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Cedar Knolls, NJ 07927
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Electrical and Instrumentation Control Specialist

Non-Union; Non-Exempt

RESPONSIBILITIES

The position requires expertise in the operation, maintenance, and repair of a wide variety of electrical and instrumentation control systems, used in water treatment facility operations; and performs a variety of technical tasks relative to assigned area of responsibility.

ESSENTIAL FUNCTIONS

1. Renders services for the purposes of providing potable water.
2. Assists in the review of contractor-supplied electrical and control systems-related designs, record documents, shop drawings, conduct field construction inspections, as-built records, etc.
3. Assists in developing standard operating procedures (SOPs) in related matters (electrical and instrumentation control, etc.), and hardware standards.
4. Designs electrical and control schematics, layouts, ladder, and relay logic for new and existing projects.
5. Utilizes working knowledge of electrical, mechanical, instrumentation process control equipment, P&IDs, control elementary drawings, ISA instrument specifications, and loop diagrams.
6. Reviews the current electrical, and relevant mechanical, and physical conditions of the facilities and develops and implements an annual auditing and electrical maintenance program for the above-ground assets.
7. Develops an in-house certification program to validate basic electrical troubleshooting skillset for Treatment and Pumping operations.
8. Inspects locations where work is being performed, both on-site and off-site; ensures conformity with repair requisitions, submittals, plans, diagrams, and specifications.
9. Determines special equipment needs and assesses and identifies solutions to problems; accurately diagnoses electronic, electromechanical, and instrumentation malfunctions.
10. Performs confined space entries to operate and maintain electrical, controls, and instrumentation equipment, if needed.

11. Works collaboratively with the Operations Risk Manager to identify hazards and ensures safe work procedures and processes are in place and followed.
12. Coordinates instrumentation, control systems, and electrical work with other divisions and other entities as needed; and assists staff with implementing changes.
13. Researches, recommends, and implements systems to enhance systems functionality and reliability. Investigates new technological developments and processes.
14. Reviews work performed by outside contractors, participates in factory witness testing, and coordinates electrical system issues between project engineering, and the instrumentation contractor.
15. Demonstrates working knowledge of camera surveillance equipment, access control, and fire panel alarm systems.
16. Demonstrates proficiency in tracing and diagnosing field wiring conditions; and developing point-to-point wiring documentation.
17. Demonstrates proficient ability to build control system panels and enclosures; and assists in developing company standards.
18. Performs administrative tasks associated with the production of manuals, quality control and assurance reports, compliance reports, record management, etc.
19. Demonstrates proficiency in installing and configuring VFD, Soft starters, and other related MCC systems.
20. Functions of this position include work assignments in the ambient atmosphere including extreme cold, hot, wet, or other inclement weather conditions. Scheduled 24/7 standby duties with an approximate 60-minute on-site response time. Scheduled work assignments and nonscheduled emergency callouts, on non-standard workdays and/ or work hours, including nights, weekends, and holidays. Standby and response to emergency callouts is a core function of this position.
21. Performs related and other duties, as assigned.

This job description is not designed to cover or contain a comprehensive listing of activities, duties, or responsibilities that are required of the employee for this job. Duties, responsibilities, and activities may change at any time with or without notice. Functions of this position include work assignments in the ambient atmosphere including extreme cold, hot, wet or other inclement weather conditions.

REPORTING RELATIONSHIPS & INTERACTIONS

This position is a direct report to the IT Director or assigned alternate. The position requires interaction with SMCMUA staff, vendors, the general public, and local, County, State, and Federal



public agency representatives. The position requires routine interaction and coordination of duties with all Divisions of the SMCMUA.

AUTHORITY

The responsibilities of this position require administering proprietary and security information with confidentiality in accordance with the Southeast Morris County Municipal Utilities Authority policy and procedures as well as applicable law.

