



Bock Consulting

Job Analysis

Job Title	Electrician/Wireman (AVM)	Worker	
DOT Number	829.261-018 and 824.281-010	Claim Number	
Employer	Port of Seattle	Employer Phone	(206) 787-3000
Employer Contact	Darin Benofsky	Date of Analysis	8/11; 1/17; 12/18; 8/23/2021

Job of Injury
 Transferable Skills Job
 New Job
 40 Hours Per Week
 5 Days Per Week

Job Description, Essential Functions, Tasks and Skills:



The Port of Seattle is a municipal corporation created on September 5, 1911 by the voters of King County. The Port of Seattle is divided into operating divisions, plus other departments that support the divisions and the broad mission of the Port: 1) Aviation Division, 2) Maritime Division, and 3) Economic Development Division.

The Aviation Division owns and operates Seattle-Tacoma International Airport. Sea-Tac Airport handles more than 40 million passengers a year, and offers state-of-the-art air cargo facilities. The Aviation Division employs a maintenance staff which is responsible for all tasks associated with the maintenance and on-going operations at Sea-Tac Airport.

This job analysis is for an individual working as an Electrician/Wireman for Aviation Maintenance.

Essential Functions:

The regional power supplier delivers electricity to two substations on the Sea-Tac Airport property, and the employees of the Aviation Maintenance Electrical Shop are then responsible for distribution of power and maintenance of the distribution systems for all of the standard and emergency electrical systems at Sea-Tac Airport.

An Electrician/Wireman working for Aviation Maintenance performs all tasks related to the installation, operation, repair, and maintenance of all applicable electrical systems. These systems encompass systems that range from low voltage systems to systems up to 15,000 volts. Electricians/Wiremen may work on general system components, or specific electrical systems, such the systems





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that provide power the airfield, conveyance systems, loading/jet bridges, overhead doors, or security gates. Electricians/Wiremen are staffed 24 hours per day, 365 days a year on three shifts.

The Electricians/Wiremen have central workshops, but most of their work is performed in the field. While in the field, work may be performed outside, or in buildings or vaults.



Tasks assigned to Electricians may include:

- Meet/connect with Foreman on a daily basis.
- Request and gather parts, supplies, and/or materials needed for projects.
- Prepare and/or review job hazard analysis for each project. Review job plan. Ensure work is performed in a safe manner.
- Perform maintenance, troubleshooting, and repair tasks of electrical systems associated with Aviation Div. facilities.
- Repair/replace breakers, vaults, cables, power centers, power and lighting panels, emergency power generation equipment, HVAC motor controls, PLCs, watt hour and demand metering, automated monitoring and control systems, fault indicators, capacitors, regulators, and surge suppression devices.
- Respond to emergency power problems and/or requests for assistance. NOTE: Aviation Maintenance Electricians are staffed on three shifts and cover airport operations 24-hours a day, seven days a week. It is possible that workers may have to work overtime and/or be called in for unscheduled work to address critical situations.
- Enter time by work order on a daily basis into job tracking system (Maximo).
- Enter description of work completed in work log.
- Send and respond to electronic mails.
- Attend periodic meetings during which training is provided and important safety issues are discussed.
- Assist other crafts as requested.
- Potentially supervise apprentices.
- Complete all required forms and documents.
- Perform other tasks as requested.





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Necessary skills and abilities may include:

- Working knowledge of the National Electrical Code, OSHA, WISHA, and Port of Seattle safety requirements.
- Ability to read and interpret blueprints.
- Skills to complete the assigned task(s) in a timely and efficient manner.
- Ability to use power and hand tools, as well as meters for testing, troubleshooting and repairing of electrical equipment, splicing and terminating of high voltage cables, and welding equipment in a safe manner.
- Ability to utilize critical thinking and judgment in defining, analyzing, and resolving problems.
- Able to take initiative and be responsible for getting work done with limited supervision in an expedient and timely fashion. Must be able to work independently and demonstrate effective judgment and decision making.
- Possess proven skills denoting attention to detail and accuracy.
- Excellent time management and prioritization skill, with the ability to multi-task.
- Ability to communicate effectively, both verbally and in writing.
- Excellent interpersonal skills (including on radio).
- Identifying the best method to correctly complete an assigned task.
- Working knowledge of “Arc Flash” exposure environments with PPE and proper procedures.
- Work in a professional manner while in the field. Often the Electricians/Wiremen are visible to Port tenants and the public, and the workers need represent the Port well while working.
- Ability to safely operate a motor vehicle.
- Must have the ability to perform assigned duties in various types of weather, and be able to complete work heights and in confined spaces.
- Ability to follow directions closely.
- Working knowledge of Windows-based computers, related accessories, time tracking software, keyboarding, data input skills, and electronic mail software.





