

## CITY OF MARGATE, FLORIDA JOB DESCRIPTION

**JOB TITLE: ELECTRICIAN II (Master Electrician) Job Code 587**

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### GENERAL STATEMENT OF JOB

Under the direction of the Director of the Department of Environmental and Engineering Services (DEES) or the Director's designee, performs work as an electrician to maintain and repair commercial/industrial electrical equipment and systems within a municipal water and sewer utility, including but not limited to electric motors, motor controllers, electrical instrumentation, building wiring, lighting, security and fire alarm systems, and various other electrical and/or electronic equipment and systems associated with sanitary sewage lift/pump stations, treatment plants, and other utility facilities. Duties include performing installations, maintenance, and repairs to industrial and electric generators, switching systems, pumps, motors, motor controllers, measurement devices, and related equipment; troubleshooting downed equipment and circuits; and installing and/or maintaining panels, circuitry, and power and lighting systems. Duties also may include supervising other employees, including electricians and instrumentation technicians. Duties involve an element of personal danger and hazardous working conditions. Position relies on experience and expertise and exercises use of initiative and independent judgment to determine the best approach by using and interpreting codes, policies, and procedures. Performs related work as required.

### ESSENTIAL FUNCTIONS

**The following duties and functions, as outlined herein, are intended to be representative of the type of tasks performed within this position. They are not listed in any order of importance. The omission of specific statements of the duties or functions does not exclude them from the position if the work is similar, related, or a logical assignment for this description. Other duties may be required and assigned.**

Performs highly skilled and manual work of a specialized nature involving difficult electrical maintenance and repair operations; and solving complex electrical system failures within the water and sewer treatment plants, pumping station and other departmental facilities.

Performs complex electrical diagnostics, calibrations, maintenance, and repairs on electrical switchgear, distribution equipment, variable frequency drives and controllers (VFD's & VFC's), soft starters, protective relays, breakers, battery banks, capacity trip systems and various process control systems.

Installs, maintains, tests, trouble-shoots, and repairs electric motors, controllers, switchboard panels, lighting, power circuits, conduits, conductors, breakers, panel boards, disconnects, transformers, generators, transfer switches, switches, receptacles, fixtures, and other electrical equipment and electronics.

Plans, lays out, and installs electrical conduits for power, lighting and alarm systems in pumping stations, treatment plants, and other facilities.

Performs preventive maintenance duties for facilities and equipment on a regular basis to ensure optimal operating condition, safety, and compliance with applicable codes and standards.

Services and maintains laboratory and test equipment, distribution panels, security gates, and signal wiring.

Designs and upgrades control systems and electrical systems when such systems are deemed obsolete or when new technology prevails.

Performs general cleaning, maintenance and calibration tasks necessary to keep electrical equipment, electronics and tools in operable condition, monitors equipment operations to maintain efficiency and safety; reports faulty equipment.

Operates a variety of machinery, equipment, and tools associated with installing, repairing, and maintaining electrical systems and fixtures, which may include a utility vehicle, bucket truck, lift, trencher, drill, hole punch, conduit bender, pipe threaded, fish tape, gauges, meters, electrical tools, mechanic tools, or diagnostic instruments.

Gathers necessary equipment, tools, parts, or supplies to conduct projects; initiates orders for materials, tools, and supplies necessary to his work; transports, loads, and unloads equipment and materials used in projects. Utilize drawings, schematics, vibration analysis, multi-meter, amp probe, megohmmeter, surge tester, and hand tools.

Follows safety procedures, applies lockout/tagout protocol, utilizes safety equipment, and monitors work environment to ensure safety of employees and other individuals.

Assists in preparation to complete various forms, correspondence, reports, work orders, diagnostic reports, purchase requisitions, bid specifications, electrical drawings, statistical analyses, and other documents.

Reviews and marks-up electrical drawings and related product submittals for capital projects.

Communicates with supervisor, employees, other departments, electrical inspectors, vendors/suppliers, contractors, the public, and other individuals as needed to coordinate work activities, review status of work, exchange information, or resolve problems.

Provides assistance, training or coverage to other employees as needed, and performs other related duties as required.

Maintains various records of activities performed, materials ordered, and hours worked.

Maintains a current knowledge of applicable laws/regulations; maintains an awareness of new trends and advances in the profession; reads professional literature; attends workshops and training sessions as appropriate.

Performs emergency response duties as required or assigned.

Performs related work as required or assigned.

## **MINIMUM TRAINING AND EXPERIENCE**

**Must** possess and maintain a valid Florida driver's license

**Must** possess one of the following:

- Master Electrician certificate with a minimum of six (6) years of industrial/ commercial experience, or
- Journeyman Electrician certificate with a minimum of ten (10) years of industrial/commercial experience, which must include significant experience with pumps, motors, starters, soft starters, VFD's, and controllers.

