

## **CITY OF ST. LOUIS CLASSIFICATION SPECIFICATION**

### **CLASSIFICATION**

**TITLE:** Electrical Engineer (Senior)

**CLASS CODE:** 4262

### **GENERAL DESCRIPTION OF DUTIES:**

Incumbents design electrical systems and provide electrical engineering for construction, maintenance, testing and improvement.

### **DISTINGUISHING CHARACTERISTICS:**

This is an advanced journey-level professional classification in the General Engineering Series – Electrical Engineering Group job family within the City of St. Louis. Incumbents perform a variety of moderately complex to complex duties. The distinguishing characteristics of this classification within the series include responsibility for designing electrical systems and providing electrical engineering for construction, maintenance, testing and improvements.

Incumbents work under general direction. They are generally in charge of an organizational unit, plan and carry out assignments with considerable independence, and have some latitude in developing procedures and methods. Supervision is given by occasional conferences.

This is an individual contributor class, meaning the incumbent is responsible for his/her own work including output, quality and timeliness. Incumbents may, however, explain work processes and train others, such as new employees, in the same or similar job title. The individual contributor may serve as a resource or guide by advising others on how to use processes within a system or as a member of a collaborative problem-solving team.

### **EXAMPLES OF WORK (Illustrative Only):**

***(The list of duties is intended to be representative of the duties performed in positions within this classification. It does not include all the duties that may be assigned to a position and is not necessarily descriptive of any one position in this class.)***

Designs electrical systems and system modifications.

Reviews electrical plans and specifications; reviews cost estimates for electrical projects.

Writes electrical construction plans and specifications. Prepares cost estimates and project budget requests.

Performs field studies for design projects and reports.

Inspects work of city workers and electrical contractors for compliance with designs and specifications.

May provide technical assistance to other operating sections.

May maintain contact with electric utility on current and future demand; maintains contact with department of Public Works for electrical inspections.

Conducts maintenance and efficiency tests.

Diagnoses problems with electrical equipment.

Advises electricians, and operating and maintenance personnel regarding technical matters.

Locates wiring and conduit.

### **KNOWLEDGE, SKILLS AND ABILITIES:**

#### **Data Utilization:**

Requires the ability to perform mid-level data analysis including the ability to audit, deduce, assess, conclude and appraise. Requires discretion in determining and referencing such to established criteria to define consequences and develop alternatives.

#### **Human Interaction:**

Requires the ability to provide guidance, assistance and/or interpretation to others, such as co-workers, electricians, electrical equipment/system operators and maintenance personnel, on how to apply policies, procedures and standards to specific situations.

#### **Equipment, Machinery, Tools and Materials Use:**

Requires the ability to calibrate and perform complex rapid adjustment on equipment, machinery and tools such as oscilloscope, cable locator, ohm meter, multi-meter and operate motor vehicle, calculator, two-way radio, computer terminal, photocopier, plotter, pager and/or related materials used in performing essential functions.

#### **Verbal Aptitude:**

Requires the ability to utilize a variety of reference, descriptive and advisory data and information such as plans, specifications, diagrams, schematics, technical reports, contracts, budgets, project cost estimates, requisitions, field notes, sketches, time sheets, electrical codes, electrical engineering manuals, technical operating manuals, procedures, guidelines and non-routine correspondence.

#### **Mathematical Aptitude:**

Requires the ability to perform addition, subtraction, multiplication and division; calculate percentage and decimals; perform mathematical operations involving advanced algebra, geometry and trigonometry.

#### **Functional Reasoning:**

Requires the ability to apply principles of rational systems. Ability to interpret instructions furnished in written, oral, diagrammatic or schedule form. Ability to exercise independent judgment to adopt or modify methods and standards to meet variations in assigned objective.

**Situational Reasoning:**

Requires the ability to exercise the judgment, decisiveness and creativity required in situations involving the evaluation of information against sensory, judgmental and/or subjective criteria, as opposed to criteria that are clearly measurable or verifiable.

**Environmental Factors:**

Tasks may risk exposure to adverse environmental conditions, such as machinery, electric currents and traffic hazards.

**Physical Requirements:**

Requires the ability to lift plans, books, testing equipment weighing up to twenty pounds.

Requires the ability to stoop, kneel, crouch, bend, twist and climb to perform electrical inspections.

**Sensory Requirements:**

Requires the ability to recognize and identify similarities or differences between characteristics of colors to determine color-coded wires and shapes to clearly distinguish objects to perform inspections.

The City of St. Louis is an Equal Opportunity Employer. In compliance with the Americans with Disabilities Act, the City of St. Louis will provide reasonable accommodations to qualified individuals with disabilities and encourages both prospective and current employees to discuss potential accommodations with the City.

**EDUCATION AND EXPERIENCE STATEMENT:**

Bachelor's degree in Electrical Engineering with three to five years electrical engineering experience, or any combination of education and experience that provides equivalent knowledge, skills and abilities.

**SPECIAL REQUIREMENTS:**

Possession of a valid state driver's license.