

SENIOR ELECTRONICS TECHNICIAN

DEFINITION

To organize, assign, and review the work of personnel engaged in technical duties related to the installation, testing, troubleshooting, maintenance, calibration, inspection, repair and modification of electrical and electronic equipment traffic signal and Intelligent Transportation Systems (ITS) and associated communications systems, networks and control systems.

DISTINGUISHING CHARACTERISTICS

This is the advanced journey level class in the Electronics Technician series. Positions at this level are distinguished from other classes within the series by the level of responsibility assumed, complexity of duties assigned, independence of action taken, by the amount of time spent performing the duties, and by the nature of the public contact made. Employees perform the most difficult and responsible types of duties assigned to classes within this series, including providing technical and functional supervision and performance of advanced journey level activities. Employees at this level are required to be fully trained in all procedures related to assigned areas of responsibility.

SUPERVISION RECEIVED AND EXERCISED

Receives direction from higher level supervisor.

Exercises technical and functional supervision over electronics technician staff.

EXAMPLES OF ESSENTIAL DUTIES - Duties may include, but are not limited to, the following:

Plan, prioritize, lead, review, and participate in the work of staff involved in the installation, servicing, operation, testing, troubleshooting, diagnosing, and repairing of communication systems, networks, control systems, electrical relays, alarm systems, transmitters, gauges, sensors, isolators, analyzers, flowmeters, transducers, uninterruptable power supplies, lighting, ballasts, switches, street lights, traffic signals, starters, circuit breakers, power meters, control wiring, vehicle detection systems and other related traffic signal electrical systems.

Develop schedules and methods to accomplish assignments ensuring all work is completed in a timely and efficient manner.

Provide or coordinate staff training; work with employees to correct deficiencies.

Participate in evaluating the activities or staff, recommending improvements and modifications.

Install, troubleshoot, maintain and repair electrical and electronic systems associated with traffic systems.

Review traffic signal plans for constructability and compliance with City, State and

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Americans with Disabilities specifications.

Perform duties associated with the construction of traffic signals; inspect the work of outside contracts to ensure work meets City and State standards.

Interpret timing strategies to diagnose equipment failures; program traffic signal logic controllers; identify and correct problems with control software; and program test cabinets for field deployment.

Install, maintain, troubleshoot and repair City wide fiber optic cable.

Install, maintain, upgrade and configure local area network hardware, software, system software, servers, switches, modems and cabling.

Install, maintain, program and repair flood warning equipment; calibrate water level pressure transducers and rain gauges.

Install, maintain, monitor, troubleshoot and repair current and future ITS infrastructure including servers, software, network and interfaces with radar detection, video detection, Wi-Fi travel time sensors, license plate readers, connected vehicle radios, wireless point to point communications, networked relays and related equipment and infrastructure; perform software and firmware updates to equipment.

Perform scheduled preventative maintenance; answer emergency and trouble calls regarding signal malfunctions.

Install, configure and maintain control, video and communications equipment.

Design and prepare plans and specifications for current and future communications systems, networks and control systems associated with the City's traffic signals and Intelligent Transportation Systems.

Review final construction plans and specifications for current and future communications systems, networking and control systems associated with the City's traffic signals and Intelligent Transportation Systems; recommend contract order changes.

Review plans, specifications, special agreements and Memorandum of Understandings associated with developer projects, ensuring the best interest of the City are met.

Participate in long-term planning as it relates to current and future communications systems, networks and control systems.

Prepare and submit Federal Communication Commission license applications; ensure license requirements are adhered to.

Evaluate hardware and software solutions for the data center, traffic signal and ITS infrastructure and City-wide traffic network.

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Install servers and related components in the data center; install virtualized server software systems; create department servers; install and configure department server software.

Respond to network outages; troubleshoot, diagnose and resolve outages; coordinate with other City departments that utilize the traffic network as needed for new connections, future planned connections, and scheduled and non-scheduled outages.

Evaluate and recommend improvements to operations as it relates to cyber security; perform hardware patching; and ensure state and federal security requirements are adhered to.

Develop standards for use in traffic network design and new infrastructure planning.

Set and service electrical voltage recording devices; locate underground electrical conductors to prevent damage; inspect and repair new and damaged buried cables; supervise contractors performing installation and repair work near cables.

Operate equipment in a safe and efficient manner in a variety of hazardous environments including traffic.

Maintain work and inspection records; prepares reports as required.

Build and maintain positive working relationships with co-workers, other City employees, and the public using principles of good customer service.

Inspect traffic signal construction.

Perform related duties as assigned.

MINIMUM QUALIFICATIONS

Knowledge of:

Principles and practices of lead supervision including safety practices and related record-keeping.

Complex principles of electrical and electronic repair, maintenance and system design.

Traffic signal control equipment, including logic controllers, battery backup systems, intelligent transportation systems components and related devices.

Principles, methods, materials and equipment used in the installation, testing, maintenance and modification of electrical and electronic systems and equipment.

Types of tools, methods and materials used in electrical work.

Components and parts used in modern street lighting; traffic signals, Intelligent

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Transportation Systems.

Federal, state and local laws, codes and regulations pertaining to traffic signals operations and maintenance.

Advanced principles of networking, system design development, analysis, testing, security and administration.

Methods of firewall setup, programming and maintenance.

Virtualized server environment including hardware installation, software setup and routine maintenance.

Safe work practices.

Computer hardware and software.

Ability to:

Act as lead worker and perform advanced journey level installation, testing, maintenance, calibration, repair and modification of electrical and electronic equipment associated with traffic systems.

Perform maintenance, troubleshooting, and repair work on a variety of electrical and electronic equipment and devices.

On a continuous basis, know and understand operations, and observe safety rules; intermittently analyze problem equipment; identify and locate equipment; interpret work orders; remember equipment location; and explain jobs to others.

Intermittently, sit while studying or preparing reports; bend, squat, climb, kneel and twist when installing, repairing, and servicing equipment; perform simple and power grasping, pushing, pulling, and fine manipulation; and lift or carry weight of 50 pounds or less.

Understand and interpret written and oral instructions, electrical drawings, blueprints, plans and wiring diagrams.

Design, understand and troubleshoot complicated control, logic statements and relaying schemes.

Use and care for tools and equipment used in maintaining and repairing electrical and electronic devices.

Apply federal, state and local laws, codes and regulations pertaining to electrical line maintenance.

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Work safely under emergency and hazardous conditions including live traffic.

Plan, and assign the work of a small crew.

Maintain work records.

Communicate clearly and concisely, both orally and in writing.

Establish and maintain cooperative working relationships with those contacted in the course of work.

Experience and Training

Experience:

Two years of experience performing work similar to that of an Electronics Technician III with the City of Roseville.

Training:

Equivalent to the completion of the twelfth grade supplemented by specialized training in solid state electronics, electric utility equipment or a related field, OR college-level courses in electronics or a related field.

License or Certificate

Possession of a valid California driver's license.

Possession of an International Municipal Signal Association Level 3 Traffic Control certificate and possession of Comp TIA A+ certificate.

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