**Must** have earned a High School Diploma or Graduate Equivalency Degree (GED).

Considerable experience as an electrician working in an industrial environment **is preferred**.

Experience working for a water and sewer utility **is preferred**.

Experience working with Programmable Logic Controllers (PLC's) and Supervisory Control and Data Acquisition systems (SCADA) **is preferred**.

A comparable amount of training and experience may be substituted for the minimum qualifications.

## **MINIMUM QUALIFICATIONS OR STANDARDS REQUIRED TO PERFORM ESSENTIAL JOB FUNCTIONS**

Physical Requirements: Tasks involve frequent walking, standing, bending, and stooping, and some lifting and carrying objects of light to moderate weight (20-50 pounds).

Data Conception: Requires the ability to compare and/or judge the readily observable, functional, or composite characteristics (whether similar to or divergent from obvious standards) of data, people, or things.

Interpersonal Communication: Requires the ability to speak and/or signal people to convey or exchange information including giving and receiving instructions, assignments and/or directions.

Language Ability: Requires the ability to communicate efficiently and effectively in standard English. Requires the ability to comprehend electronic/electrical terminology, wiring diagrams, electrical drawings, and equipment manufacturer's cut sheets.

Intelligence: Requires the ability to apply common sense understanding to perform semi-repetitive tasks and principles of rational systems and synthesis functions.

Verbal Aptitude: Must communicate efficiently and effectively in standard English. Must speak with poise, confidence, and voice control. Must communicate in electrical terms.

Numerical Aptitude: Requires the ability to add, subtract, multiply and divide; calculate decimals and percentages; utilize algebraic principles; utilize descriptive statistics.

Form/Spatial Aptitude: Requires the ability to inspect items for proper length, width and shape, and visually read various information.

Motor Coordination: Requires the ability to inspect items for proper length, width and shape. Must be able to visually read various information.

Manual Dexterity: Requires the ability to operate various electrical equipment and manipulate electrical/electronic items. Must have excellent levels of eye/hand/foot coordination for operating equipment.

Color Discrimination: Requires the ability to differentiate between colors or shades of color.

Interpersonal Temperament: Requires the ability to deal effectively with people from a variety of departments in both giving and receiving instructions. Must be able to perform duties when confronted with individuals acting under stress.

Physical Communication: Requires the ability to talk and/or hear: (talking: expressing or exchanging information by means of spoken words: hearing: perceiving nature of sounds by ear).

Environmental Requirements: Tasks are regularly performed without exposure to adverse environmental conditions, i.e. dirt, cold, rain, fumes.

## **KNOWLEDGE, SKILLS, AND ABILITIES**

Knowledge of the practices, processes, materials, and tools of the electrical trade.

Knowledge of the occupational hazards and safety precautions, practices, and procedures of the electrical trade, specifically as it relates to work around high voltage systems (up to 480V).

Knowledge of the National Electrical Code, laws, rules, theories, and standards pertaining to construction, maintenance, and repair of electrical systems and equipment.

Knowledge and understanding of pneumatic/hydraulic, electrical, security, fire alarms and electronic systems.

Knowledge of SCADA, HMI, 4-20 mA devices, VFDs and PLC software and hardware.

Knowledge of RF Communications.

Knowledge of basic Microsoft operating systems, Microsoft Office Suite and related software.

Skilled in locating and adjusting defects in electrical systems and equipment.

Skilled in the use and care of electricians' tools and equipment.

Ability to operate manual and power hand tools, and other discipline specific equipment and machinery.

Ability to work above or below ground floor level, on ladders, scaffolding, staging, bucket hoists, catwalks, etc. and within confined areas among energized high voltage lines and equipment.

Ability to inspect materials and equipment for quality and safety and to estimate labor and materials required to complete assigned projects.

Ability to read and interpret blueprints, sketches, ladder diagrams, wiring diagrams, schematics, electrical drawings, and equipment manufacturer's cut sheets.

Ability to establish and maintain effective working relationship with supervisors, fellow employees, and the public.

Ability to coordinate and execute projects with operations staff and outside vendors with minimal supervision.

Ability to create work orders, order parts, and maintain inventory for electrical maintenance.

Ability to respond quickly and perform strenuous work under emergency and all weather conditions

Ability to train, coach and evaluate others on the job.

**EQUAL OPPORTUNITY EMPLOYER**

The City of Margate, Florida, is an Equal Opportunity Employer. In compliance with the Americans with Disabilities Act (42 U.S. C. 12101 et. seq.), the City of Margate will provide reasonable accommodations to qualified individuals with disabilities and encourages both prospective and current employees to discuss potential accommodations with the employer. The physical demands described are representative of those that must be met by an employee to successfully perform the essential functions of this job.

I have read and acknowledge receipt of this Job description.

\_\_\_\_\_  
Employee Name and Signature

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Date