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Job Analysis

Job Title	Electrical Shop Crew Chief (MM)	Worker	
DOT Number	829.261-018 and 829.131-014	Claim Number	
Employer	Port of Seattle	Employer Phone	(206) 787-3000
Employer Contact	Chris Todd	Date of Analysis	1/18/08; 6/1/11; 9/13/17; 4/18/18

- 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 Maritime Division owns and operates approximately 1,200 acres of moorage, cargo-related, and cruise ship facilities. The Maritime Division employs a maintenance staff, which is responsible for general facility upkeep, pier and moorage system repairs, and utility maintenance.

This job analysis is for an individual working as an Electrical Shop Crew Chief for Marine Maintenance.

Essential Functions:

An Electrical Shop Crew Chief are responsible for the day-to-day supervision and organization of the Electricians who perform all electrical maintenance, repair, and modification tasks for properties managed by the Port of Seattle Real Estate Division. A Crew Chief is also expected to perform trade-specific work on a consistent basis.

Electricians have centralized workshops, but most of their work is performed on-site at one of the properties owned by the Port of Seattle. Work may be performed in buildings, outside, or from a boat under piers and docks.



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***Job Analysis: Electrical Shop Crew Chief (Marine Maintenance) – Port of Seattle
DOT #829.261-018 and #829.131-014***

The work performed by an Electrical Shop Crew Chief can be categorized as follows:

Work Category	Estimated Time
Office/desk/administrative work (including meetings)	10-20%
Supervising work and personnel and providing assistance in and around shop	0-15%
Supervising work and personnel and providing assistance in the field	5-15%
Performing trade-specific work	50-85%
Total	100%

Tasks assigned to an Electrical Shop Crew Chief may include:

- Receive notifications of new work orders/requests (via telephone, email, or job tracking system). Develop plans for completing requested projects. Plan for material, equipment, PPE, and staffing needs.
- Order parts, supplies, and or materials needed for projects. Work with General Foreman or Purchasing to ensure correct products and items are ordered and available when needed. Periodically work with vendors related to supplies and or materials needed.
- Prepare and or review site specific safety plan for each project/work task. Prepare job plans and supporting documentation as needed.
- Prepare personnel schedules and assign work tasks.
- Coordinate scheduling with other trades to ensure materials, equipment, and workers from other trades are available as needed to complete assigned work orders/projects. Coordinate with outside vendors/contractors/entities. Coordinate scheduling with Port Facility Maintenance Managers and tenants.
- Enter time by work order on a daily basis into job tracking system (Maximo). Review daily time entered by crew and approve, as applicable.
- Ensure description of work completed is available and or correct in work log.
- Complete all required forms and documents.
- Send and respond to electronic mails.
- Visit project sites and oversee/inspect completed work. Ensure work is being performed in a safe manner.
- Meet/connect with crew (as applicable) daily to manage workflow, address issues, and reassign personnel based on work demands.
- Potentially lead periodic meetings to provide training and discuss important safety issues.
- Attend periodic meetings with supervisors and other entities.
- Coordinate work priorities with supervisors.
- Assist Electricians with technical input, answer questions from crew, and provide troubleshooting



***Job Analysis: Electrical Shop Crew Chief (Marine Maintenance) – Port of Seattle
DOT #829.261-018 and #829.131-014***

advice as needed.

- Assist crew in choosing tools, equipment and materials
- Ensure crew has current certifications and or training as required by law or ordinance.
- Potentially assist with responds to requests for bids.
- Potentially supervise apprentices.
- Perform maintenance, troubleshooting, and repair tasks of electrical systems associated with Marine Maintenance facilities. Repair/replace breakers, vaults, cables, power centers, power and lighting panels, emergency power generation equipment, HVAC motor controls, programmable logic controllers (“PLCs”), watt hour and demand metering, automated monitoring and control systems, fault indicators, capacitors, regulators, and surge suppression devices.
- Provide power to miscellaneous vessels from dock-based systems.
- Respond to emergency power problems and/or requests for assistance. NOTE: A Crew Chief generally works 40 hour work weeks; however it is possible that a worker may have to work overtime and/or be called in during the evening hours to address a critical situation.
- Assist other crafts as requested.
- Perform other tasks as requested.



