JOB DESCRIPTION

Coachella Valley Water District February 17, 2011

TITLE: Electronic Technician II SECTION: Electronics Shop

DEPARTMENT: Trades and Support SRN 38

REPORTING RELATIONSHIP:

Reports to: Electronics Supervisor, Assistant Electronics Supervisor

Supervises the following positions: Not applicable. May provide project and/or technical leadership to Electronics Technician I, and/or Electronics Technician Trainee.

DEFINITION: Under general supervision to perform installation, repair, calibration, and maintenance work on the district's supervisory control and data acquisition (SCADA) system, automatic control systems, radio systems, telephone systems, security systems, flood warning systems, and do related work as required. Familiar with the district's domestic, flood control, irrigation, and sanitation distribution and collection systems. Assists with the direction and training of the electronic technicians and may be assigned planning duties and scheduling of jobs and job assignments.

ESSENTIAL FUNCTIONS:

1. Provides good customer service to co-workers and the district’s outside customers. Tactfully and courteously deal with the customers to help resolve problems to their satisfaction and in a timely manner while paying attention to details and using time skillfully.

2. Systematically troubleshoots system, equipment, and component malfunctions using effect-to-cause reasoning techniques to make timely and effective repairs.

3. Consistently practices good preventive maintenance measures to minimize failures and maintain reliable operation of systems, equipment, and components.

4. Analyzes problems and takes prompt responsible corrective action to strive to provide uninterrupted service to co-workers and the district's customers and minimize damage by responding to the most critical system malfunctions first.

5. Performs professional installations and calibrations and proficiently repairs and maintains system, equipment, and components including but not limited to local and remote terminal units, programmable controllers, variable drives, automatic control circuits, process controllers, liquid level controllers, level and pressure transducers, flow and position transmitters, microwave radios, multiplex and data communications equipment, base and mobile radios, tone and pulse duration transmitters and receivers, security equipment, solar power equipment, flood warning equipment, gas detectors, audio and video equipment, telephone and voice mail equipment, cellular telephone, and underground cable.

6. Effectively utilizes test equipment including but not limited to analog multimeters, digital multimeters, oscilloscopes, frequency selective level meters, frequency counters, oscillators, cable locators, communications and spectrum monitors, wattmeters, logic probes and pulsers, component testers,
pressure calibrators, telemetry monitors, Windows based personal computers.

7. Reads and understands schematics and wiring diagrams.

8. Calculates and edits database constants for levels, pressures, gate positions, valve positions, pump status and other equipment and site alarms monitored by the SCADA system to display and archive accurate information.

9. Proficiently operates the SCADA system consoles to adjust flows, water levels, and pressures for the domestic, flood control, irrigation, and sanitation distribution and collection systems by remotely operating gates, pumps, and valves to test and maintain reliable SCADA system operation.

10. Communicates effectively with others both orally and in writing. Attempts to understand before judging or making decisions. Coordinates all work being performed with the control operator and all others that may be affected by it. Accurately logs maintenance actions and inputs into computer system for future review. Accurately accounts for all labor and equipment usage on time cards and mileage forms. Develops and maintains up-to-date preventive maintenance schedules for all equipment.

11. Safely and effectively uses hand tools and power tools including but not limited to hammers, screwdrivers, wrenches, drive sockets, saws, tuning tools, soldering irons, drills, stud guns, and rotary hammers.

12. Understands and adheres to the rules and regulations of the Federal Communications Commission regarding the operation and maintenance of radio transmitters and receivers.

13. Practices work habits that demonstrate positive achievement of the following: productivity, organization, judgment, initiative, safety, quality, care of tools and equipment, housekeeping, and working relationships.

14. Provides technical supervision on the more difficult and complex repair problems and installations.

15. Assists with the direction and training of the electronic technicians and schedules work assignments in the absence of the electronics supervisor and/or electronics assistant supervisor.

16. Plans projects, reviews specifications compiles material lists, and provides cost estimates.

17. Performs routine parts procurement and maintains shop inventory.
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MINIMUM QUALIFICATIONS:

License or Certificates: Valid California Operators license issued by the State Department of Motor Vehicles. Department of Motor Vehicles driving record may influence employment or classification. AND Possession of a valid Technician Certificate issued through a program endorsed by the Federal Communications Commission or a FCC license.

Education and Experience: Must have experience working on the District's SCADA system as an Electronic Technician I for a minimum of 5 years.