WORK HOURS & LOCATION

This position will be assigned to work at the SMCMUA Headquarters located at 19 Saddle Road Cedar Knolls, NJ 07927, and at any other of the SMCMUA's facilities and throughout the SMCMUA's service area or other assigned work locations. The work hours are generally assigned from the hours of 7:30 a.m. to 4:30 p.m., Monday through Friday, with a one-hour non-paid lunch. The start and finish times of a workday may vary depending on the SMCMUA needs. Office assignments will be supplemented with the SMCMUA fieldwork activities. Travel, including overnight and weekend, stays, as needed to attend professional-related seminars, conferences, etc. Travel may be local, regional, or within the Continental US.

QUALIFICATIONS

As a condition of employment, after an offer has been issued but before employment has commenced, the applicant must successfully complete an illegal substance test, background check, motor vehicle check, and a physical and/or a functional capacity exam (FCE) based on the attached job-specific Functional Capacity Requirements (FCR).

LICENSES AND CERTIFICATION

- Maintenance of a New Jersey Basic Driver's License.
- Maintenance of an Electrician's license (10 years minimum)

EDUCATION

- US ABET accredited Bachelor of Science or higher degree civil, mechanical, chemical, or environmental engineering or other approved discipline.
 - Significant additional experience and/or licenses and certifications, or other electrical and mechanical education and training.

EXPERIENCE

- Minimum ten (10) years of qualified experience, coordination, installation, maintenance, operation and/or design of electrical (low and high voltage) and industrial control systems for public water systems.
- Experience with data communications systems, protocols, wired and wireless network systems, and radio telemetry.
- Proficiency in the preparation of electrical drawings, schematics, control logic, and reading process instrumentation and control, electrical, and mechanical drawings.
- Knowledge of pertinent local, State and Federal laws, ordinances and rules including NFPA 70 and 70E standards for electrical installations and workplace safety.

SKILLS & COMPETENCIES

- Excellent comprehension, written, and oral skills in English so that involved and complicated instructions and technical texts can be read, understood, produced, and communicated to staff.
- Knowledge of materials, tools, and equipment used in various electrical and control systems construction, and maintenance.
- Maintains up-to-date skill sets to remain current with the best available technologies and practices.
- Proficient with Microsoft Office; specifically Excel and Word.
- Proficient in basic computer networking and radio/cellular communications.
- Working harmoniously with co-workers, supervisors, managers, and the public.
- Maintain an understanding and satisfactory compliance with the SMCMUA policies, procedures, practices, processes, and essential functions required for the position.
- Strong organizational and time management skills with attention to detail.
- Demonstrated ability to solve complex process control problems related to water/wastewater systems.
- Ability to prioritize and manage multiple projects simultaneously and adapt to changes in priority efficiently.

FUNCTIONAL CAPACITY REQUIREMENTS

Reference the Functional Capacity Requirement document for the specific physical tasks, details, frequency, and specifications required for the position.

FUNCTIONAL CAPACITY REQUIREMENTS FOR INFORMATION TECHNOLOGY (FIELD)

