

EMPLOYEE:

CLAIM #



# Job Analysis Form

ALTERNATE FORMAT AVAILABLE

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**JOB TITLE** Lineman (Electrical Worker)

**JOB CLASSIFICATION** Electrical Worker/Lineman

**DICTIONARY OF OCCUPATIONAL TITLES (DOT) NUMBER** 821.361-081

**DOT TITLE** Line Erector

**DEPARTMENT** Transportation

**DIVISION** Rail Transit

**# OF POSITIONS IN THE DEPARTMENT WITH THIS JOB TITLE** 11

**CONTACT'S NAME & TITLE** Ray Davis, Traction Power Chief

**CONTACT'S PHONE** 206-510-3122

**ADDRESS OF WORKSITE**

3407 Airport Way South  
Seattle, WA 98134

**VRC NAME** Kyle Pletz

**DATE COMPLETED** 6/12/09

**WORK HOURS**

Tuesday through Saturday, Sunday through Thursday. Day (6:00-14:30), Swing (14:30-22:30), and Graveyard (22:30-6:30) shifts exist with one 30 minute lunch break.

**OVERTIME** (Note: Overtime requirements may change at the employer's discretion)

Optional and varies depending on the business demand. Optional on most occasions, but can be required in emergency situations. During start up overtime is more prevalent ranging from 10-30 hours per week. Overtime can occur on nights and weekends as work is performed as part of a 24 hour per day operation.

**JOB DESCRIPTION**

Perform skilled journey level work to troubleshoot, maintain, repair, upgrade, and perform comprehensive preventive maintenance on energized rail electrical systems as well as energized traction power electrical systems and equipment in Light Rail shops, offices, park & ride lots, and tunnel. Maintain energized LR Overhead Contact Systems (OCS); maintain light rail overhead lines and associated components, underground feeders, switches, electrical wiring and systems including a variety of single phase, three phase and DC systems.

## **ESSENTIAL ABILITIES FOR ALL KING COUNTY JOB CLASSIFICATIONS**

1. Ability to demonstrate predictable, reliable, and timely attendance.
2. Ability to follow written and verbal directions and to complete assigned tasks on schedule.
3. Ability to read, write & communicate in English and understand basic math.
4. Ability to learn from directions, observations, and mistakes, and apply procedures using good judgment.
5. Ability to work independently or part of a team; ability to interact appropriately with others.
6. Ability to work with supervision, receiving instructions/feedback, coaching/counseling and/or action/discipline.

## **JOB SPECIFIC REQUIREMENTS**

- Knowledge of national, state and local electrical codes and means of compliance
- Knowledge and understanding of electrical theory, high voltage work and modern industrial controls
- Knowledge of required safety procedures
- Skill in locating underground cables; installing conduit and pull underground cable
- Skill in maintaining overhead lines and components
- Skill in the use of tools and equipment required to perform cable splicing and repair
- Skill in safely and efficiently utilizing appropriate test equipment
- Skill in reading and interpreting blueprints, schematics and drawings
- Skill in working in arc flash protection suits
- Skill in dealing proactively and sensitively with customers
- Skill in oral and written communications
- Skill in Computer filing of Reports, Emails, Office Programs, Excel, and PowerPoint Programs.
- Mechanical skills
- Problem solving and analytical skills
- Washington State Journey Electrician Certificate, Journeyman Lineman Certificate or equivalent may be required
- Must have a Washington State Class A CDL with air brake endorsement.
- Hi-Rail, Forklift, Aerial Lift, Confined Space, First-Aid/CPR and other certifications or requirements determined to be necessary to meet the business needs of the employing unit may be required. If training is necessary it may be provided by King County but the employee must pass all training programs before the probation period ends.
- Employment in this capacity is contingent upon successful pre-employment physical examination and drug testing as well as an acceptable driving record.