ABILITIES:

- Performs maintenance, repairs, and installations on Districts supervisory control and SCADA systems, automatic control systems, radio systems, telephone systems, security systems, and flood warning systems.
- Troubleshoots and analyzes problems and take appropriate corrective action.
- Operates a variety of electronic equipment and tools in a safe manner.
- Comprehends and complies with FCC rules and regulations.
- Communicates effectively with others.
- Performs mathematical calculations.
- Maintains accurate records and reports.
- Provides courteous and efficient customer service.
- Reads and accurately interprets schematics and wiring diagrams.

EDUCATION: Possession of a High School diploma or G.E.D.

KNOWLEDGE OF:

- Modern electronic control and monitoring systems.
- Water system hydraulics
- Windows operating system
- Basic mechanical principles
- Microprocessor troubleshooting
- Analog and digital troubleshooting
- Effective and reliable soldering practices
- Measurement instrumentation and process control
- Properties of electricity (alternating current, direct current, circuit theory)
- Basic electronics theory (electronics principles, measurements, and components)
- Electronic fundamentals (DC and AC electronics, semiconductors, and circuits)
- Electronic communications (TV, radio, FAX, modem, multiplex, data transmissions)
- Radio theory (transmitters, receivers, antennas, radio wave propagation)
- Advanced electronics (impedance, gain, amplifiers, regulators, oscillators, PLL)
- Digital electronics (logic circuits, digital integrated circuits, memory devices)
- Microprocessor principles (digital-to-analog and analog-to-digital converters)
- Test equipment (digital and analog voltmeter, ammeter, ohmmeter, oscilloscope)
- Principles of computerized control systems.
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- Methods, tools, equipment and procedures used in the design, construction, installation, maintenance and repair of District systems and facilities related to electronic equipment.
- Principles or operation of the irrigation, sanitation, domestic, flood control, drainage systems, recharge, reclaimed and stormwater systems.
- Hydraulic relationship between wells, booster stations, reservoirs, lift stations, and irrigation pumping facilities.
- Principles and practices of reclamation plant, water production, and distribution operations as maintained by the District.
- Electronic controls for equipment, such as in variable speed drives, gate controllers, UPS systems, and communication equipment in all frequency bands.
- FCC rules and regulations.
- Basic Sungard Public Sector Knowledge
- Safe working practices including confined spaces.

PHYSICAL REQUIREMENTS:

1. Drives District vehicle to job sites including over rough terrain. Driving: Moderate to heavy
2. Works in extreme weather conditions including heat and rain.
3. May work in areas containing fumes, dust, chemicals, sewage and exhaust.
4. Work in extreme weather conditions including wind, heat and rain.
5. Uses telephone and two-way radio to communicate.
6. Will climb ladders and 250 foot towers when required.
7. Will work nights, weekends, holidays, and standby when required.
8. Tolerate the District’s immunization program.
ADDENDUM TO ELECTRONIC TECHNICIAN II JOB DESCRIPTION

Employee seeking promotion to this position must meet expectations or be above expectations on all categories on the last performance evaluation and have the ability to take on additional responsibility such as assisting with the direction and training of other technicians, providing technical supervision on more difficult and complex repair and installation problems, performing routine parts procurement, aiding in the development of design specifications, estimating project costs, assisting with the budgeting process, and performing planning duties in the supervisor's absence.

Must have the technical knowledge and ability to learn to effectively repair all electronic systems listed below for a minimum combined total of 100 points.

A resident expert in one of the following technical areas can effectively restore that equipment to full operation, has detailed knowledge of that equipment down to component level, and is able to train other technicians and provide technical supervision in that technical area.

a) 30 - Programmable controller installation, maintenance, repair, and programming

b) 30 - Base radio, mobile radio, and telemetry radio installation, alignment, maintenance, repair and programming

c) 10 - Digital and electronic circuit design, installation, and repair

d) 10 – Fiber Optic installation, maintenance, and repair

e) 10 - Weather fax, satellite receiver and data logger, and broadcast equipment installation, maintenance, and repair

f) 10 - Variable frequency drive maintenance, repair, and programming

g) 10 - Gas detector and chlorine controller installation, maintenance, repair

h) 20 - Computer aided design; layout, as-built, digitize, edit description of operation, and use AutoCAD or Visio proficiently

i) 20 - Flood Warning System installation, maintenance, and repair

j) 10 - Audio and video equipment installation, maintenance, and repair

k) 30 - LTU, Micro-RTU, or RTU installation, maintenance and repair

l) 30 - Microwave radio and data communication equipment installation, alignment, maintenance and repair

m) 30 - Sanitation instrumentation and process control equipment installation, maintenance and repair
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n) 30 - Telephone equipment installation, maintenance, repair and programming

o) 20 – Human Machine Interface (Cimplicity) installation, troubleshooting, and programming

p) 20 – Install, Analyze and Configuration of Communication Networks