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Machinery, Tools, Equipment, Personal Protective Equipment:

- Electrical assemblies and components.
- Hand tools and power tools, including pliers, drills, wrenches, hammers, screwdrivers, mauls, reciprocating saws, roto-hammers, band saw, conduit benders, fish tape, and tape measures. Shovels and brooms. Wet/dry vacuums.
- Extension cords. Lights.
- Welding equipment.
- Portable generators. Air compressors. Wire tuggers.
- Tool boxes, buckets, or bags.
- Spools of wire.
- Nylon straps and ropes.
- Hand trucks. Wheeled carts.
- Work trucks. Scooters (small 4-wheeled vehicles).
- Scissor lifts. Manlifts. Ladders. Bucket trucks.
- Forklifts.
- 2-way radios.
- Traffic cones.
- Lockout/tagout devices.
- Lockers.
- Computer, computer accessories, and project management software (Maximo). General office equipment, such as fax machine and telephones. General office supplies, such as pens/pencils, notepads, binders, and copy paper.



Electricians are required to wear a safety vest and approved safety boots/footwear at all times. Eye and ear protection, respirators, and hard hats are required as necessary. Electricians may also wear gloves, kneepads, and rain gear. Fall arrest harnesses are worn when working at heights, or may be worn when working over or near a sub-surface vault.



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Education / Training:

Electricians working for the Port of Seattle are certified as Journeyman Electricians/Wiremen. Journeyman Electricians are qualified to work in all phases of work (i.e., construction, tenant improvements, and maintenance), and on various types of electrical systems. Electricians at the Port of Seattle are represented by the International Brotherhood of Electrical Workers Local 46-Seattle.

Minimum Requirements: Completion of a Washington State approved electrical apprenticeship or equivalent program or experience. Must have a valid Washington State EL01 Electricians Certificate. Must possess a valid Washington State driver's license, and have the ability to obtain a Commercial Driver's License (CDL) (if required), and pass a security background check.

Preferred Qualifications: Five years working experience as a Journey level Electrician/Wireman in a maintenance environment. Strong background with electronics, PLCs, ladder logic, VFDs, and GPUs. Windows-based computer knowledge and radio communication skills. Certified Cable Splicer.

Training and/or enough hands-on experience with computers to have a working knowledge of Windows-based computers, related accessories, time tracking software, keyboarding, data entry, and electronic mail software.

Per the Dictionary of Occupational Titles (DOT):

829.261-018 Electrician, Maintenance

Specific Vocational Preparation (SVP): 8 (From four to ten years)

829.261-018 Airport Electrician

Specific Vocational Preparation (SVP): 7 (From two to four years)



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COGNITIVE AND BEHAVIORAL ELEMENTS/DEMANDS

Frequency Definitions:		
<p>Continuously = Occurs 66-100% of the time. Occasionally = Occurs 1-33% of the time Frequently = Occurs 33-66% of the time. Rarely = May occur less than 1% of the time. Never = Does not ever occur.</p>		
Comprehension		
Articulating and comprehending information in conversations.		Continuously
Reading, comprehending, and using written materials.		Occasionally
Understanding and solving problems involving math and using the results.		Occasionally
Using technology/instruments/tools & information systems.		Continuously
Working with two and three dimensional formats.		Occasionally
Remembering		
Remembering spoken instructions.		Continuously
Remembering written instructions.		Frequently
Remembering visual information.		Continuously
Recalling information incidental to task at hand.		Continuously
Memorizing facts or sequences.		Frequently
Remembering simple instructions.		Continuously
Remembering detailed instructions.		Continuously
Learning & Processing		
Effectively learning and mastering information from classroom training.		Occasionally
Effectively learning and mastering information from on-the-job training.		Continuously
Learning from past directions, observations, and/or mistakes.		Continuously
Using common sense in routine decision making.		Continuously
Recognizing and anticipating potential hazards and taking precautions.		Continuously
Thinking critically and making sound decisions.		Continuously
Integrating ideas and data for complex decisions.		Occasionally
Determining and following precise sequences.		Frequently
Coordinating and compiling data and information.		Occasionally
Analyzing, synthesizing data and information.		Occasionally
Tasking and Planning		
Performing repetitive or short-cycle work.		Occasionally
Working under specific instructions.		Continuously
Completing complex tasks.		Continuously
Directing, controlling, or planning for others as necessary for basic tasks.		Occasionally
Directing, controlling, or planning for others as necessary for complex tasks.		Rarely
Multi-tasking.		Continuously
Planning, prioritizing, and structuring daily activities.		Continuously



