

STATE OF ALASKA
DEPARTMENT OF TRANSPORTATION & PUBLIC FACILITIES
Public Employees Local 71 (LTC)
REQUEST FOR REFERRAL

DIVISION: 25-DOT/M&O Nome		PCN: 25-2144 (Position Description Attached)	
JOB CLASS/TITLE: Maintenance Specialist – Electrician Jrny II/Lead		WHEN POSITION IS NEEDED: ASAP	
WAGE GRADE: 51		DUTY STATION: Nome Airport	
<input checked="" type="checkbox"/>	Permanent Full-Time	<input type="checkbox"/>	Permanent Full-Time Seasonal
<input type="checkbox"/>	Permanent Part-Time	<input type="checkbox"/>	Permanent Part-Time Seasonal
<input type="checkbox"/>	Non-Perm Full-Time	<input type="checkbox"/>	Non-Perm Part-Time

WORK SCHEDULE: Varies	
TRAVEL REQUIRED: <input checked="" type="checkbox"/> YES / <input type="checkbox"/> NO	
COMMENTS/SPECIAL REQUIREMENTS: Journeyman Electrician Certificate of Fitness issued by the SOA Department of Labor. Valid Alaska Drivers License.	
CANDIDATE MUST BRING TO INTERVIEW: <input checked="" type="checkbox"/> Completed Workplace Alaska Application (if not already submitted to the hiring manager by Local 71) <input checked="" type="checkbox"/> Completed Certification of Employment as a Commercial Motor Vehicle Operator 10-year history form <input checked="" type="checkbox"/> Criminal Convictions: Must provide a copy of the judgement from the Court for <u>any</u> Felony Conviction (regardless of date) and any Misdemeanor Conviction within the last 5 years. For positions requiring APSIN* clearance, must provide judgement for <u>all</u> convictions regardless of date. <input checked="" type="checkbox"/> Copy of certifications and licenses <input type="checkbox"/> Other:	
<i>Note: Candidates who do not bring the required information to the interview may be rejected.</i>	
CONTACT: Joleen Nash	PHONE NUMBER: 907-452-5024 FAX NUMBER: 907-456-1771 EMAIL ADDRESS: joleen@local71.com

JOB DESCRIPTION: This person works independently in the electrical trade to construct, troubleshoot, repair and maintain State airports and facilities within the guidelines of current State statutes and codes in the most efficient and economical manner possible. This position has responsibilities for electrical needs in the Western District.
SPECIAL REQUIREMENTS: Electrician License
THIS POSITION REQUIRES THE INCUMBENT TO : Perform general duties as assigned. This could include minor carpentry, plumbing, painting, building system troubleshoot & repair, and cleanup. This position will be responsible for all facets of building maintenance when dispatched to remote locations where a multi-craft team is not practical.

2. Duties

2.1. In one or two sentences, state the main purpose of the position.

This person works independently in the electrical trade to construct, troubleshoot, repair and maintain State airports and facilities within the guidelines of current State statutes and codes in the most efficient and economical manner possible.

This position has responsibilities for electrical needs in the Western District.

2.2. Starting from the most to the least important, list the functional areas assigned to the position. Within each functional area, describe the duty statement associated; estimate the percentage of time spent performing the duties; and define each area as essential (E) or marginal (M).

Functional Area Title: Rural Airport Support		
E/M	% of Time	Duty Statement
E	50 %	<p>Fly or drive to remote airports to troubleshoot and repair the airport beacons and runway lighting systems. This includes the rotating beacon, PCL (Pilot Control Lighting), 5 kilovolt runway lighting system, constant current regulator, control relay cabinet, and all power distribution and service equipment. This may also include a standby diesel generator system with automated switching controls. Also do electrical work on the shops as needed. The position will be required to complete installation of new beacons in Northern Region Airports and maintain them. These beacons are designed to be low maintenance and energy efficient. Detailed knowledge of this beacon system is necessary.</p> <p>Coordination/Communication for Rural Airports: Much of this work has to be coordinated with the FAA, our rural contractor, the airlines and the M&O Regional Airports Manager. Provide input for new system needs to FAA, D&ES engineers and design consultants. Responsible for the final inspection and approval of a new runway system installation. Rural airport support may include engineering, data gathering and calculations, coordination of resources, directing work, inspection of work, and administrative duties including bid opening and contract awarding. May act as construction/modification Contract Manager responsible for oversight and direction of capital projects.</p>