## **ESSENTIAL FUNCTIONS**

1. Perform routine inspection, maintenance, repair and upgrades to Energized High Voltage OCS components such as messenger wire, contact wire, section insulators, pole and enclosure mounted switches, air breaks, air gaps, insulated and un-insulated overlaps, poles, and associated equipment
2. Perform inspections, maintenance and upgrades to Energized High Voltage substations and their components such as switches, transformers, rectifiers, fuses, relays, programmable logic

controllers (PLCs), batteries, motor operated switches, chargers and associated equipment (including the LRV shop stinger system)

3. Maintain and repair equipment in Light Rail shops, offices, park and ride lots, and tunnels
4. Perform high voltage energized work; maintain and repair low voltage systems such as fire and security alarms; maintain and repair auxiliary power plants, transfer switches and uninterruptible power supplies; perform high voltage tests on power cables and equipment; splice, maintain and terminate all types of low and high voltage cable; pull, rack and secure high and low voltage cables in manholes, conduits, tunnels and vaults
5. Program and troubleshoot PC, PLC and micro-processor based control systems
6. Manually operate power switches and breakers under the direction of the Link Control Center
7. Flag track-way to provide safe rail work zones. Set-up work-zone traffic control areas
8. Maintain work records and complete work requests
9. Load and unload tools, materials and equipment
10. Trim trees and other vegetation which may interfere with train movement or electrical installations.
11. Maintain appropriate parts stock on assigned vehicles
12. Operate company assigned vehicles, including hi-rail and aerial lift equipment and perform rolling inspections from raised aerial equipment
13. Install, troubleshoot, and repair equipment required for underground distribution systems, traction power systems and facilities
14. Locate, repair and clear faults in underground systems
15. Bend, install, maintain and repair all types of conduit
16. Read and interpret distribution maps, feeder maps, and other drawings in performing switching and tagging
17. Read and interpret OCS/Traction Power Substation System schematic diagrams, feeder maps, and other drawings in performing sectionalization switching and tagging, legends.
18. Plan, schedule and coordinate activities and work with other trades and divisions
19. Pump water from vaults and manholes. Perform snow and ice removal
20. Respond to emergency calls as necessary
21. May inspect work completed by contractors
22. Assist other trades as needed. Perform other duties as assigned
23. Must be able to perform work at heights.
24. Must have a current and valid CDL class A license.

### **PERSONAL PROTECTIVE EQUIPMENT USED**

Head protections, safety vest, insulated gloves (high and low voltage), harness, belts, ear protection, eye protection, leather footwear, flash retardant clothing, long sleeve shirt, fire retardant clothing, arc resistant clothing, breathing protection, knee pads, installing rubber hose and rubber blankets on energized lines.

### **OTHER TOOLS & EQUIPMENT USED**

Cable, bucket truck, aerial platform, high rail equipment, boom truck, hoisting devices, hand tools, wood and steel poles, chain saw, cranes, shovels, digging bars, jackhammer, digger truck, auger, pole puller, spoon and spades, pry bar, ratchets, anvil, hammer, various hand tools, man lift, ladder, various testers, high pot machine, shivs, blocks, torch, pumps, air monitor, locator, flag

stands, signs, crimpers, heater, welding and cutting devices, generators, battery cutters and ratcheting cutters.

### **PHYSICAL DEMANDS AS JOB IS TYPICALLY PERFORMED**

Continuously = occurs 66-100% of the time

Frequently = occurs 33-66% of the time

Occasionally = occurs 1-33% of the time

Rarely = may occur less than 1% of the time

Never = does not ever occur (such demands are not listed)

Highly Repetitive = Repeating the same motion every few seconds with little or no variation for more than two hours total per day.

### **This job is classified as**

Very Heavy—exerting in excess of 100 pounds of force occasionally, and/or in excess of 50 pounds of force frequently, and/or in excess of 20 pounds of force constantly to move objects.

### **Standing**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently on concrete, rubber blanket, asphalt, brick, track ballast, dirt, vegetation, undeveloped land and uneven for up to 2.5 hours at a time for up to 5 hours in a work shift. Most commonly occurs while workers perform job duties in the tower/boom/bucket truck or on edge of bridge (at heights up to 75 feet) as well as when performing safety watch, testing, assembling and inspecting duties as well as when performing preventative maintenance. The employee also stands while working on controls, AC breakers, DC breakers, switch gear and rectifier transformers.