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Use Appropriate Behavior for Professional Work Environment	
Receiving criticism and accepting limits appropriately.	Occasionally
Maintaining emotional control and organization under increased stress.	Continuously
Maintaining socially appropriate affect, temperament, and behavior.	Continuously
Monitoring own quality of performance and altering behaviors to correct mistakes or improve outcome.	Continuously
Working independently and/or unsupervised.	Continuously
Adapting to frequent interruptions, changes in priorities, or changes in work location.	Occasionally
Responding effectively to emergency situations.	Occasionally

Frequency Designations: Required Beneficial Not Necessary	
Maintaining Attendance and Assigned Work Schedule	
Maintaining predictable and reliable attendance each work shift.	Beneficial
Being punctual.	Beneficial
Taking rest periods at set times or only at times determined by breaks in job responsibilities.	Not Necessary
Adjusting to a flexible schedule of work days and/or shifts.	Not Necessary



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PHYSICAL DEMANDS

N/A: Not Applicable

S: Seldom (1-10% of the time)

O: Occasional (10-30% of the time)

STRENGTH: Sedentary Light

F: Frequent (30%-70% of the time)

C: Constant (Over 70% of the time)

WNL: Within Normal Limits (talking, hearing, etc.)

Medium Heavy Very Heavy

Frequency

Comments

Sitting	O	While driving truck or scooter to job sites, attending meetings, or for short periods of time while working in the field.
Standing	F	Interchange with walking. Frequency will depend on assigned tasks.
Walking	F	Interchange with standing (larger percentage of time is spent walking than standing). Frequency will depend on assigned tasks. Walking may be over concrete, asphalt, tile, grass, dirt/mud, or uneven (such as rip-rap (large rocks)) or slippery surfaces.
Lifting (up to 10 pounds)	F	Electrical parts and accessories, smaller electrical assemblies, hand and power tools, rolls/spools of wire (500' reel of wire is approx. 5-10 lbs.), sticks of conduit, and traffic cones.
Lifting (10 to 20 pounds)	O	Lifting mid-sized assemblies and components, power tools, boxes of electrical supplies, bag holding selected tools (10-20 lbs.), and ladders.
Lifting (20 to 40 pounds)	S	Lifting toolbox, large assemblies and components, runway lights (35-40 lbs.), coils of flex conduit (35 lbs.), and rolls/spools of wire (2,500' reel of wire is approx. 35 lbs.). Note: Larger items, such as large electrical panels or panel covers, temporary power cords, loading bridge control cables, larger transformers, motors, and generators or compressors, are lifted by two workers, and/or equipment (including hoists or forklifts) to reduce the amount of necessary lifting.
Carrying (up to 10 pounds)	F	Electrical parts and accessories, smaller electrical assemblies, hand and power tools, rolls/spools of wire (500' reel of wire is approx. 5-10 lbs.), sticks of conduit, and traffic cones.
Carrying (10 to 20 pounds)	O	Lifting mid-sized assemblies and components, power tools, boxes of electrical supplies, bag holding selected tools (10-20 lbs.), and ladders.
Carrying (20 to 40 pounds)	S	Typically short distances. Lifting toolbox, large assemblies and components, runway lights (35-40 lbs.), coils of flex conduit (35 lbs.), and rolls/spools of wire (2,500' reel of wire is approx. 35 lbs.). Note: Larger items, such as large electrical panels or panel covers, temporary power cords, loading bridge control cables, larger transformers, motors, and generators or compressors, are lifted by two workers, and/or equipment (including hoists or forklifts) to reduce the amount of necessary lifting.
Pushing/Pulling (Up to 20 pounds of force).	F	Pulling wire through conduit, pushing while using drill or roto-hammer, pushing while using screw driver, using wrenches to tighten or loosen bolts/nuts, using a hammer or maul, and pulling/pushing wheeled carts holding tools, supplies, and equipment.
Pushing/Pulling (20 pounds to est. 40 pounds of force).	S	Pulling larger wire/cable through conduit, pushing while using drill or roto-hammer, using wrenches to tighten or loosen bolts/nuts, using a hammer or maul, and opening manhole or vault.