Functional Area Title: Design, Construct and Maintain SOA Electrical Systems		
E/M	% of Time	Duty Statement
E	30 %	<p>Design, install, maintain, troubleshoot, and repair a wide variety of electrical systems in the Northern Region including remote facilities. The complexity of buildings varies greatly from rural airport SREBs to the Rabinowitz Courthouse in Fairbanks.</p> <p>Examples of system responsibilities include Class A and B fire alarm systems with duct-smoke detection, heat sensing, flame detection and electromagnetic door releases incorporated into fire alarm panel. Design and install complete electrical portion of liquid to liquid heat exchanger system, all controls, thermostats, pumps, fail-safe shutdowns and unit heaters for generator heat recovery system. Overhead shop door systems with remote control, low voltage control wiring and multiple safety overrides. Research, design, and install new energy saving technology as it becomes available for building lighting. Installing photocells and motion</p>

sensor equipment to control lighting circuits. Rebuilding yard light luminaries with transformers, capacitors, ignitions, wiring, lamps, bases and controls. This includes locating broken underground branch circuits and making necessary repairs. Electrical service, load center, panel board, transformer and distribution repairs, upgrades and installations up to 800 Amp/480 KV, single and three phase. Troubleshoot and repair/replace faulty circuit breakers (including shunt-trip, under-voltage releases, bolt-on and variable trip), understand their design, function, rating, and be familiar with all manufacturer's strong points and weaknesses. Electric motor troubleshooting, repair/replacement of all makes of single and three phase AC/VFD (Variable Frequency Drive) motors up to 150 HP. This includes direct drive, belt driven, multiple starting characteristics (induction, capacitor, etc.), motor starting centers (with thermal overloads, fuses, disconnects and wiring). Use knowledge of motor function and how it integrates into the mechanical system. Be able to size motors for the most efficient use of energy in the application. Be able to troubleshoot, repair/replace HVAC system components including oil-fired boiler/furnace controls (including thermostats and zone valves), electric forced air furnace and unit heaters, electric baseboard heat, portable hot water baseboard heat, electric heaters, damper motors and linkage, filtration systems, refrigeration components (including hermetically sealed motors). DDC (Direct Digital Control) systems including branch circuits load calculation and interpretation of signals and code.

Troubleshooting skills include: testing receptacles for jaw holding strength, tracing out circuits origin and coordinating repairs, inspecting work and handling some contracting of new projects. Have the ability to determine that the completed work has been done to code and project specifications. Make field modifications, redesign systems when obstacles are present and, in general, make sure the contractor has completed all aspects of his contract.

Coordination/Communication: Much of this work has to be coordinated with the Airport Managers, local building manager, contractors, and electrical power utility. Provide input for new system needs to D&ES engineers and design consultants. Responsible for the final inspection and approval of a new electrical service installation. Electrical System support may include engineering data gathering and calculations, coordination of resources, directing work, inspection of work, and administrative duties including bid opening and contract awarding. May act as construction/modification Contract Manager responsible for oversight and direction of capital projects.

Functional Area Title: General Maintenance Activities

E/M	% of Time	Duty Statement
M	15 %	Perform general duties as assigned. This could include minor carpentry, plumbing, painting, building system troubleshoot & repair, and cleanup. This position will be responsible for all facets of building maintenance when dispatched to remote locations where a multi-craft team is not practical.

Functional Area Title: Maintain SOA Electrical Generators

E/M	% of Time	Duty Statement
E	5 %	Maintain, troubleshoot, repair and occasionally replace prime power diesel generator sets in our remote maintenance camps. This includes mechanical component maintenance including the radiator, water pumps, fan pulley assemblies, valve train assemblies, thermostats, injection pumps, injectors, timing, valve lash adjustment, front and rear seals, crankcase emission systems, exhaust systems, fuel and fuel filter systems (including day tanks), starters, air intake systems, DC control system include 12 and 24 volt battery charging systems with alternators and AC charging capability. Complete control system diagnostic and repair including engine shutdown (in case of major component failure), woodward electronic governor (actuator, magnetic pickup, microprocessor based control module and all associated

components), engine running system (microprocessor based control or relay control cabinet).

Generator system preventive maintenance including lubricating oil testing, coolant testing.

Generator system repair can include: replacement of bearings, diodes, rectifier assemblies, flex plates, microprocessor based voltage regulators, potentiometers, gauges and instrumentation, main winding connections, circuit breakers, current transformers, troubleshooting shorts in wiring and loose connections, electrical distribution system repair can include main distribution panel, transformers, overhead power lines and poles, feeder panels, transfer switches (manual and automated), grounding, conduit and metering systems. Repairs can include welding and metal fabrication, heat exchanger and glycol pump maintenance, building cooling and venting systems (this includes multiple thermostats, modulating motors, dampers, control wiring and sheet metal), electric load banking with controls.

