. Reads schematics and blueprints to trace complex electronic and electrical circuits. Operates a half-ton pickup truck requiring a standard Arizona Driver's License in order to drive to different job sites to inspect equipment and make repairs. Detects traffic sounds when working near moving traffic, backup warning devices when working around moving equipment, and sirens. Uses common hand tools, such as hammer, screwdriver, handsaws, strippers, etc., to test instruments to install parts or repair electrical/instrumentation equipment. Cleans drills, saws, and grinders. Works with contact cleaners in cleaning parts. Moves wire of less than 20 pounds for short distances (20 feet or less). Moves dirt and debris to install underground conduit and wire. Measures distances in installing equipment and parts. Reads electrical schematics, wiring diagrams, construction plans, and blueprints. Works in small, cramped areas, at elevated levels, and in a variety of weather conditions while repairing equipment. Works around high voltage and toxic chemicals utilizing specialized non-routine protective equipment in order to complete job assignments (by assignment). Operates a personal computer (PC), and uses software (example: word processing, databases, spreadsheets, graphics packages, and emulation, etc.) to prepare detailed and technical reports for use by others including management, coworkers, vendors, or other City employees. Meets scheduling and attendance requirements.

Mental: Prioritizes and assigns work to personnel and prioritizes own work performing electrical/instrumentation installation and repair. Coordinates work activities with other City departments. Develops departmental policies and procedures, i.e. Specifications and Standards. Conducts research and analyzes data to provide solutions for process control issues as they relate to the water treatment/distribution, wastewater treatment/collection processes. Assists in preparing the R.C. budget by providing input to the Controls Engineering Administrator for needed funding for equipment repairs or replacement. Provides input in preparation of written performance appraisals. Prepares, reads, and interprets schematics and blueprints to perform review of Capital projects and perform electrical/instrumentation installation and repair. Estimates labor and material costs from blueprints or other work plans. Diagnoses cause(s) for malfunction or failure of electronic controls and instruments. Analyzes data collected regarding functions of the SCADA network and recommends actions to enhance performance. Evaluates the development of changes in communications, including protocols and topologies, within the SCADA operating system. Comprehends and makes inferences from written material. Learns job-related material in classroom and on-the-job training settings.

Knowledge and Abilities:

Knowledge of:

principle and practices of employee supervision and training;
operating system(s) and communication protocol(s) that are used in the City's computing environment;
safety procedures and practices applicable to working with electrical and electronics;
solid-state electronics theory and practice;
the installation, testing, maintenance, calibration, and repair procedures for various electronic telemetering devices; and
general electrical theory.

Ability to:

work in a lead capacity over Controls Engineering Specialists involved in the design, installation, maintenance, and support of the electrical and instrumentation systems which control and monitor systems for gas, water, electric and wastewater facilities including substations, wells, pump stations, lift stations and plants;

program ladder and IEC 1131 languages;

install, configure, and commission variable frequency drives, magnetic flow meters, radios, and solid state electronics;

test and calibrate electronic equipment;

operate personal computer;

operate AutoCAD;

repair electronic controls and instruments; and

establish and maintain effective working relationships with management and coworkers.

The duties listed above are intended only as general illustrations of the various types of work that may be performed. Specific statements of duties not included does not exclude them from the position if the work is similar, related, or a logical assignment to the position. Job descriptions are subject to change by the City as the needs of the City and requirements of the job change.

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INCREMENTS 81-200

PAY GRADE: 51

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