### **Walking**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently on concrete, rubber blanket, asphalt, brick, track ballast, dirt, vegetation, undeveloped land and uneven ground surfaces for distances of 1-2 miles at a time 5-10 minutes at a time for up to 5.5 hours total in a work shift. Most commonly occurs while repairing, installing, or troubleshooting rail systems. The employee also walks when traversing between the work site and work truck as well as when performing inspections. The employee performs walking inspections of the lines which requires walking 1-2 miles at a time.

### **Sitting**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally on a seat in the truck for up to 30 minutes at a time for up to 2 hours total in a work shift. Most commonly occurs while driving to job sites in a truck. The employee also sits on a stool when working in a substation.

### **Climbing stairs**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally for up to 6 flights for up to 5 minutes at a time for up to 30 minutes total in a work shift. Most commonly occurs while accessing/exiting tower on tower truck, traversing elevated sections of track-way, in tunnels as when traversing within the shop.

**Climbing**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally on tower truck to heights of up to 30 feet for up to 1 minute at a time for up to 30 minutes total in a work shift. Most commonly occurs while entering/exiting tower of tower truck and accessing ladders. Must also be able to climb out of vaults using a ladder as well as and on poles up to 30 feet.

**Balancing**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently to continuously on a tower truck at heights of up to 75-80 feet for up to 2.5-3 hours at a time for up to 5-6 hours total in a work shift. Most commonly occurs while working on the tower truck in a lift bucket performing line installations, working on elevated sections of rail, trouble shooting, testing and performing maintenance.

**Bending neck up**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently to continuously & Highly Repetitive for up to 2.5-3 hours at a time for up to 5-6 hours total in a work shift. Most commonly occurs while performing overhead work on the deck as well as inspecting lines.

**Bending neck down**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently for up to 1 hour at a time for up to 4 hours total in a work shift. Most commonly occurs while performing preventative maintenance which may include, but not limited to, working on controls, AC breakers, DC breakers, switch gear and rectifier transformers.

**Bending/Stooping**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently on concrete, asphalt and wood surfaces for up to 15 minutes at a time for up to 4 hours total in a work shift. Most commonly occurs while performing preventative maintenance, adjusting cantilevers, assembling OCS (overhead contact system) fixtures, setting up high rail vehicles, setting up boom trucks, performing pre and post inspections of vehicles. The employee can alternate between bending/stooping, kneeling or squatting as needed.

**Kneeling**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally on concrete, rubber blanket, asphalt, brick, track ballast, dirt, vegetation, undeveloped land and uneven surfaces for up to 5 minutes at a time for up to 30 minutes total in a work shift. Most commonly occurs while working on the tower and performing installations, maintenance and testing as well as when assembling switches on the tower. The employee can alternate between bending/stooping, kneeling or squatting as needed.

**Squatting**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally on concrete, rubber blanket, asphalt, brick, track ballast, dirt, vegetation, undeveloped land and uneven surfaces for up to 5 minutes at a time for up to 30 minutes total in a work shift. Most commonly occurs while working on the tower and performing installations, maintenance and testing as well as when assembling switches on the tower. The employee can alternate between bending/stooping, kneeling or squatting as needed.

**Crawling**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally on concrete, rubber blanket, asphalt, brick, track ballast, dirt, vegetation, undeveloped land and uneven surfaces for up to 5 minutes at a time for up to 30 minutes total in a work shift. Most commonly occurs while working on the tower and performing installations, maintenance and testing as well as when assembling switches on the tower.

**Operating Controls with Feet**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently to operate tower truck for up to 30 minutes at a time for up to 4 hours total in a work shift.

