

Job Class Specification

Title:	Signal/Communication System Designer
Job Code:	709600
Bargaining Unit(s)/Grade:	Non Represented/GR 7
FLSA Status:	Non-Exempt
Safety Sensitive:	No
Competency Model:	TBD
Career Family:	TBD

Summary

Under the supervision of the Manager SCADA Signals and Communications, the incumbent is responsible for the maintenance of design drawings, documentation, software configuration, inspection and test records, and procedures for the LRT signal and train control systems. This position also monitors status of signal projects and ensures compliance with rail industry and transit agency regulations, standards, and recommended practices. This position specifies parts, materials and equipment for signal systems and generates purchase and stock requests.

Essential Responsibilities*

In addition to regular attendance, the following responsibilities are typical of the duties performed by incumbents in this job class. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential duties of the position.

- Manages configuration of signal system software, hardware and plans.
- Creates design drawings for signal and train control systems, and applies as-built revisions to existing drawings.
- Assists with the design of new signal and train control systems, and designs revisions, upgrades, and modifications to existing signal and train control systems.
- Monitors progress of signal department projects and provides project management assistance.
- Designs, writes, installs, and tests software changes to microprocessor-based signal and train control systems.
- Creates detailed material lists, purchase requests, and stock requests. Coordinates with purchasing and field personnel to provide prompt delivery of required parts and equipment.
- Investigates failures, assists with the investigation of incidents, prepares concise reports, compiles information, and maintains procedural reference information and inspection and test documentation.
- Coordinates with outside signal design consultants to ensure compliance with rail industry and Metro Transit regulations, standards, and recommended practices.
- Assists with writing specifications for new signal and train control systems.
- Develops training manuals and programs.
- Performs other related duties.
- Work Direction: This position provides work direction to Signals and Communication Foreperson and Signals and Communications Technician positions.

Non Essential Responsibilities

- Conducts or presents the training classes for the department.
- Conducts quality control and quality assurance inspections and develops reports.
- Provides guidance to technicians in troubleshooting equipment and repairs.
- Develops failure analysis investigations, fault trees and reports.

Qualifications

Education	Completion of two years of college-level coursework in a engineering field of study.
Experience	Five years experience in railway signal engineering, design and maintenance. Substitution: seven years of railway signal engineering, design and maintenance may be substituted for the two years of college level course work requirement.
License Requirements	A valid commercial class A driver's license.

Knowledge, Skills and Abilities Required:

Technical	Comprehensive knowledge and experience in the design of vital railroad signal and train control systems, and understanding of theories, concepts, and application of Centralized Traffic Control (CTC), Automatic Block Signaling (ABS), Absolute Permissive Block Signaling (APB), Highway Crossing Warning Devices (HCWDs), including their interface to traffic control systems, coded and non-coded track circuits both AC and DC, Audio Frequency (AF) and Audio Frequency Overlay (AFO) track circuits both single rail and double rail, relay and microprocessor-based vital control systems and associated programming and communications protocols, signals, switch machines, electric locks, and other signal appliances. Must be familiar with FRA, AREMA, and other railroad industry regulations, standards, and recommended practices. Must be familiar with proper railroad signal installation and maintenance practices and procedures.
Computer	Word, Excel, PowerPoint, email, various databases, project tracking software, internet, Auto CAD, MicroStation, VPI, CAAPE, and Watcher.
Language	Level 4. Ability to read, analyze and interpret professional journals, technical procedures and government regulations. Ability to write reports, business correspondence and procedure manuals. Ability to effectively present information and respond to questions from groups of customers or clients.
Math	Level 4. Ability to interpret and apply mathematical and statistical methods and procedures gained through professional educational training.
Human Relations	Level 2. Requires the skill and persuasion in dealing with others both inside and outside the department. Interactions with others generally require influencing, instructing and negotiating with individuals to gain their understanding, cooperation and action. Promotes an equitable, positive and respectful work environment that values cultural and diversity among all employees.

Work Environment

The majority of time, work is performed in a standard office setting. This position has occasional exposure to moving parts or equipment, working in high precarious places, outdoor weather conditions, risk of electrical shock and vibration. Confined space entry at industry and various facilities is required.

Physical Requirements

Regularly required to sit, speak or hear normal conversation and telephone ring tones for long periods; stand/walk frequently; more than one-third of the time is spent reaching with hands/arms, stooping, kneeling, crouching and crawling, climbing or balancing and using hands to finger, handle or feel. Must occasionally lift/carry/push/pull up to 25 pounds. Must have adequate close, distance, color, and peripheral vision, depth perception and ability to adjust focus.

* The job responsibilities listed are typical of the positions included in the job classification; however, not all duties are necessarily performed by each specific position.

Created: 02/19/07

Revision History:

Template revision 10/20/06;