Necessary skills and abilities may include:

- Identifying the best method to correctly complete an assigned task.
- Having a working knowledge of the National Electrical Code, OSHA, WISHA and Port of Seattle requirements.
- Have working knowledge of “Arc Flash” exposure environments along with PPE and proper procedures.
- Ability to read and interpret blueprints.
- Having the skills to complete the assigned task(s) in a timely and efficient manner.
- Must have the ability to operate all applicable shop tools, meters for testing, troubleshooting, repair of electrical equipment, tools of the trade, and assigned maintenance support equipment.
- Having well-developed interpersonal skills that are conducive toward working effectively in a team-oriented environment, but also being able to work independently without immediate direct supervision.
- Must have good communication skills (including on radio).
- Working in a professional manner while in the field. Often a Crew Chief will be visible to Port tenants and the public, and the Crew Chief represents the Port well while working.
- Must have the ability to safely operate a motor vehicle.





***Job Analysis: Electrical Shop Crew Chief (Marine Maintenance) – Port of Seattle
DOT #829.261-018 and #829.131-014***

- Must have the ability to perform assigned duties in various types of weather, and be able to complete work heights, in confined spaces, or from a boat.
- Having the ability to follow directions closely and to be detailed oriented while working.
- Working knowledge of Windows-based computers and related accessories. Working knowledge of time tracking software, keyboarding and data input skills, and knowledge of electronic mail software.

Machinery, Tools, Equipment, Personal Protective Equipment:

- Hand tools and power tools, including pliers, drills, wrenches, hammers, screwdrivers, mauls, reciprocating saws, roto-hammers, conduit benders, fish tape, and tape measures.
- Tool boxes, buckets, or bags.
- Spools of wire.
- Electrical assemblies and components.
- Nylon straps and ropes.
- Hand trucks. Wheeled carts.
- Portable generators. Air compressors.
- Work trucks with storage boxes (some with hoists).
- Shovels and brooms. Wet/dry vacuums.
- Scissor lifts, manlifts, ladders, and boom lifts. Forklifts.
- Work skiffs/boats (14 and 16 foot boats) with outboard engines.
- 2-way radios. Traffic cones.
- Tide chart.
- Computer, computer accessories, and project management software (Maximo).
- General office equipment, such as desk, chair, fax machine, telephones, and calculator.
- General office supplies, such as pens/pencils, notepads, binders, file folders, and copy paper.



A Crew Chief is 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. A Crew Chief 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 station.

When working on or within 6 feet of an edge of the water, a Crew Chief must wear personal floatation devices (“PFDs”).



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Claimant:
Claim #:
1/18/08; 6/1/11; 9/13/17; 4/18/2018
Page 5 of 12

***Job Analysis: Electrical Shop Crew Chief (Marine Maintenance) – Port of Seattle
DOT # 829.261-018 and #829.131-014***





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DOT #829.261-018 and #829.131-014***

Education / Training:

The Electrical Shop personnel, including the Crew Chiefs, are represented by the International Brotherhood of Electrical Workers Local # 46.

A Crew Chief is a Journeyman level Electrician with significant experience in various phases of electrical work (i.e., construction, tenant improvements, and maintenance), and experience with various types of electrical systems.

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

A Crew Chief must also complete the Front Line Supervisor Training as a Port of Seattle requirement. This training is offered once a year and must be completed during the first year as a Crew Chief.

A Boater's Education Card is required for all employees who perform work while in a boat or standing on a work float.

Per the Dictionary of Occupational Titles (DOT):

829.261-018 Electrician, Maintenance

829.131-014 Electrician Supervisor.

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

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DOT #829.261-018 and #829.131-014

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.		Frequently
Using technology/instruments/tools & information systems.		Continuously
Working with two and three dimensional formats.		Frequently
Remembering		
Remembering spoken instructions.		Continuously
Remembering written instructions.		Continuously
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.		Continuously
Working under specific instructions.		Continuously
Completing complex tasks.		Occasionally
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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Claimant:
Claim #:
1/18/08; 6/1/11; 9/13/17; 4/18/2018
Page 8 of 12

**Job Analysis: Electrical Shop Crew Chief (Marine Maintenance) – Port of Seattle
DOT #829.261-018 and #829.131-014**

Use Appropriate Behavior for Professional Work Environment	
Receiving criticism and accepting limits appropriately.	Frequently
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 An 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.	Beneficial



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 DOT #829.261-018 and #829.131-014**