**Reaching above shoulder height**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently to continuously & Highly Repetitive for up to 10 minutes at a time for up to 3-6 hours total in a work shift while working with tools and equipment above shoulder as well as performing preventative maintenance and substation maintenance. Working with high voltage lines and performing work that is 80% over head to eye level. While installing overhead hardware (cam tips), worker will perform up to 1 hour of overhead hammering with a 20-pound anvil or roto-hammer.

**Reaching at waist to shoulder height**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently to continuously & Highly Repetitive for up to 30 minutes at a time for up to 6 hours total in a work shift while driving various County vehicles, handling tools in tower truck and on ground to perform preventative maintenance. Workers reach out to place grips, place tension on wires, etc.

**Reaching at knee to waist height**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally & Highly Repetitive for a few seconds to up to 3 minutes at a time for up to 2.5 hours total in a work shift while performing preventative maintenance, retrieving tools and materials at lower levels.

**Reaching at floor to knee height**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally on concrete, rubber blanket, asphalt, brick, track ballast, dirt, vegetation, undeveloped land and uneven surfaces for up to 5 minutes at a time for up to 30 minutes total in a work shift. Most commonly occurs while working on the tower and performing installations, maintenance and testing as well as when assembling switches on the tower.

**Lifting 1-10 pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Continuously & Highly Repetitive of tools for up to 2 minutes at a time for up to 4-6 hours total in a work shift. Most commonly occurs with weights of 8 pounds while hitting the anvil with a hammer to remove the kinks from the overhead contact system, as well as the 8 pound grips while working on overhead contact system and equipment as well as when using various hand tools.

**Carrying 1-10 pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Continuously for 2.5 hours at a time for up to 8 hours total in a work shift. Most commonly occurs with weights of 8 pounds while carrying personal tools around work site as well as constantly wearing a safety harness (3-4 pounds), two way radio, etc.

**Lifting 11-20 pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally of tools and equipment for 2-10 minutes at a time for up to 1 hour total in a work shift. Most commonly occurs with weights of 20 pounds while utilizing hand and power tools when working on the overhead contact system.

**Carrying 11-20 pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally for distances of up to 200 feet for up to 3 minutes at a time for up to 2 hours total in a work shift while moving various tools and equipment. Most commonly occurs with weights of 20 pounds while moving tools and equipment back and forth onto tower truck.

**Lifting 21-50 pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally to frequently & Highly Repetitive for up to 10-15 minutes at a time for up to 2-3 hours total in a work shift. Most commonly occurs with weights of 23-50 pounds to operate a chain saw (30 pounds) while trimming trees, moving overhead contact system (up to 50 pounds), and using hoists and cutters (23 pounds) as well as to maneuver up to 50 pounds while setting poles.

**Carrying 21-50 pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally of hoists, tools, anvil for distances of up to 200 feet for 2-3 minutes at a time for up to 1 hour total in a work shift. Most commonly occurs with weights of 30-50 pounds while setting poles and replacing overhead contact system hardware as well as when hauling tools and materials to and from the truck.

**Lifting 51-100 pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally for 1-2 minutes at a time for up to 1 hour total in a work shift. Most commonly occurs with weights of 60-80 pounds while balancing the crossovers, switches, breakers etc. while they are being installed. The employee also loads equipment on/off of truck such as a generator, compressor, etc. Help is available on most occasions for these duties.

**Carrying 51-100 pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally for up to 50 feet for 3 minute at a time for up to 1 hour total in a work shift. Most commonly occurs with weights of 60-80 pounds while replacing and installing overhead contact system. The employee also carries while moving crossovers, switches, breakers etc. The employee also loads equipment on/off of truck such as a generator, compressor, etc.

**Lifting 100+ pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Rare to Occasionally for up to 1 minute at a time for up to 10 minutes total in a work shift. Most commonly occurs with weights of 150 to 170 pounds while manipulating generators, cantilever assembly, switch gear, breakers, etc. These duties do not happen on a daily basis and help is available on most occasions for these duties.

**Carrying 100+ pounds**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally of switches, bags of sand and asphalt for distances up to 50 feet for up to 3 minutes at a time for up to 30 minutes total in a work shift. Most commonly occurs with weights of 150 to 170 pounds while manipulating generators, cantilever assembly, switch gear, breakers, etc. These duties do not happen on a daily basis and help is available on most occasions for these duties.