Research and provide input for new construction, prime power generation and improvements in existing facilities. Objective: to operate the smallest generator possible and not have a brown-out situation in mid-winter from lack of available power, reducing our operating and maintenance cost. Monitor alternative power generation technologies for viable alternatives to diesel generation.

Percentage Total: 100%

3. Other Work Details

3.1. List the computer software and hardware used to perform the duties described. Estimate how often each is used (e.g. daily, 2-3 times a week, 1-2 times a month, etc.).

Daily use of the Business Interface (BI) maintenance management system and the Maintenance Management System. Daily email use. Daily use of and addition to the maintenance archived data files. Weekly use of Microsoft Office applications. Desktop, laptop, and handheld computers. Use of internet for project research. Frequent use of digital cameras.

3.2. List the equipment and materials used to perform the duties described, including machinery, tools, instruments, vehicles, etc. Estimate how often each is used (e.g. daily, 2-3 times a week, 1-2 times a month, etc.).

All electricians hand tools, fluke 87 multimeter, fluke 80 amprobe, fluke thermocouple and multiple sensors for heat, Simpson analog multimeter, megohmometer, fault cable locator, data-logger complete with hardware for monitoring sound, volts, current, cycles and temperature. This system includes software used remotely with a laptop computer. Woodward Governor frequency synthesizer, Simpson phase tester, inch and ft. pound torque wrenches, micrometers, vacuum gauges, manometers, pressure gauges, hydraulic and manual conduit benders, hydraulic knockout punch, electric and manual pipe threaders, front end loaders (State property only), fork lifts, bucket truck, flat-bed truck with hydraulic boom, ditch-witch trencher, windows based barber Coleman/PSI, and signal used with Pentium driven PC for DDC control.

3.3. List the guides and references regularly used to perform the duties described. Examples include federal and state laws and regulations, professional standards, building codes, trade practices, contracts, and policy and procedure manuals. Explain how and why these guides and references are used. Estimate how often each is used (e.g. daily, 2-3 times a week, 1-2 times a month, etc.).

National Electrical Code, NFPA journals, Uniform Building Code, American Electricians Handbook, Ugly Elec. References, journeyman electricians handbook, electrical engineers handbook, Cummins B & C series engine shop manuals and parts books. Stamford, Lima, Marathon, Kato and Kubota generator shop manuals and parts books. Woodward Governor troubleshooting and parts manuals. ADB Alanco, Hevi-duty Crouse Hinds, Monaireo and national airport lighting component troubleshooting manuals and parts books.

3.4. Describe the level of authority and independence the incumbent of the position exercises. List the actions the incumbent takes or the decisions the incumbent makes on a regular basis without obtaining prior approval from a higher level employee. For example, explain how the position has the authority to commit the organization, or any parts thereof, to a course of action.

This position must independently interpret and apply codes & engineering standards. Trouble shoot entire airport and building systems, determine the best course of action, and take appropriate action in most cases. For problems or issues outside normal boundaries, present findings and plan of action to supervisor for decision. Develop specifications for the purchase of materials and/or contracted repairs. Sometimes act as Lead for a crew of maintenance workers on a project. Frequent work in remote locations without the immediate availability of supervision. Expected to make prudent, safe judgment calls in the best interest of the State of Alaska.

3.5. Describe the nature of the contacts the incumbent has with other people in order to perform the duties described. Include who is contacted, the reason for the contact, and how often the contact is made.

Daily contact with supervisor for work assignment and to report status.

Weekly contact with administrative staff for time recording, purchase reconciliation, and general admin responsibilities.

Daily customer service contact during work to assess and correct their maintenance issues.

Weekly contacts with engineering support personnel and contractors as necessary to support maintenance projects.

3.6. Describe the consequence of an error made by a prudent employee in the performance of the essential functions assigned to the position. What is the consequence of that error to individuals, operations, and programs?

Errors by an incumbent in this position could have insignificant consequences or be severe enough to lead to death and damage to property. This could be both State of Alaska and the public domains. The incumbent is certified by the Department of Labor to perform duties of a Journeyman Electrician. Those duties are primarily safety critical in nature.

3.7. List critical requirements of the position not previously described (e.g., skills in keyboarding, writing, negotiating, communications, etc.).

Excellent communication skills are required, both written and oral. Computer skills, including typing are essential.

Ability to travel on small aircraft, ATV, snowmobile, or by hiking to remote facilities without standard shelter and restroom amenities.