VERSION DATE:	10/16/2020	APPROVED BY: C. Mercado/N. Buono						
CATEGORY WORK:	Medium							
PHYSICAL TASKS	DETAILS	RARE	SELDOM	OCCASIONAL	FREQUENT	CONTINUOUS	Weight Amounts, if Applicable	COMMENTS
		up to 5 minutes of total work time	6-29 minutes daily	30 minutes to 2.5 hours per day	2.5 to 5.25 hours per day	5.25 hours or more per day		
Balance	To maintain body equilibrium on narrow or inclined surfaces.			✓				
Bending	Flexion of the upper trunk forward while standing and knees extended or knees flexed when sitting.				✓			
Carrying	To hold or rest weighted objects (<i>indicate weight</i>) directly on hands, arms, shoulders, or back while walking from one location to another.		21-50 lbs	10-20 lbs				Use of Buddy System/Team Lift if carrying more than 50 lbs.
Climbing Ladders	Ascend/descend with gradual or continuous progress by oneself, using both hands and feet.	0-10 ft.	✓					
		10-20 ft.	✓					
		20-30 ft.	✓					
Climbing Stairs	Ascend/descend with gradual or continuous progress by oneself, using both hands and feet.			✓				
Crawling	Moving body slowly in a prone position on hands and knees flexion, with arms extended and elbows bent.	✓						
Crouching	Bending downward and forward by bending the legs and spine.			✓				
Digging	To break up, turn over or remove earth, sand, etc, as with a shovel, spade, bulldozer, or claw.	✓						
Driving	The controlled operation and movement of a land vehicle, such as a car, truck or bus (<i>indicate manual or automatic</i>).			✓ automatic				
Grasping	To handle, clasp or embrace with both arms, hands fingers. To take or to seize, e.g., bag of cement.			✓				
Handle	To maneuver objects, to manipulate or repositon medium to large sized items. Has handles to be grasped by the hands in order to manage dexterously or efficiently, e.g., large bag of trash, move furniture, cases/boxes with handles.			✓				
Handling	Flex and extend fingers with opposition of thumb using palms, fingers and thumbs to grasp or manipulate objects.			✓				
Keyboarding/ Typing (motor coordination)	Ability to move the fingers rapidly and accurately during keyboarding tasks.				✓			
Kneeling	Maintaining the body in an erect posture while resting body weight on one or both knees.			✓				
Lifting/Loading	An amount or a weight raised or capable of being raised at one time.		21-50 lbs	10-20 lbs				Use of Buddy system/Team Lift if carrying more than 50 lbs.

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		up to 5 minutes of total work time	6-29 minutes daily	30 minutes to 2.5 hours per day	2.5 to 5.25 hours per day	5.25 hours or more per day		
Manipulate	To operate, manage, control, or utilize skillfully with the hands. Adroit handling, e.g., steering wheel, hand truck, pallet jack.			✓				
Manual Dexterity	To move one or more hands rapidly and skillfully to perform gross grasping, placing and turning motions. Including handwriting.				✓			
Pulling	Exertion of force to draw an object towards oneself in a particular direction or position.		✓				≤ 50 lbs.	
Pushing	Exertion of force on or against an object (<i>indicate weight/size</i>) to move it from one location to another.		✓				≤ 50 lbs.	
Reaching	Extending the hands and arms in any direction.			✓				
Reaching Above Shoulder	To extend either arm to reach from shoulder level to overhead.			✓				
Repetitive Motions	Substantial movements (motions) of the wrists, hands, and/or fingers.				✓			
Shoveling	To move or remove with a shovel gravel, sand, and/or snow.	✓						
Sitting	Resting of the body weight in a seated position while engaging in a single activity.				✓			
Squatting	Maintaining the body in an erect position with full flexion of the knees.			✓				
Standing	Maintaining the entire body in an erect posture without change in location.			✓				
Stooping	Flexion of the upper body forward at the waist with partial flexion of the knee.			✓				
Trunk Twisting	Rotation of the trunk to the right or left from a neutral position while sitting or standing.				✓			
Neck Twisting	Rotation of the neck to the right or left from a neutral position while sitting or standing.				✓			
Vibrations - High Impact								None
Vibrations - Low Impact			✓					
Walking	Moving the entire body from one location to another using a heel to toe gait.			✓				
Confined Space: Work in a pit, trench, ditch, excavation				✓				

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PHYSICAL TASKS	DETAILS	RARE	SELDOM	OCCASIONAL	FREQUENT	CONTINUOUS	Weight Amounts, if Applicable	COMMENTS
		up to 5 minutes of total work time	6-29 minutes daily	30 minutes to 2.5 hours per day	2.5 to 5.25 hours per day	5.25 hours or more per day		
Wear a half/full face respirator								None
Work in extreme cold weather conditions				✓				Seasonal
Work in extreme hot weather conditions				✓				Seasonal