

SAN BERNARDINO MUNICIPAL WATER DEPARTMENT CLASSIFICATION SPECIFICATION

TITLE: SENIOR ELECTRICAL AND INSTRUMENTATION TECHNICIAN

DATE: 11/13/2007

JOB CODE: 21850

FLSA STATUS: NON-EXEMPT

UNIT REPRESENTATION: GENERAL

Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed within the job.

DUTIES SUMMARY

Under general supervision, performs a variety of journey-level skilled electrical/instrumentation and/or electrical maintenance work; performs construction, installation, maintenance and repair of water utility and water reclamation motors, panels, switches, regulators and lighting systems; performs inspections, installations, maintenance and repairs of instruments, controllers and related equipment; works in and around low voltage (600V or less) panels and circuits; works under the appropriate applicable provisions of the National Electric code, approved plans and specifications and standard industry practices; maintains Supervisory Control and Data Acquisition (SCADA) system's Remote Terminal Units (RTUs), Programmable Logic Controllers (PLCs) and associated control equipment and systems; performs training and provides assistance to Electrical and Instrumentation Technician personnel as required; performs related work as required.

DISTINGUISHING CHARACTERISTICS

This class is the journey level technical class in the electrical series. In addition to performing the duties of the lower level class, incumbents are responsible for training lower level personnel, inspecting the work performed by contractors, performing more complex troubleshooting and diagnosis of electric and electronic problems and developing solutions to complex electric and electronic problems.

EXAMPLES OF DUTIES

The following duties are typical essential duties for positions in this classification. Any single position may not perform all of these duties and/or may perform similar related duties not listed here.

- Provides courteous and expeditious customer service to the general public and City department staff;
- Constructs, installs, maintains, tests and repairs electrical panels, instrumentation and control and electrical circuits utilized at the Water/Wastewater Utilities facilities.
- Troubleshoots and repairs instrumentation systems associated with remote terminal units (RTU) and programmable logic controllers (PLC);
- Performs installations, repairs, modifications, calibrations, and preventative maintenance on a wide variety of complex digital, analog, programmable and other auxiliary equipment used in the collection, transmission and treatment of water/wastewater;

- Required to wear respiratory protective equipment to include Self Contained Breathing Apparatus (SCBA);
- Reads and interprets electrical and instrumentation plans, specifications, blueprints, sketches, wiring diagrams and schematics;

QUALIFICATIONS

Any combination of education, training, and experience that would likely provide the knowledge, skills and abilities to successfully perform in the position is qualifying. A typical combination includes:

Knowledge of:

- Principles, theory and practices of electricity, electronics, pneumatics, hydraulics and mechanics as they apply to maintenance and repair of equipment and instruments commonly found in a water/wastewater treatment facility;
- Industrial electricity and safety practices, precautions and procedures;
- Applicable codes and regulations;
- Tools, materials, methods and practices of electrical, electronic and instrumentation trade;
- Methods, materials and equipment used in chlorine system installation and repair;
- Symbols and standard practices used in the preparation of process and instrument flow diagrams;
- Electrical installations and maintenance in water utility or reclamation facilities including low voltage (600V or less) electrical circuit;
- Shop mathematics applicable to the electric trade;
- Instrumentation calibration concepts and procedures;

Ability to:

- Recognize, analyze and define a variety of routine to complex mechanical, electrical, chlorination and instrumentation problems without close supervision;
- Correct instrument operating problems and make recommendations for system modifications to meet operational needs without close supervision;
- Operate power tools, hand tools and light equipment used in electrical activities; operate specialized test equipment such as milliamp and millivolt calibrators, multimeters, power supplies and oscilloscopes;
- Perform a wide range of skilled water utility or reclamation electrical installation, wiring, repair and maintenance work on low voltage circuits in accordance with safety standards;
- Read, understand, interpret and apply moderately complex materials including technical manuals, drawings, specifications, layouts, diagrams, blueprints, plans and schematics;
- Keep accurate records;

- Recognize, report and/or correct unsafe working conditions;
- Understand and carry out routine to complex instructions furnished in oral, written, or diagrammatic form;
- Make arithmetical calculations involving fractions, decimals and percentages with speed and accuracy;
- Communicate clearly and concisely, both orally and in writing;
- Establish and maintain effective relationships with those contacted in the course of work;
- Be physically capable of entering permit required confined spaces and wearing Self Contained Breathing Apparatus (SCBA) equipment;
- Operate an atmospheric tester for entry into confined spaces;
- Wear protective respiratory equipment to include SCBA and personal escape respirator;
- Operate a vehicle observing legal and defensive driving practices;
- Maintain a driving record that meets vehicle code standards and is acceptable to the Department and its insurance carrier;
- Respond to call-out or emergencies as required; handle emergency situations as directed.

MINIMUM QUALIFICATIONS

An employee within this classification may be designated as a “key responder” and as such shall be required to respond to non-normal working hour emergency operational conditions.

Education and Experience:

High School graduation or G.E.D. equivalent and four (4) years of journey level experience in electrical systems and electronic instrumentation installation, maintenance, and repair including at least one (1) year of experience with programmable logic controllers (PLCs).

Or

Trade School graduation and two (2) years of journey level experience in electrical systems and electronic instrumentation installation, maintenance and repair including at least one (1) year of experience with programmable logic controllers (PLCs).

Or

Military Technical School in Electrical/Electronics graduation and two (2) years of journey level experience in electrical systems and electronic instrumentation maintenance and repair including at least one (1) year of experience with programmable logic controllers (PLCs) .

And

Certificates: Possession of a valid California Class “C” driver’s license required upon application. For out-of-state applicants, a valid driver’s license is required and a valid California Class “C” driver’s license is required within ten (10) days of appointment (CA Vehicle Code 12505c).

NECESSARY SPECIAL REQUIREMENTS

Must be able to respond to call—outs or emergencies including being on—call.

Must be clean shaven or trimmed facial hair in order to properly use personal respirators and SCBA equipment. Must pass a respiratory medical exam and be physically able to wear SCBA equipment. Must be able to work in enclosed spaces while wearing protective clothing under extreme temperatures and hazardous environments.

PHYSICAL TASKS AND ENVIRONMENTAL CONDITIONS

Work involves exposure to potential physical harm, hazardous chemicals and infectious disease. There is frequent need to stand, sit, stoop, walk and perform other similar actions during the course of the workday. Employee accommodations for physical or mental disabilities will be considered on a case-by-case basis.

Incumbents require sufficient mobility to work in a variety of environmental and weather conditions, transport materials and supplies weighing up to 100 pounds, work in boom truck with lift of 30 to 60 feet and work to heights of 150 feet. Must be able to see in the normal visual range with or without correction. Must be able to hear in the normal audio range with or without correction. Employee accommodations for physical or mental disabilities will be considered on a case-by-case basis.

CAREER LADDER

From: Senior Electrical and Instrumentation Technician

To: Electrical and Instrumentation Leadperson

Job Description:

BOWC Approved: 10/02/2007

CSB Approved: 11/13/2007

Testing Standards:

Open/City Promo/Supplemental Application: