

**NEW Water
Job Description**



Pay Grade Range: \$29.89- \$42.20
Hourly Hiring Range: \$29.89- \$35.13

SECTION 1		DEMOGRAPHIC INFORMATION	
Job Title	Electrical & Instrumentation (E/I) Technician	Division	Operations
Department	Maintenance	Reports To (Job Title)	Maintenance Manager
Full-Time / Part-Time	Full Time	Part-Time (Hrs per Wk)	
Pay Grade	10	Exempt/Non-exempt	Non-exempt
Adoption Date (original job description date)	July 26, 2005	Last Revision Date	July 1, 2020
Approved By (generally same as "Reports To")	Maintenance Manager	Human Resources Approval Date	August 18, 2020
Director Approved By (Job Title)	Director of Operations		

SECTION 2	JOB SUMMARY
	<p>In support of the NEW Water culture of Safety, Respect, Team, and Environment, the E/I Technician is responsible for performing a wide range of complex, predictive, preventive, and emergency maintenance repair activities on equipment located at the NEW Water wastewater treatment facilities and collection system. This position must be available for a rotating stand by schedule for emergency break downs during off hour calls.</p> <p>This position is responsible for inspecting, troubleshooting, programming, repairing, installing, and calibrating critical equipment affecting the operation of the Green Bay and De Pere wastewater treatment facilities and associated collection system. This position must possess the ability to safely maintain permit requirements, using a wide array of specialized equipment and highly developed skills. Make recommendations regarding the continued operation of plant equipment, based on an investigation of electrical and/or instrumentation related problems.</p> <p>Work direction is received through the E & I Team Leader and is performed under general direction. Work is reviewed for quality, thoroughness, adherence to schematic drawings or design concepts, installation efficiency and timeliness by the E & I Team Leader or the Maintenance Manager. Work effectiveness is monitored through the observation of results and reports generated by the Computerized Maintenance Management System (CMMS). This position is responsible for documenting the resolution of tasks in the CMMS and updating any schematics or drawings associated with the task. This position is responsible for providing quality service to internal and external customers to ensure that NEW Water is fulfilling all regulatory and environmental compliance obligations.</p>

SECTION 3.....		DESCRIPTION OF ESSENTIAL RESPONSIBILITIES & DUTIES
		Frequency: Daily, Weekly, Biweekly, Monthly, Quarterly, Annually, or As Needed
Description of Duties	Frequency	
Key Area: Ensuring Operation and Reliability of Equipment	35% of job	
Performs preventive maintenance, calibrations, programming, troubleshooting, failure analysis, routine, and emergency repairs on NEW Water's equipment including: variable frequency drives and magnetic-coupling drives, PLC's and components, transformers, switchgear, electrical distribution equipment up to 24,900 volts, emergency generators, and solar electric arrays.	Daily	
Performs repairs to pressure, temperature, flow, and level measuring devices throughout the plants and at remote locations, to insure the safe and efficient operation of plant processes and the uninterrupted flow of energy to plant equipment.	Daily	
Performs repairs to plant lighting, switches, outlets, thermostats, security, fire alarm, access control systems, boiler, heating, ventilation and air conditioning (HVAC), pneumatic and motorized valves, automotive, electric carts, forklifts, snow removal and lawn care equipment.	Monthly	
Completes thermal imaging and power quality analysis, tuning instrument loops, conduct buried electrical/communications systems locates and tests uninterruptible power supplies.	Weekly	
Performs the installation of new equipment or replacement of existing equipment and wiring, in compliance with all local, state, and National Electric Codes, including design of circuitry, fabrication, updating of electrical drawings, P&ID drawings and schematics, through close interaction with the Engineering Department.	Monthly	
Recommends improvements and changes to facilities and equipment to improve reliability, safety or performance.	As Needed	

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Identifies and gathers replacement parts, supplies, tools, materials, and supporting equipment.	Daily
Focuses on the timely completion and high quality of work, including job site and tool clean-up.	Daily
Performs repairs of continuous Emission Monitors (CEM), treatment disinfection systems, and related environmental process equipment.	Weekly
Perform duties of Team Leader when unavailable or on vacation.	Weekly
Key Area: Troubleshooting Equipment Problems	35% of Work
Performs failure analysis on equipment by observing its operation, formulating a logical troubleshooting approach, and utilizing precision measuring devices to determine equipment problems.	Daily
Troubleshoots Motor Control Centers (MCC's), motors, controllers, Allen-Bradley programmable logic controller I/O components, plant Ethernet and fiber optic networks, Closed Circuit Television (CCTV), plant phone and paging systems, gas monitors, remote telemetry for lift stations, meter station data loggers and a wide range of process and lab analysis equipment.	Daily
Researches CMMS history to identify maintenance problems encountered while performing the duties.	Daily
Makes recommendations regarding needed improvements to equipment and facilities.	Weekly
Key Area: Documentation, Training, Evaluations, and Special Projects	20% of Work
Uses the CMMS to document time and material needed on the job. Writes a detailed description of what the problem was and what was done to repair the problem.	Daily
Recommends updates to and/or revises electrical/instrumentation system diagrams and blueprints.	As Needed
Attends special training to improve existing skills or obtain certification as needed. Participates in training on new plant processes and systems.	Monthly
Provides training, mentoring, and assistance to others. Seeks assistance, identifies training needs, and actively pursues training opportunities that are available.	As Needed
Integrates electrical design and maintenance considerations into plant construction and renovation projects.	As Needed
Participates in the design review and construction coordination for facility projects.	As Needed
Serves as a project lead for special construction projects.	Quarterly
Works closely with contractors to explain and oversee plant repair and improvement projects.	Quarterly
Key Area: Safety	10% of job
Ensures that all NEW Water safety and security policies are followed.	Daily
Participates in safety and security training as directed by the Maintenance Manager.	Monthly
Reports unsafe conditions within the plants and makes recommendations to correct the issue.	As Needed
Communicates with the Maintenance staff and other NEW Water staff regarding safety hazards.	Daily
Takes appropriate action when a safety hazard is identified (i.e. notifies direct supervisor and staff after properly identifying and mitigating the hazard).	As needed
Assists the Health, Safety and Security Coordinator in maintaining, reviewing, and updating group and individual lockout/tagout procedures.	As Needed
Other:	
Perform other job related duties as assigned.	As Needed
Promote and enhance environmental, health, and safety compliance within the work environment and actively engage in improvement efforts.	Daily
Follow organizational procedures	Daily

Section 4 Education Required	
Minimum Level of Education	Field(s) of Study
Associate's degree or completion of a State Apprenticeship Program	Electro Mechanical Technology, Electrical or Electronics Engineering Technology or related field or the completion of a State Apprenticeship Program (Industrial Electrician, Instrumentation, Electrical/Instrumentation or related field)

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Additional Information Regarding the Required Education:	Successful completion of a general E/I aptitude test. An equivalent combination of education, training, and relevant experience will also be considered.
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Section 5 Experience Required

Years of Experience	6 Years
Other Specific Experience Required or Preferred	

Section 6 Certification / Licensure / Training to Perform Job

Required Certification/Licensure	Required Upon Hire?	If no, timeframe to obtain?
Current and valid Wisconsin motor vehicle operator's license.	Y	
Certified in confined area entry procedures, CPR, and First Aid.		One Year
Training in forklift operation, respiratory protection, lockout/tagout, and fire extinguisher operation.		One Year
Preferred Certification/Licensure		
Power distribution system maintenance experience up to 24.9 Kv Arch Flash Training		

Section 7 Additional Knowledge, Skills, and Abilities

Considerable knowledge of the methods and techniques involved in the operation, installation, maintenance, and repair of plant electrical and instrumentation equipment, lines, and power sources. Considerable knowledge of parts and tools used in high voltage electrical, electronic, pneumatic, and hydraulic system repairs.

Knowledge of the theories, principles, and practices involved in the design of instrumentation systems, power systems, and power distribution. Knowledge of electrical and instrumentation equipment installation techniques and practices. A thorough understanding of medium and high voltage safety practices, necessary precautions, and use of safety equipment.

Considerable knowledge of the National Electrical Codes and National Fire Protection Association Standards (NFPA 70E). Considerable knowledge of confined space entry standards (OSHA 1910.146), the respiratory protection standard (OSHA 1910.134), lockout/tag out procedures (OSHA 1910.147), and safety data sheets (OSHA 1910.1200).

Considerable ability to diagnose and troubleshoot equipment problems, to use sound judgment in arriving at an effective and appropriate solution, and to take proper corrective action. Highly skilled in the safe use of hand and power tools.

Ability to read and interpret service manuals. Ability to read, interpret, and make revisions to electrical and instrumentation system diagrams and blueprints. Ability to understand mechanical and process schematic drawings. A thorough understanding of safe work practices, hazard recognition, and the proper use of safety and personal protective equipment.

Knowledge of principles, practices, and methods used in the wastewater treatment plant and biosolids handling operations including incineration and combustion principles. Ability to balance multiple tasks simultaneously with attention to details. Ability to work with Treatment personnel on the planning and implementation of process shutdowns including high voltage maintenance.

Good oral and written communication skills, basic computer and mathematics skills. Ability to keep accurate records and prepare routine reports from such records. Ability to work independently or as part of a team and be able to establish and maintain effective working relationships with internal and external customers.

Must have a general understanding of what NEW Water's regulatory permits and the factors that affect permit compliance.

Must have the ability to work independently, safely, and maintain a safe work environment.

Must be self-motivated and be able to work with little or no supervision.

Section 8 Software / Technology Utilized

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Microsoft Outlook, Word, Excel, PowerPoint, SharePoint, Maximo (CMMS) Maxcom (SDS for chemicals), WebCTRL (HVAC), Stackvison (continuous emissions control-CEM), Simplex Security (Alarm systems), Rockwell 500 and 5000 (PLC programming), Allen Bradley PowerFlex (VFD drives), Hach (Flo-ware), MeterView (Precision digital), Honeywell ACTiSYS, MSA (Gas detection and monitoring), FLIR (Infrared detection), Device Care (E & H), Trueview (Drawing database), CONCAL(omega), Vegacontrol, Mission Communications, OIL GEAR (Center shaft control), Power DB Lite (Battery monitoring), VESTA (Laboratory exhaust hoods), ExecuTime (Time and Attendance), Internet.

Section 9 Equipment / Machinery Utilized
Computers, forklift, motorized carts, aerial lifts, cranes, hand tools and power tools.
Meggers, multi-meters, power analyzer, thermal imaging camera, underground utility locator, low voltage communication meters, circuitry tracers, high voltage tester, gas monitors, numerous electronic circuit testing equipment. Calibration equipment for various flow, temperature, pressure, turbidity, gas detection, and pH. Frequently utilize arc flash rated personal protective equipment (PPE), self-contained breathing apparatuses (SCBA) respirators, and multiple fall protection devices.

Section 10 Judgments / Decision-Making: Impact	
Description of Duties	Check One
Job Centered / Work Unit: Decisions made are typically isolated to an individual's job or work unit.	<input checked="" type="checkbox"/>
Department-Wide: Decisions made may impact across work units, and involve a significant function of the department. Supervision or management is typically—but not always—a component of the job.	<input type="checkbox"/>
Multiple Departments: Decisions are made on behalf of and impact across multiple departments; or across several sections of a significantly large department.	<input type="checkbox"/>
Entire Organization: Decisions are made on behalf of and affect the entire organization including, but not limited to: employees, customers, vendors, governing body, etc.	<input type="checkbox"/>

Section 11 Judgments / Decision-Making Examples		
Frequency: Daily, Weekly, Biweekly, Monthly, Quarterly, Annually, or As Needed		
Example of Decision / Judgment (3-5 examples)	Job Title of Who Reviews (If Anyone)	Frequency
Shutting down of equipment for troubleshooting, making repairs, or for scheduled maintenance. Determining length of time for repairs and if parts are available.	Inventory, Treatment Leader, E/I Team Leader	Daily
Recognize hazards in the work place and work to get a corrective solution.	Health, Safety and Security Coordinator	As Needed
Emergency call in repairs determining means to repair and deciding if assistance is needed to correct the issue.	E/I Team Leader, Treatment Leader	As Needed
Diagnose and repairing a wide range of equipment and coming up with the appropriate means of repair.	E/I Team Leader, Treatment Leader	Daily
Installation, documentation, and communication on new equipment.	E/I Team Leader	As needed
Calibrations on various instruments and knowledge of when instrument issues require further investigation and corrective maintenance.	E/I Team Leader, Field Services Manager, and Environmental Compliance Specialist	Weekly

Section 12 Problem Solving	
Example of Problem (3-5 examples)	Resources Used
React to emergency or high priority electrical situations and adjust work assignments to accomplish work goals.	Input from Operations, E/I Team Leader, and the Mechanical or Utility Teams.
Develop, update info database for any new or existing equipment, and revise forms, spreadsheets, S.O.P.'s for equipment and procedures.	O&M Manuals, project P&ID's, Excel, Word, CMMS
Investigate, plan and implement special projects relating to electrical or facility changes.	Input from Engineers, Asset Reliability Coordinator, Vendors, and Suppliers
Interact with all departments concerning requested work, follow up or reoccurring jobs that need clarification or correction.	Planner/Scheduler, E/I Team Leader, and with internal staff.
Troubleshoot new and existing equipment. Equipment no longer supported, obsolete. Non-standardization of equipment.	Prints, past history, trends, test equipment, O&M's, vendors and vendor's website,

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	internal staff, external engineering, other facilities, Inventory Control Specialist	
Flow discrepancies between calculated and measured values	Text books, formulas, vendors and vendor's website, test equipment, internal, past history, and trends.	
Section 13 Working Relationships / Interactions / Contacts		
Frequency: Daily, Weekly, Biweekly, Monthly, Quarterly, Annually, or As Needed		
Title/Description of Contact	Purpose of Contact	Frequency
Directors	Keep them abreast of project updates and to gather information as requested. Also assist in Special Project Teams and interviews as requested.	Weekly
Maintenance Manager	One on One goal meetings and performance appraisals. Daily direction consultation	Daily
E/I Team Leader	Receive and inform of daily work assignments. Source of information and direction to solve various tasks and problems associated with plant operations. Assume Team Leader responsibilities during absence.	Daily
Mechanical Team Leader, Planner/Scheduler, Asset Reliability Coordinator	Providing services pertaining to information of assets, work progress, and schedule updates. Provide documentation for tasks. Help with tracking, adding, and deleting of assets.	Daily
Mechanics	Work with during shutdown and start-ups as a result of maintenance work on existing equipment. Work with during new equipment start-ups and troubleshooting of existing equipment.	Daily
Field Service Manger	Help in solving problems associated with billing.	As needed
Field Services Technicians	Work with during shutdown and start-ups as a result of maintenance work on existing equipment. Work with during new equipment start-ups and troubleshooting of existing equipment. Installing, calibration, and servicing of equipment pertaining to the billing services.	Daily
Health, Safety and Security Coordinator	Work on LOTO program and to resolve safety issues that arise during day to day operations. Assist in quarterly safety audits, monthly safety training, and help coordinate new equipment safety requirements prior to startup.	Daily
IT Manager and Staff	Ensure proper corrections to CEM system issues. SharePoint document storage and electronic P&ID's. Collaborate to implement new and more efficient solutions such as new program initiation or optimization of existing infrastructure. Assist in development of process control systems, control loops, and data acquisition. Help with process integration and operator interface platforms. Aid in programming and plant process requirements. Assist with PLC and network issues or outages to ensure consistent plant operation and performance. Suggest new programming ideas to improve the efficiency of both wastewater treatment facilities.	Daily
Treatment Leader and Operations Trainer	Work with during shutdown and start-ups as a result of maintenance work on existing equipment. Work with during new equipment start-ups. Assist in coordinating of high voltage maintenance, and troubleshooting along with maintenance of existing equipment.	Daily
Operators	Coordinate equipment shutdowns during normal operation, plant upgrades and pilot projects. Assist with troubleshooting and repairing asset.	Daily
Project Manager, Staff Engineer, Resident Project	Assist with updating plant drawing, prints, and P&ID's.	As needed

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Engineer, Engineering Technician	Provide input for plant projects. Help provide information on underground utilities and general plant design.	
Buyer, Inventory Control Specialist	Assist with parts and materials procurement. Updating of spare part lists to individual assets.	Daily
Environmental Compliance Specialist	Assist in answering questions pertaining to regulatory permits. Provide accurate and timely plant data for required regulatory requirements.	As needed
Lab Manager and Staff	Verifying and analyzing calibration samples.	As needed
Administrative Services	Resource for administrative needs	As needed
Contractors and Vendors	Work with during plant upgrades and construction projects to coordinate start-ups, shutdowns, and training. Ensure the proper installation and operation of newly installed electrical/ instrumentation equipment.	Weekly

SECTION 14 SUPERVISION / MANAGEMENT AUTHORITY

Action	Yes	No	Provides Input
Screen / Interview Applicants	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Hire / Promote Employees	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Provide Written / Verbal Warnings	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Suspend Employees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Terminate Employees	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Prepare Work Schedules	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Project Management	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide Work Direction	<input type="checkbox"/>		<input checked="" type="checkbox"/>
Evaluate Performance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Coach Employees	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Train Employees	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Approve Overtime	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Approve Time Off	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Develop / Implement Policies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Evaluate and Approve Exceptions to Policies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Classification / Compensation Changes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Employees Directly Supervised

# Employees	Job Title

Employees Indirectly Supervised

# Employees	Job Title

SECTION 15..... WORK ENVIRONMENT / WORKING CONDITIONS / PHYSICAL REQUIREMENTS

Refer to ErgoFactor Job Analysis for this position for details.
<S:\Safety\Blankenheim Project\Operations\ Electrical and Instrumentation Technician.pdf>

SECTION 16..... ADDITIONAL COMMENTS

As this position is included in the annual medical respiratory evaluation program, facial hair, beards, sideburns, etc., which extend into the facepiece-to-face fit area are not permitted. Mustaches or neatly trimmed goatees must be sufficiently short so as not to interfere with the overall function of the respirator.

THIS JOB DESCRIPTION IS INTENDED TO IDENTIFY ESSENTIAL DUTIES AND ALSO ILLUSTRATES OTHER TYPES OF DUTIES THAT MAY BE ASSIGNED TO ITS INCUMBENTS. IT SHOULD NOT BE INTERPRETED AS DESCRIBING ALL OF THE DUTIES THAT WILL BE REQUIRED OF

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EMPLOYEES OR BE USED TO LIMIT THE NATURE AND EXTENT OF ASSIGNMENTS THAT AN INDIVIDUAL IS REQUIRED TO PERFORM.

Job descriptions are subject to revision at any time at the discretion of management..