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Climbing Stairs/Ladders	O	Frequency depends on assigned tasks. Workers may encounter stairs in the field. Electricians climb ladders as necessary (ladders can be freestanding ladders ranging from stepstools to 24' extension ladders, or ladders attached to equipment or trucks).
Working at Heights/ Balancing	O	Frequency depends on assigned tasks. Electricians climb ladders, and may work from a man lift or bucket truck (the largest bucket truck has an 80 foot arm). Electricians may also work near open vaults. Fall protection is required when the risk of a fall is greater than 6 feet.
Bending at Waist	F	Performing inspections, installations, and repairs. While working at a shop workbench. Gathering materials and supplies from carts, shelves, or work truck.
Bending Neck	C	All of the assigned tasks involve neck movement: conducting inspections, performing repairs, pulling new wire, installing fixtures and assemblies, climbing ladders and gathering electrical parts and components.
Twisting at Waist	O	While maneuvering/reaching into work areas, installing fixtures.
Crouching/Kneeling	O	Working below waist level, gathering items stored at or below waist level, potentially while working below feet. Note: Workers may wear kneepads while working.
Crawling	S	Workers may wear kneepads while working.
Stooping	O	While entering/exiting truck or other vehicle, and maneuvering into and out of work areas.
Reaching	F	Uninstalling and installing assemblies, disconnecting and removing wires, pulling wires through conduit and making electrical connections, climbing ladders, gathering supplies and materials from truck or supply area. Note: Reaching heights would be from the floor to over the shoulder on an equal frequency. Note: Workers try to position themselves where the work is primarily performed between shoulder and waist heights.
Driving	O	Driving truck or scooter to work sites.
Foot Controls	O	Driving truck or scooter to work site, and using safety switches on man lifts.
Repetitive Motion	O	Frequency will depend on assigned tasks. Pulling wire through conduit. Gripping wire strippers and pliers. With effort, a worker can vary the sequence of the tasks being completed to mitigate repetitive motions.
Handling/Grasping	F	40 % Pinch Grasp 60 % Whole Hand Grasp
Fine Finger Manipulation	F	Using wrenches, screwdrivers, and pliers, triggers on power tools, keys to start vehicles and enter buildings, gathering and holding couplings/small parts, and operating two-way radio.
Talking	C	Communicating with supervisors, co-workers, tenants, and the public.
Hearing	C	Communicating with supervisors, co-workers, tenants, and the public. Listening for signs of danger or alarms, and radio traffic.
Seeing	C	Visual abilities would be considered important in this position.
Writing	O	While documenting inspections and completed preventive maintenance tasks, taking notes regarding completed work, drafting reports regarding system issues.



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Keyboarding	S	While entering time and work performed on a daily basis, creating and responding to electronic mail. Potentially while documenting inspections and writing reports regarding system issues.
Normal Job Site Hazards	C	Working with electricity (risk of electrocution), working at heights (ladders, man lifts, bucket trucks, or near open vaults), confined spaces, carrying heavy objects, falling objects, striking head on overhead objects, working near moving vehicles, slippery walking surfaces, sharp tools, fumes, dust, noise, odors, and vibrations.
Expected Environmental Conditions	C	Work may be performed inside temperature-controlled buildings, or outside exposed to the weather. Worker may be exposed to noisy environments, dust, and fumes.

The above job analysis represents the requirements of a specific job based on personal observations, discussions with employer representatives, and/or workers. On occasion, practicality and feasibility prevent the direct observation and/or gathering of objective quantifiable data. For this reason, a "best estimate" may have been used when reporting physical demand frequencies.

Analysis was done on the job site? Yes No

Job Analysis Reviewed By: Dan Hytry; Darin Benofsky

Completed by Vocational Provider Brice York, CDMS

Date August 23, 2021 Signature of Vocational Provider 



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FOR PHYSICIAN'S/EVALUATOR'S USE ONLY

- The injured worker can perform the physical activities described in the job analysis and can return to work on _____
- The injured worker can perform the physical activities described in the job analysis on a part-time basis for _____ hours per day. The worker can be expected to progress to regular duties in _____ weeks/months.
- The injured worker can perform the described job, but only with the modifications/ restrictions in the attached report and/or listed below. These modifications/restrictions are (check one):
 - Temporary for _____ weeks _____ months
 - Permanent
- The injured worker cannot perform the physical activities described in the job analysis based on the physical limitations in the attached report and/or listed below. These limitations are (check one):
 - Temporary for _____ weeks _____ months
 - Permanent

COMMENTS:

Date _____ Physician's/Evaluator's Signature _____

Physician's/Evaluator's Name Printed _____

PLEASE RETURN COMPLETED FORM VIA FACSIMILE TO:

Port of Seattle Employee Health & Safety Department at (206) 787-3406