**Pushing and Pulling**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally to frequently of chain hoists with a force of up to 80-100 pounds for up to 30-60 minutes at a time for up to 1-3 hours total in a work shift while cranking the chain hoists to raise tension on wires. Pulling up switches from ground level to tower truck with a force of 100+ pounds for distances of 14 feet, from ground level to tower truck, for 1 minute at a time for up to 5-6 minutes total in a work shift. The employee also cranks a hoist for up to 30-60 minutes at a time with up to 30 pounds of force for up to 1-2 hours total in a shift. Worker also handles cable that is up to 1 inch in diameter weighing 3 pounds per foot and may pull up to 100 pounds for up to 1 minute at a time. Cable is most commonly pulled into vaults, overhead contact system and conduits with power winches. Cable is racked on the walls of the vaults by Employee. Cable has to be shaped and bent using wrenches and crimpers. May have to splice wires as well. On a very rare occasion the employee may need to push or pull with up to 150 pounds of force to manipulate materials.

**Handling**

Health Care Provider initials if restricted \_\_\_\_\_

Continuously & Highly Repetitive while grasping and torquing with anvil and hoists for up to 30-60 minutes at a time for up to 6 hours total in a work shift while performing preventative maintenance, manipulating materials and using various hand tools.

**Operating Controls with Hands**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently for up to 30 minutes at a time for up to 4 hours total in a work shift while operating tower truck lift controls and various County vehicles.

**Fingering**

Health Care Provider initials if restricted \_\_\_\_\_

Frequently while repairing switches of small parts for up to 2 minutes at a time for up to 4 hours total in a work shift while performing control work, control maintenance, repairing switch mechanisms and performing maintenance at traction power substation.

**Feeling**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally for up to 5 minutes at a time for up to 2 hours in a work shift. Most commonly occurs when feeling for hidden bolts, nuts and equipment as well as when identifying equipment malfunction and utilizing/manipulating small parts.

**Talking**

Health Care Provider initials if restricted \_\_\_\_\_

Occasionally to frequently for up to 5 minutes at a time with the Foreman on the ground level for up to 2-4 hours total in a work shift while obtaining instructions and plans as well as when communicating with the work partner when working on live lines.

**Hearing**

Health Care Provider initials if restricted \_\_\_\_\_

Continuously for up to 8 hours at a time during work shift while listening to traffic, co-workers, supervisor, and/or pedestrians while performing all job duties.



### SIGNATURES

Signatures on this page are obtained before the document becomes available for use and are not required each time the document is reused. Obtained signatures are kept on file at King County Safety & Claims. The Health Care Provider signature section is separate and appears on the following page.

Kyle Pletz, VRC, Vocational Consultant

Printed name & title of VRC evaluator

\_\_\_\_\_  
Signature of VRC evaluator

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name & title of contact

\_\_\_\_\_  
Signature of contact

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed name & title of employee

\_\_\_\_\_  
Signature of employee

\_\_\_\_\_  
Date

**HEALTH CARE PROVIDER SECTION**

**Check all that apply**

The employee is released to perform the described duties without restrictions on performance or work hours as of \_\_\_\_\_.

The employee is released to perform the described duties on a reduced schedule as of \_\_\_\_\_. The recommended schedule is:

Temporary until \_\_\_\_\_  Permanent as of \_\_\_\_\_

The employee is released to perform the described job with the following modifications:

Temporary until \_\_\_\_\_  Permanent as of \_\_\_\_\_

The employee is not released to perform the described duties due to the following job functions:

Temporary until \_\_\_\_\_  Permanent effective \_\_\_\_\_

The employee is unable to work in any capacity.  
A release to work is:  anticipated by \_\_\_\_\_  Not expected

**The limitations are due to the following objective medical findings:**

Printed or typed name and phone number of Health Care Provider

Signature of Health Care Provider

Date