Ability to frequently handle tools and equipment as heavy as 50 lbs unassisted.

3.8. List licenses, certifications, registrations, physical or other standards required by state or federal law or regulation to perform the duties described. Cite the specific authority (e.g. law or regulation, such as the OSHA Bloodborne Pathogens Act).

Journeyman Electrician Certificate of Fitness issued by the SOA Department of Labor.

Valid Alaska Drivers License.

4. Work Demands

The following identifies some of the physical and mental demands and potential hazards typically encountered by this position. These are job demands which can be ***reasonably anticipated and are an expectation of the job***.

Keeping in mind the essential functional areas and duty statements described in section 2, select the rating that best matches the requirement of this position according to the following descriptions:

Rating **Description**

Not Required (N): Not required of this position.

Present (P): Requirement **is** present, but **is not** essential to the position. (For example, a receptionist may encounter aggressive or angry people, but this is not an essential assignment.)

Occasional (O): Required 33 percent of the time or less **and** essential to the position. (For example, a lifeguard swims only occasionally, but it is essential that a lifeguard be able to swim; a correctional officer must control aggressive/angry people who are life threatening.)

Frequent (F): Required over 33 percent of the time **and** essential to the position.

Items checked below must be consistent with the duty statements listed in section 2.

4.1 Physical Requirements

Title	Rating			
	N	P	O	F
Sitting			O	
Walking				F
Standing				F
Running		P		
Jumping	N			
Bending or twisting				F
Squatting or kneeling				F
Crawling		P		
Reaching above shoulder level				F
Reaching below shoulder level				F
Ascending or descending using a ladder or other conveyance				F
Climbing stairs				F
Driving cars, light duty trucks				F
Driving heavy duty vehicles		P		
Using floor mounted foot controls to operate equipment (e.g., not driving a car)		P		
Repetitive motion of hands/fingers (e.g., keyboarding, turning pages)				F
Fine manipulation with fingers			O	
Pinching with fingers				F
Grasping with hand, gripping				F
Load, unload, aim, and fire handguns, shotguns or other firearms	N			

Lifting/carrying up to 25 pounds				F
Lifting/carrying 26-50 pounds				F
Lifting/carrying more than 50 pounds			O	
Pushing/pulling up to 25 pounds				F
Pushing/pulling 26-50 pounds				F
Pushing/pulling more than 50 pounds			O	
Balancing on moving surfaces	N			
Balancing on narrow surfaces		P		
Balancing on slippery surfaces			O	
Balancing on uneven surfaces			O	
Restraining/grappling with people in a public protection environment	N			
Seeing objects at a distance				F
Seeing objects peripherally				F
Using depth perception				F
Seeing close work (e.g., typed print)				F
Distinguishing colors				F
Hearing conversations or sounds				F
Hearing via radio or telephone			O	
Communicating through speech				F
Communicating by writing/reading				F
Distinguishing odors by smell			O	
Distinguishing tastes	N			

4.2 Work Environment

Title	Rating			
	N	P	O	F
Work in/exposure to inclement weather				F
Work in/exposure to cold water		P		
Work/live in remote field sites				F
Work in confined areas (under desks, in heating vents, etc.)		P		
Exposure to dust, chemicals, or fumes			O	
Exposure to hazardous equipment (e.g., guns, chainsaws, explosives)		P		
Exposure to electrical current (not outlets)				F
Swimming/scuba diving	N			
Work at heights up to 25 feet (e.g., towers, poles)			O	
Work at heights over 25 feet (e.g., towers, poles)			O	
Work in urban or highway traffic (other than driving)		P		
Work around moving machinery or mobile equipment		P		
Work around moving mechanical parts		P		
Work on and off moving equipment	N			
Work on slippery or uneven surfaces			O	
Work/travel in boat/small aircraft/helicopters			O	

Exposure to high noise levels			O	
Exposure to infection, germs, or contagious diseases (e.g., hospital, lab, clinic, etc.)	N			
Exposure to blood, body fluid, or materials potentially contaminated by blood or body fluids (e.g., hospital, lab, clinic, public protection environment)	N			
Exposure to needles or sharp implements (e.g., hospital, kitchens)	N			
Use of hot equipment (e.g., kitchen ovens, lab equipment)		P		
Exposure to wild/dangerous animals		P		
Exposure to insect bites or stings			O	
Exposure to aggressive/angry people in a public protection environment	N			

4.3 Other Work Demands

Title	Rating			
	N	P	O	F
There are no other work demands.				

4.4. Explain any special physical, mental, or behavioral requirements of the position that have not already been addressed.