



## SENIOR TRACTION POWER ENGINEER

JC: 000241

PG: 7

FLSA: Exempt

BU: 92(NR)

Created: June 2019

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are **not** intended to reflect all duties performed within the job.*

### **DEFINITION**

Under supervision, Develops, reviews, and modifies engineering plans, designs, specifications, and projects. Evaluates operating systems related to traction power; performs related duties as assigned.

### **CLASS CHARACTERISTICS**

This is the advanced journey level class in the Electrical Engineer series. This classification possesses a specialized, technical or functional expertise within the area of assignment or may exercise lead supervision over assigned lower level staff. This classification is distinguished from the Principal Electrical Engineer in that the latter performs the most complex work assigned to the series or serves in a working supervisory capacity over lower level District or contracted staff.

This professional advanced journey level classification within the Traction Power Engineer series is performs the more complex and technical work and is fully aware of the operating procedures and policies of the work unit. This classification is distinguished from the Principal Traction Power Engineer in that the latter possesses a highly technical and functional expertise within the area of assignment.

### **REPORTS TO**

Deputy Director, Group Manager, Engineering Manager or designee.

### **EXAMPLES OF DUTIES** – *Duties may include, but are not limited to, the following:*

1. Performs complex and advanced electrical engineering project duties in the preparation of engineering design plans and specifications for the District's electrical facilities and systems, including traction and utility power, corrosion protection, lighting and other equipment and systems.
2. Performs engineering design duties; prepares engineering design drawings and specifications, calculations and cost estimates, provides design support during construction.
3. Inspects equipment or facility; analyzes and makes recommendations on engineering solutions for repair, modification or maintenance.

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4. Prepares and coordinates the preparation of construction feasibility studies and cost estimates; defines scope and develops conceptual plans; prepares electrical engineering design project proposals for management review and approval.
5. Provides assistance in obtaining outside consultant services; schedules consultant proposal submissions, participates in evaluation of consultant proposals.
6. Coordinates engineering work with that of other engineering divisions and public agencies; administers control of required documentation for electrical engineering projects.
7. Initiates and evaluates design and field engineering changes during construction; takes field measurements of completed work; inspects construction at substantial and final completion stages; reviews, stamps, and signs design drawings as Engineer of record for construction contracts.
8. Prepares engineering reports, manuals and other correspondence related to work activities.
9. Participates in the preparation and administration of the electrical engineering program budget; submits budget recommendations; monitors expenditures.
10. Recommends approval of and submits contractor's progress payment applications; maintains documentation of contract deficiencies.
11. Attends and participates in professional group meetings; stays abreast of new trends and innovations in the field of electrical engineering.
12. Conducts field inspections, site investigations and field materials testing duties.

## **QUALIFICATIONS**

### **Knowledge of:**

- Operations, services and activities of a comprehensive electrical engineering program.
- Principles and practices of electrical engineering design and construction.
- Principles and practices of electrical equipment and materials.
- Principles and practices of project scheduling and management.
- Principles and practices of engineering cost estimating.
- Electrical safety procedures.
- Methods and techniques of field measuring and testing.
- Methods and techniques of conducting construction site inspection and investigation.
- Electrical systems and facilities.
- Advanced mathematical principles.
- Principles and practices of contract administration and management.
- Current office procedures, methods, and equipment including computers.
- Specialized computer programs or systems utilized in electrical engineering design and construction including CADD.
- Principles of lead supervision and training.
- Related building codes, regulations and provisions.
- Related Federal, State and local laws, codes and regulations.

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- Related IEE, ANSI, NFPA, IESNA and other codes/design guidelines.

### **Skill in:**

- Developing, reviewing, and modifying complex electrical engineering plans, designs, and specifications.
- Leading, organizing and reviewing the work of lower level engineering staff.
- Interpreting and explaining District policies and procedures.
- Preparing clear and concise reports.
- Managing and administering electrical engineering contracts.
- Analyzing complex electrical engineering problems, evaluating alternatives, and recommending solutions.
- Reading blueprints and schematics.
- Performing field inspections and taking measurements.
- Developing engineering project work scopes, criteria, budgets and schedules.
- Understanding and following oral and written instructions.
- Interpreting and preparing revisions to engineering plans, drawings, and specifications. Communicating clearly and concisely, both orally and in writing.
- Establishing and maintaining effective working relationships with those contacted in the course of work.

## **MINIMUM QUALIFICATIONS**

### **Education:**

Bachelor's degree in Engineering or a related field from an accredited college or university.

### **Experience:**

Three (3) to five (5) years of professional verifiable experience in design, electrical substructure systems design or related experience.

### **Substitution:**

Additional professional experience as outlined above may be substituted for the education on a year-for-year basis. A college degree is preferred.

### **License or Certificate:**

Certified professional engineering license required.

## **WORKING CONDITIONS**

### **Environmental Conditions:**

Office environment; field environment; construction site environment; exposure to noise, dust, grease, smoke, fumes, gases, heat, cold, and inclement weather conditions when conducting field inspections and investigations.

### **Physical Conditions:**

Requires maintaining physical condition necessary for walking, standing or sitting for prolonged periods of time; Must be physically able to conduct field inspections and testing as assigned.

**BART EEO-1 Job Group:** 3000 – Engineers

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**Census Code:** 1410 – Electrical Engineers

**Safety Sensitive:** No