

City of Caldwell

Class Specification

Class Title	ELECTRICIAN – GENERAL ELECTRICAL & SIGNALIZATION (STREETS)
Class Code Number	
FLSA Designation	Covered
Pay Grade	Level 7
Effective Date	June 2019

General Statement of Duties

Performs a variety of journey-level skilled duties related to the installation, inspection, maintenance, and repair of electrical traffic control equipment and/or systems, electrical power systems, lighting systems, electronic hardware/software controls, connection and disconnection motors and actuators, programmable logic controllers (PLCs), and communications hardware/software; assists in other departments small electrical needs or on special projects as required; and performs related work as required.

Classification Summary

The principal function of an employee in this class is to perform a variety of journey-level skilled duties related to the installation, inspection, maintenance, and repair of electrical traffic control equipment and/or systems, lighting systems, electronic hardware/software controls, and communications hardware/software; assist in other departments or on special projects as required; and may oversee the work of private contractors related to this function. This position is responsible for the installation, inspection, replacement, ordering, receiving, and inventorying of parts and equipment. The work is performed independently with minimal supervision and considerable leeway for the exercise of independent judgment and initiative with the general guidance and direction of the Street Superintendent. The nature of the work performed requires that an employee in this class establish and maintain effective working relationships with City officials and employees, business owners, contractors, other government agencies, and the general public. The principal duties of this class are performed in an outdoor environment, which may involve adverse weather conditions and related hazards.

Examples of Work (Illustrative Only)

ESSENTIAL DUTIES AND RESPONSIBILITIES

- Performs installation, operation, maintenance, testing, and repair of traffic signal systems, electrical equipment, and control systems;
- Performs installation, troubleshooting, testing, repair, and calibration of a wide variety of electrical equipment up to 600 volts and instrumentation associated with power generation and industrial control equipment maintenance, control circuitry, and control systems including programmable logic controllers (PLCs) and associated programming;
- Utilizes various electrical tools, i.e. hand and hydraulic pipe benders, motorized man lifts, etc. in the performance of daily duties;
- Utilizes “lock out” and “tag out” system to ensure quality of safety while working on projects;
- Performs testing and repair of protective relaying devices associated with electrical generation;
- Conducts periodic nighttime inspections for Street Lighting, etc. and electrical work;
- Ensures that hazards or any potential problems are repaired properly and promptly or reported to the appropriate City personnel;
- Monitors work activities and creates documents to maintain records of maintenance and repair work performed using the city’s asset management system as required;
- Monitors project material usage and makes recommendations for replacement purchases for inventory management;
- Monitors and reports expenses associated with fulfilling duties consistent with approved budgets and direction;
- Assists with setup of traffic counting capabilities of traffic control and detection equipment as requested;
- Wires new installations of traffic control equipment including traffic controllers, induction loops, traffic detection cameras, signal indications, pedestrian signal indications, rapid flashing rectangular beacons (RFBs), high intensity actuated crosswalks (HAWKs), etc.;
- Coordinates with the Public Works Director and/or City Engineer regarding changes or modifications to traffic control devices timing plans, etc. and makes such changes by permission of the Public Works Director and/or City Engineer or assignee;
- Performs programming, troubleshooting, repair, and testing of PLC governor, gate, annunciation, supervisory control and data acquisition (SCADA), and analog/digital input/output transducers;
- Assists with installment of supervisory equipment and performs final adjustments to ensure smooth operation;
- Operates various types of equipment in the completion of field projects, including fork lift, backhoe, truck, line bed, bucket trucks, motorized man-lifts, and other heavy equipment;
- Supervises and trains others in the installation and repairs of electrical systems according to the currently adopted version of the National Electrical Code (NEC);
- Serves as or assists the Electrical Inspector in the Building Department when needed and

as approved;

- Designs and completes job estimates for electrical projects as approved;
- Performs tasks associated with the maintenance workers as required;
- Provides needed information and demonstrations concerning how to perform certain work tasks to new employees in the same or similar class of positions;
- Keeps immediate supervisor and designated others fully and accurately informed concerning work progress, including present and potential work problems and suggestions for new or improved ways of addressing such problems;
- Attends approved meetings, conferences, workshops and training sessions and reviews publications and audio-visual materials to become and remain current on the principles, practices and new developments in assigned work areas;
- Responds to citizens' questions and comments in a courteous and timely manner;
- Communicates and coordinates with others to maximize the effectiveness and efficiency of interdepartmental operations and activities to help keep a positive work environment as well as works as a team member;
- Performs other related duties as assigned.

OTHER DUTIES AND RESPONSIBILITIES

- Provides assistance in other departments or on special projects as required;
- Performs other related duties as assigned.

