



SENIOR VEHICLE SYSTEMS ENGINEER

JC: TF234
PG: 7
FLSA: Exempt

BU: 92 (NR)
Created: January 1999
Revised May 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 general supervision, responsible for the more difficult and complex repair, overhaul, evaluation, and reliability of District transit vehicles including electrical, mechanical and electro-mechanical systems and components; investigates and determines the cause of major transit vehicle equipment failures; performs related duties as assigned.

CLASS CHARACTERISTICS

This is the professional advanced journey level classification in the Vehicle Systems Engineer series. Classifications at this level possess a specialized, technical or functional expertise within the area of assignment, are typically assigned significant responsibilities above the journey level and often exercise independent judgment in the performance of all duties. This classification is distinguished from the Manager of Vehicle Systems Engineering in the latter directs, manages, supervises and coordinates the operations and activities of the Vehicle Systems Engineering Division within the Rolling Stock and Shops Department.

REPORTS TO

Manager of Vehicle Systems Engineering or designee.

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

1. Responsible for the more difficult and complex repair, overhaul, evaluation, and reliability of District transit vehicles including electrical, mechanical and electro-mechanical systems and components; investigates and determines the cause of major transit vehicle equipment failures.
2. Develops and prepares technical specifications for new and rebuilt transit vehicles and components; oversees the testing and quality assurance of supplier materials.
3. Provides technical support to the shops to ensure that the District's revenue fleet's HVAC systems are functioning well.
3. Designs and specifies special testing and servicing equipment to troubleshoot and maintain various transit vehicle subsystems.

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4. Reviews assigned engineering drawings and documents; ensures contract compliance, the use of proper engineering methods and compatibility with other systems.
5. Attends design review meetings and presents the District's position on new and rebuilt transit vehicle issues.
6. Defines quality assurance criteria and inspection procedures for maintenance and repair of transit vehicles; audits maintenance staff to ensure compliance with standards.
7. Determines District requirements for electrical and electro-mechanical subsystems; researches industry standards and incorporates into specifications as applicable.
8. Analyzes complex vehicle equipment failures; develops, implements and documents resulting maintenance procedures and equipment design changes.
9. Identifies and resolves transit vehicle project issues; resolves or refers to appropriate division.
10. Trains assigned employees in their areas of work including vehicle systems engineering methods, procedures and techniques.
11. Operates a variety of mechanical equipment in a safe and effective manner including electrical, mechanical and electro-mechanical test equipment.
12. Reviews and approves/rejects drawings and other technical submittals from car builder for new D and E-car trains.
13. Prepares a variety of analytical and statistical reports on program operations and activities.
14. Attends and participates in professional group meetings; stays abreast of new trends and innovations in the field of transit vehicle systems engineering.

QUALIFICATIONS

Knowledge of:

- Operations, services and activities of a comprehensive transit vehicle engineering program
- Key suppliers and sub-suppliers to the rail and transit industries
- Design principles and practices for rail and transit vehicles
- Principles of leadership and training
- Advanced principles and practices of mechanical or electrical engineering as may relate to transit vehicles
- Transit vehicle electrical and mechanical equipment and subsystems
- Operational characteristics of transit vehicles, systems and components
- Design and repair specifications for new and rebuilt transit vehicles and components
- Advanced principles and practices of engineering specification preparation and review
- Computers and applications utilized in transit vehicle diagnostics
- Operational characteristics of various mechanical testing equipment and tools
- Occupational hazards and standard safety practices
- Related Federal, State and local codes, laws and regulations

Skill/Ability in:

- Independently performing the most difficult transit vehicle inspection, maintenance and repair engineering duties
- Interpreting, explaining and enforcing department policies and procedures
- Preparing design and maintenance specifications and drawings
- Operating a variety of mechanical, electrical and electronic testing equipment in a safe and effective manner
- Analyzing complex vehicle equipment failures and developing equipment design changes
- Reviewing engineering drawings and ensuring compliance with contract guidelines
- Evaluating and resolving complex transit vehicle engineering problems
- Preparing a variety of complex engineering drawings, specifications and reports
- Defining quality assurance criteria and inspection procedures for maintenance and repair of transit vehicles
- Organization and time management
- Understanding and following oral and written instructions
- 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 related field from an accredited college or university.

Experience:

Three (3) years of (full-time) professional verifiable experience in electromechanical engineering, maintenance or related experience.

Other Requirements:

Successful completion of the Engineer-In-Training exam for California is desirable.

Substitution:

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

WORKING CONDITIONS

Environmental Conditions:

Shop environment; high voltage noise, dust, grease, smoke, fumes, gases; office environment.

Physical Conditions:

May require maintaining physical condition necessary for walking, standing or sitting for prolonged periods of time; operating motorized equipment and vehicles; working or inspecting in confined spaces; working around heavy construction equipment; must be physically able to conduct field inspections and testing as assigned.

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BART EEO-1 Job Group: 3000 – Engineers
Census Code: 1530 – Miscellaneous Engineers
Safety Sensitive: No