

## Electronics Specialist

**DESCRIPTION OF WORK:** Positions in this class perform skilled work in the maintenance and repair of electronics devices, instruments, equipment and/or systems. Work may involve design and construction or modification of electronic devices. Employees operate standard and/or specialized testing equipment while troubleshooting electronic devices and systems. Some positions may be assigned to a specific system while others may work with multiple systems. Examples of equipment/systems maintained by Electronics Specialists include power switchgear and panelboards with amp meters, power meters and frequency meters, environmental control system, ocean research and monitoring system, fire alarm system, HVAC system, and campus card systems. This may require knowledge of NFPA or other life safety systems codes and standards. Most work is performed independently with little supervision. Guidelines/documentation may be more readily available for lower level positions. Work requires knowledge of electronic principles, mathematical principles and fundamental of physics as applied to electronics

### **EXAMPLES OF COMPETENCIES:**

#### **CONTRIBUTING:**

- **Knowledge-Technical:** Performs a limited variety of recurring and related tasks/functions using basic knowledge of electronic principles and use of standard tools and test equipment. Ability to read and understand schematic and wiring diagrams and maintenance manuals.
- **Safety and Health Compliance:** Performs tasks and duties safely to avoid danger to self and others. Follows applicable regulations, codes, policies and procedures. Identifies and informs supervisor of potential safety problems. Warns others of potential hazards. Uses appropriate protective equipment following established protocols. Incorporates accident prevention and corrective measures in work related activities. Follows appropriate post-emergency procedures.
- **Problem Solving:** Identifies and resolves standard/routine problems with electronic devices, equipment, systems through routine inspection and preventive maintenance/testing, after system/equipment failure, or when updating equipment with new technologies. Operates standard test equipment to troubleshoot and repair electronic devices or systems that are well documented with wiring and schematic diagrams and factory maintenance manuals.

#### **JOURNEY**

- **Knowledge-Technical:** Performs a variety of recurring and non-recurring tasks/functions using a working knowledge of electronic principles and use of non-standard tools and specialized test equipment. Ability to modify standard circuitry to improve its performance or to perform special effects. Ability to troubleshoot non-standard electronic devices or devices for which documentation is incomplete or not available.
- **Safety and Health Compliance:** Anticipates, identifies, and resolve potential safety problems and unsafe work practices in assigned area. Demonstrates to employees and others, safe ways to perform job tasks or the use of equipment. Informs supervisor of unusual safety concerns and makes recommendations for resolution using applicable codes and regulations. Determines appropriate protective equipment based on established standards.
- **Problem Solving:** Identifies and may resolve or make recommendations for non-standard/more complex problems with electronic devices, electronic subsystems and systems through inspection and maintenance, or after system/equipment installation/failure. Troubleshoots and evaluates options; chooses appropriate action by considering potential outcomes. Operates specialized test equipment to troubleshoot and repair non-standard electronic devices and systems. Researches electronics literature to modify, build, or interface electronic devices.

**ADVANCED**

- **Knowledge-Technical:** Routinely and consistently performs diverse and complex tasks using considerable knowledge of electronic principles. Tasks require in-depth analysis. May modify and/or design electronic circuits or hardware to complete assignment. Ability to develop innovative electronics troubleshooting and testing procedures. Ability to read and comprehend periodicals on electronics advances and apply new theories and components to design projects.
- **Safety and Health Compliance:** Regularly assesses safety conditions; identifies, communicates, and implements accident prevention and corrective measures in work related activities. Applies applicable regulations, codes to enhance work unit processes and procedures. May train others in proper and safe use of equipment. Anticipates departmental safety issues and takes proactive steps to maximize safe operations and measure the effectiveness of action.
- **Problem Solving:** Anticipates and proactively pursues maintenance issues. Confers with supervisor or client to determine purpose of requested device and operating parameters before designing and constructing device or before diagramming and designing circuits to perform unique, unusual functions. Identifies problems with complex systems or electronic instrumentation through preventive and corrective maintenance, with design and implementation/ installation of instruments or through cooperative work with personnel of other programs. Determines circuit configuration and function of complex electronics systems in absence of documentation.

**MINIMUM TRAINING AND EXPERIENCE:**

2-year degree in electronics

Special Note: This is a generalized representation of positions in this class and is not intended to reflect essential functions per ADA. Examples of competencies are typical of the majority of positions, but may not be applicable to all positions.