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 performing administrative duties, driving 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. May include standing in a boat while working.
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, grating, or tile, or over uneven (such as rip-rap (large rocks) or dirt) or slippery surfaces (including mud and wet wooden docks).
Lifting (up to 10 pounds)	F	Electrical parts and accessories; smaller electrical assemblies; hand and smaller power tools; rolls/spools of wire (500' reel of 12 gauge wire is approx. 10 lbs.); boxes of electrical supplies; smaller ladders; traffic cone.
Lifting (10 to 25 pounds)	O	Mid-sized assemblies and components; larger power tools; bucket/bag of tools; larger ladders.
Lifting (25 to 90 pounds)	S	Large assemblies and components; larger hook-up cables for large moored ships; coils of flex conduit (35 lbs.); toolbox or bucket of tools; disconnects for large ships moored at piers (approx. 70 lbs.); moving generators or compressors. Note: Heavier items can be lifted by two workers, and/or equipment (including hoists or forklifts) is available to reduce the amount of necessary lifting.
Carrying (up to 10 pounds)	F	Electrical parts and accessories; smaller electrical assemblies; hand and smaller power tools; rolls/spools of wire (500' reel of 12 gauge wire is approx. 10 lbs.); boxes of electrical supplies; smaller ladders; traffic cone.
Carrying (10 to 25 pounds)	O	Mid-sized assemblies and components; larger power tools; bucket/bag of tools; larger ladders.
Carrying (25 to 90 pounds)	S	Large assemblies and components; larger hook-up cables for large moored ships; coils of flex conduit (35 lbs.); toolbox or bucket of tools; disconnects for large ships moored at piers (approx. 70 lbs.); moving generators or compressors. Note: Heavier items can be carried by two workers, and/or equipment (including hoists or forklifts) is available to reduce the amount of necessary carrying.
Pushing/Pulling (Up to 25 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; pulling wheeled carts holding tools, supplies, and equipment; opening manhole or a hatch covering connections used for ships.
Pushing/Pulling (25 to est. 90 pounds of force)	S	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; pulling wheeled carts holding tools, supplies, and equipment (particularly when wheeling a cart up a dock ramp when the tide is out); opening manhole or a hatch covering connections used for ships.



Job Analysis: Electrical Shop Crew Chief (Marine Maintenance) – Port of Seattle
DOT #829.261-018 and #829.131-014

Climbing Stairs/Ladders	O	Workers may encounter stairs in the field. There are also stairs in the Maintenance Shop. Crew Chiefs climb ladders as necessary (ladders can range from stepstools to 24' extension ladders).
Working at Heights/ Balancing	O	Frequency depends on assigned tasks. Crew Chiefs climb ladders, and may work from a man lift or while standing on staging constructed under docks. Electrical Shop Crew Chiefs in Marine Maintenance may also have to work from boats when necessary, which can take a significant amount of balance.
Bending at Waist	F	Performing assessments, inspections, installations, and repairs. While working at a shop workbench. Any work performed in a trench. 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; 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 the Crew Chief's feet (in a hole in the dirt or on a dock). Note: Workers may wear kneepads while working.
Crawling	S	Workers may wear kneepads while working.
Stooping	O	While entering/exiting work truck cab and enclosure on back of truck; 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	S-O	Driving work trucks to work sites.
Foot Controls	S-O	Driving work trucks, 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 truck and enter buildings, gathering and holding couplings/small plumbing parts, and operating two-way radio.
Talking	F	Communicating with supervisors, co-workers, tenants, and the public.
Hearing	F	Communicating with supervisors, co-workers, tenants, and the public.
Seeing	C	Within normal limits, with or without correction.
Writing	S	While documenting inspections and completed preventive maintenance tasks; taking notes regarding completed work; drafting reports regarding system issues.



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DOT #829.261-018 and #829.131-014**

Keyboarding	S-O	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, or roofs), in 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, vibrations, and capsizing while working in a boat.
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: Tom Berg and Chris Todd

Completed by Vocational Provider Brice York, BA, CDMS

Date April 18, 2018 Signature of Vocational Provider 



Bock Consulting

Claimant:
Claim #:
1/18/08; 6/1/11; 9/13/17; 4/18/2018
Page 12 of 12

**Job Analysis: Electrical Shop Crew Chief (Marine Maintenance) – Port of Seattle
DOT #829.261-018 and #829.131-014**

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