Required Knowledge, Skills and Abilities

- Considerable knowledge of hazards associated with electronic and high voltage equipment and devices;
- Considerable knowledge of precautions necessary to insure safety of employees and equipment;
- Considerable knowledge of the practices and procedures related to installation, maintenance and repair of medium or high voltage generation and signalization equipment;
- Good knowledge of the operation of light and medium equipment including hand tools, fork lift, backhoe, truck, line bed, and motorized man-lifts to effectively perform duties;
- Good knowledge of traffic hazards and traffic safety principles, practices and procedures;
- Good knowledge of proper lifting techniques and personal protective equipment used in the operation of hand and power tools;
- Skill in the operation of hand and power tools;
- Ability to analyze, diagnose and repair electrical and electronic problems associated with the complex traffic signal control equipment, power generation system, traffic control systems, and City power systems;
- Ability to prepare and maintain operating records and reports;
- Ability to comprehend and follow safety rules and regulations;
- Ability to operate a personal computer with Microsoft applications, and related equipment;
- Ability to operate communication networks including fiber optic networks, radio

- communications, analog and digital input/output circuitry;
- Ability to communicate well with others, both orally and in writing, using both technical and non-technical language;
- Ability to work cooperatively with coworkers, peer journeymen, and supervisors;
- Ability to understand and follow oral and/or written policies, procedures and instructions;
- Ability to prepare and present accurate and reliable reports containing findings and recommendations;
- Ability to use logical and creative thought processes to develop solutions according to written specifications and/or oral instructions;
- Ability to establish and maintain effective working relationships with other Department and City employees, property owners, businesses, other government agencies, and the general public;
- Ability to perform a wide variety of duties and responsibilities with accuracy and speed under the pressure of time-sensitive deadlines;
- Ability and willingness to quickly learn and put to use new skills and knowledge brought about by rapidly changing information and/or technology;
- Integrity, ingenuity and inventiveness in the performance of assigned tasks.

Acceptable Experience and Training

- Graduation from high school or possession of a GED;
- Completion of four (4) years in the Idaho electrical Apprentice program with current Journeyman electrician status or ability to complete the Apprentice program and achieve Journeyman status within one and half (1.5) years of employment; and
- Four (4) years experience related to design, installation, and maintenance of traffic signals and related electrical systems; or
- Two (2) years experience with electrical motor and control logic maintenance and repair; or
- Any equivalent combination of experience, education and training which provides the knowledge, skills and abilities necessary to perform the work.

Required Special Qualifications

- Possession of a current and valid driver's license.
- Possession of a State of Idaho Electrician's License.
- Possession or ability to obtain and maintain a valid Idaho Class A CDL within 60 days of employment.
- Level II Traffic Signal Electrician or Level III Traffic Signal Technician by the International Municipal Signal Association preferred.
- Subject to on-call status.
- Subject to different shift hours if work dictates.
- Subject to a background check.

Physical Demands

- N (Not Applicable)** Activity is not applicable to this position.
O (Occasionally) Position requires this activity up to 30% of the time (2.5+ hours/day)
F (Frequently) Position requires this activity 30% - 60% of the time (Up to 5.5 hours/day)
C (Constantly) Position requires this activity more than 60% of the time (Over 5.5 hours/day)

Physical Demands	Lift/Carry	Hazards/Potential Exposure
<u>C</u> Stand	<u>F</u> 10 lbs or less	<u>O</u> Toxins/caustics/chemicals
<u>F</u> Walk	<u>F</u> 11 – 20 lbs	<u>C</u> Extreme conditions
<u>O</u> Sit	<u>O</u> 21 – 50 lbs	<u>O</u> Dust
<u>C</u> Manual Manipulation	<u>O</u> 51 – 100 lbs	<u>F</u> Moving mechanical parts
<u>C</u> Grasp	<u>O</u> Over 100 lbs	<u>C</u> Potential electrical shock
<u>C</u> Reach Outward		<u>O</u> High pitched noises
<u>F</u> Reach Above Shoulder	Push/Pull	<u>O</u> Blood-borne pathogens
<u>C</u> Speak	<u>F</u> 12 lbs or less	<u>O</u> Gaseous risk/fumes
<u>F</u> Climb	<u>F</u> 13 – 25 lbs	<u>O</u> Construction zone hazards
<u>F</u> Crawl	<u>O</u> 26 – 40 lbs	<u>O</u> Communicable disease
<u>F</u> Squat or Kneel	<u>O</u> 41 – 100 lbs	<u>O</u> Hot liquids/fire
<u>F</u> Bend	<u>O</u> Over 100 lbs	<u>F</u> Height & confined spaces

Essential Physical Abilities

- Sufficient clarity of speech and hearing or other communication capabilities, with or without reasonable accommodation, which permits the employee to understand department and safety rules and regulations and work around high traffic areas;
- Sufficient vision or other powers of observation, with or without reasonable accommodation, which permits the employee to work safely in heavy traffic and operate light to heavy duty equipment and had power tools;
- Sufficient manual dexterity with or without reasonable accommodation, which permits the employee to operate equipment, hand and power tools, and make repairs to equipment;
- Sufficient personal mobility and physical reflexes, with or without reasonable accommodation, which permits the employee to work in trenches, climb ladders, work in rough terrain and access construction equipment.

I have reviewed these job requirements and the detailed job description and verify that I can perform all physical demands and essential physical abilities of this position.

Employee Printed Name: _____

Employee Signature: _____ Date: _____

Department Manager Approval: _____ Date: _____