

**Communications Electrician (3686)
Task List - 2021**

General

1. *Maintains, repairs, installs, tests, and inspects the following types of equipment or systems using test equipment such as:
 - a. *Dispatch systems, microwave and radio communications, transmitters/receivers, and antennas
 - b. *Deleted per SEAs on June 23, 2021
 - c. *Telephony instruments, voice over IP (VOIP), trace wiring, and voicemail systems
 - d. *Deleted per SEAs on June 23, 2021
 - e. SCADA, Channel banks/DACS and RTU
 - f. Data network systems (LANs, WANs, WAP, cloud, fiber optics/SONET, routers, switches, and UPS power supplies, and routers) and network and cloud management systems data transmission systems
 - g. *Deleted per SEAs on June 23, 2021
 - h. *Task moved to a different section of the list
 - i. *Task moved to a different section of the list
 - j. *Deleted per SEAs on June 23, 2021
 - k. Mobile data systems and terminal
 - l. *Deleted per SEAs on June 23, 2021
 - m. *Deleted per SEAs on June 23, 2021
2. *Locates trouble in equipment and circuits using hand tools, power tools, and electronic test equipment such as computers, transmission level and frequency meters, return loss measuring equipment, data transmission test equipment, pulse generators, communications service monitor, analyzers, oscilloscopes, signal tracers, signal/sweep generators, in order to repair various communications systems.
3. Notifies supervisor orally or through written communication of unsafe working conditions such as exposed wiring, asbestos, lead contaminants, and other hazardous materials.
4. * Deleted per SEAs on June 23, 2021
5. * Deleted per SEAs on June 23, 2021
6. Constructs and fabricates test panels, relay tracks, and communications equipment in communication sites and vehicles by using various hand and power tools (such as drill presses, table saws, chassis punches, and grinders).
7. Modifies electronic equipment in order to conform to new standards, rules, and laws (i.e. FCC, FAA, and Cal OSHA) and meet changing needs of a communications system.
8. Completes written reports (e.g. work management system), forms, and emails of work in order to document system configurations and maintenance history.

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9. *Creates and updates schematic diagrams of circuit installations, blue prints, and cable records as required in order to document system configuration manually or electronically (e.g. Auto Cad).
10. *Drives an automobile, truck, or snow vehicle to perform work at hilltop communications sites and remote areas.
11. Receives service requests from users, orally or by written communications, and evaluates or refers service requests in order to make repairs and changes to systems or communications equipment.
12. *Maintains, repairs, installs, and replaces equipment located at heights where ladders and aerial lifts are required.
13. *Documents work performed in order to ensure work is in compliance with regulatory agencies such as FCC, FAA, Cal OSHA, City, and departmental rules and regulations by keeping electronic and manual logs, and as built documentation.
14. Tests newly installed, repaired, or updated equipment to ensure that it functions properly and conforms to specifications using test equipment and observation.
15. Analyze test readings from system alarms and trouble reports to assess and determine equipment repair needs.
16. *Inspects, replaces, and repairs antenna systems to ensure proper working conditions by using specialized equipment such as TDR, VSWR meter, and cable analyzers.
17. Coordinates the service of contractors for the installation or repair of communications systems and equipment, including coordination of work schedules, performance records, verification, and evaluation of work performed.
18. Works with potentially hazardous tools, equipment, and materials such as fiber optics, exposed electrical wires, and radio frequency radiation.

Radio Communications

19. *Test radio equipment functions and parameters such as signal strength and audio quality, transmission capacity, interference, and signal delay using equipment such as communications service analyzers/monitors, oscilloscopes, circuit analyzers, frequency meters, wattmeters, and spectrum analyzers.
20. *Installs, test and adjusts, and repairs fixed and mobile radio equipment systems such as P25 trunking and conventional two-way radios using CSM and test equipment.

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21. Examines malfunctioning radio equipment to locate defects such as loose connections, broken wires, or defective components, using schematic diagrams and test equipment.
22. *Tests, adjusts, and performs preventative maintenance on receivers and transmitters to system specifications and FCC regulations using radio test equipment.
23. Mounts antennas and radio equipment on transmission towers or vehicles by hoisting, lifting, or carrying such equipment.
24. Investigates radio and television interference caused by power transmission lines to comply with FCC rules and regulations using frequency monitoring devices and antennas.

***Data and Voice Network**

25. *Troubleshoots, repairs or replaces faulty equipment such as defective and damaged voice sets, copper or fiber optic cables, and associated equipment.
26. *Deleted per SEAs on June 23, 2021
27. *Programs, troubleshoots, installs, repairs, and performs routine adds, moves, and changes to voice over IP (VOIP) and voicemail systems.
28. *Analyzes and troubleshoots IP networks using simple network management protocol (SNMP), network management systems and portable network analysis, and troubleshooting tools such as T-carrier testers, power meters, OTDR optical time domain reflectometers, cloud based software and packet analyzers in order to construct, maintain, and/or troubleshoot IP networks.
29. *Identifies areas of operation that need upgraded equipment such as routers, switches, UPS power supplies, wireless access points (WAP) fiber optic, and copper cabling.
30. *Installs and configures routers, switches, wireless access points, UPS power supplies, and fiber optic transport systems such as SONET equipment using test equipment, tools, and computers.
31. *Terminates copper or fiber optic cables and installs fiber and copper patch panels using punch down tools and splice kits.
32. *Monitors, inspects, and performs preventative maintenance on all data networking devices throughout the City.

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Security and Audio/Video

33. *Maintains, repairs, installs, tests, and inspects the following types of equipment or systems such as:
- a. *Video (Security cameras (IP), Process control, CATV/MATV, IPTV and Information display systems) and VMS (Video Management Systems)
 - b. *Audio/Video systems (public address, audio/video processors and matrix switching, emergency notification systems)
 - c. *Access control and monitoring system (ACAMS)
 - d. *Intrusion and Panic alarm systems

* Reviewed and revised by Special Examining Assistants (SEAs) on June 23, 2021.