

ELECTRICAL CONTROLS SPECIALIST

JOB DESCRIPTION

Classification Responsibilities: An Electrical Controls Specialist performs skilled Electrical/Instrumentation installation, maintenance, troubleshooting, and repair work related to electrical equipment up to 15kv and instrumentation equipment used to operate and monitor the City's water, wastewater, and gas systems. 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 must be willing to work overtime as required (by assignment). In addition, an incumbent may be subject to after-hours stand-by duty for emergency repairs. 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: This class may involve hazardous conditions typically associated with high voltage, natural gas, raw sewage, toxic chemicals, laser beams and confined work areas. This class receives general supervision from a Lead Controls Engineering Specialist who reviews completed work for conformance and compliance with installation, maintenance, and repair specifications and standards. This class is FLSA nonexempt.

QUALIFICATIONS

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

Special Requirement(s). Must possess a valid Arizona Driver's License by hire date. Must meet the qualifications to wear a tight fitting respirator by passing a medical evaluation in accordance with CFR 1910.134 by hire or promotion date and must maintain certification (by assignment to Water Treatment Plants). 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.

Substance Abuse Testing. 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.

Preferred/Desirable Qualification(s). 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: 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 laptop 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. Uses common hand tools, such as handsaws, strippers, etc., to install parts and repair 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 (e.g., 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: Prepares, reads, and interprets schematics and blueprints. 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:

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:

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.

Revised 8/15

TO/fl

CS4664.DOCX

PAY GRADE: 48

EEO-SCW

NDOT SAFETY-No

SECURITY-No

NDOT RANDOM-No

DOT SAFETY-Yes

CDL-No

RESP-Yes (By Assignment)

IND-7539

JOB FCTN-TRA

SWORN-No

INCREMENTS 81-200