

Job Description - Instrumentation and Controls Engineer

BCR Environmental Corporation is a solutions company transforming the way municipalities and industrial processors treat and manage biosolids, organic wastes, and other process streams. BCR patented technologies convert organic waste and other process streams into valuable products that may be further processed or used as end products. BCR is growing rapidly because we offer solutions that lower costs and reduce risk. BCR has a significant U.S. market position as a technology innovator and leader in the municipal biosolids sector. Our Whole Solutions eliminate odor, improve regulatory compliance, simplify biosolids and organics management, and convert waste streams into renewable resources. Further, BCR is rapidly expanding into industrial markets through resource recovery projects, environmental remediation, and difficult heat transfer and processing solutions.

BCR has an outstanding opportunity to add an Instrumentation and Controls Engineer to work within the company Engineering team. BCR maintains a family first culture and a fun working atmosphere, where each person contributes to a successful team. If you are looking for a place to immediately provide impact and grow in a high growth and sustainable industry - this is the place.

POSITION TYPE:

Full time, salaried.

SALARY RANGE:

\$100,000 - \$150,000 per year, commensurate with experience

POSITION POSTING:

Houston, TX

POSITION SUMMARY:

Design, develop, and verify integrated industrial product control systems compliant with all regulatory requirements for BCR's OEM wastewater treatment products and industrial products. Ensure successful integration into customer operational systems and facilities.

Applies knowledge and understanding of programming and troubleshooting plant controls processes and the equipment used to control those processes. Makes recommendations to improve the control of the processes or the processes themselves. Supports the maintenance of plant equipment to ensure a minimum of downtime.

ESSENTIAL FUNCTIONS

- Design control systems hardware and software for industrial equipment products consisting of water treatment, solids separation and handling, thermal drying, solids conveyance, and chemical injection. Interface with motors, field instrumentation, analyzers, and SCADA, satisfying all customers function needs and requirements.
 - Using a systems engineering framework, identify all "stakeholders" interacting with a product over its lifecycle and analyze needs and requirements
 - Work with process, mechanical, and electrical engineers, and customer's system engineers to understand and optimize control designs that meet customer requirements
 - Analyze customer process requirements and mechanical/electrical components to design and specify required software and control system components

- Design, implement, configure, test, and finalize product control designs ensuring complete and reliable performance throughout the operating life cycle; estimate product reliability values
- Collect and analyze product data to recommend and implement continuous improvements on BCR's product control designs while reducing cost and increasing performance
- Provide customer technical support
- Incorporate supplier, customer, and user inputs to continuously improve product control ease of use while enhancing customer value
- Analyze product installation and field test data (lessons learned) and incorporate those corrections/improvements into new product designs
- Work as a proactive team member to continuously improve all BCR's product controls and processes
- Perform risk and sensitivity analysis for product control designs and associated engineering changes
- Provide manufacturing support for all product control design issues as necessary
- Identifies commercial control system/software components and suppliers and recommends optimal component purchases or in-house development to meet BCR's product requirements
- Designs, implements, configures, tests and debugs software/control system components for BCR's products ensuring complete and reliable product operation
- Trains and instructs BCR's personnel on usage of system to track customers' operations including design of reports for use by BCR or customer
- Troubleshoot, modify, and test controls systems hardware and software in field settings with regards to site safety and reporting structure.
- Assists in process control loop tuning, calibration, improvement, and documentation in field settings.
- Trains clients in operation and troubleshooting of equipment with respect to controls.
- Configures parameters and troubleshoots motor drives.
- Isolates and corrects defective designs, valves, equipment, and contaminated systems, improperly working electronic units, and other malfunctions or inefficient processes.
- Pull, tag, and terminate wires, installs instruments, and bend stainless steel tubing as needed in field settings.
- Reads, understands, and comments on process schematics and mechanical, electrical blueprints.
- Design network topology for ethernet I/O devices, remote I/O panels, connectivity to customer networks, site manager devices, data storage and reporting devices.

MINIMUM REQUIREMENTS:

- BS Electrical or Controls Engineering degree preferred, others suitable with commensurate experience
- 8-10 years of experience working with PLC controls, logic circuits, hydraulic, pneumatic, and electrical equipment
- Excellent proficiency to read, write, and understand the English language.
- Climb stairs and ladders, comfortable working at heights.
- Knowledge of PLC (preferably Allen Bradley CompactLogix or ControlLogix).
- Knowledge of VFD (preferably Allen Bradley PowerFlex).
- Knowledge of Inductive Automation Ignition Platform
- Available for 24-hour on-call shifts, swing, and graveyard shifts, specifically in field settings during start-up or commissioning.
- Travel up to 20%, potential.
- >2 years of experience in working and interacting with customers and vendors.
- >2 years of experience in developing budgets, schedules, plans and forecasts.
- Skilled in MS Excel, MS Word, MS Project, and MS PowerPoint

- Skilled in AutoCAD Electrical Toolset for formation of electrical documentation, including wiring diagrams, single line diagrams, panel drawings, riser diagrams etc.

DESIRED SKILLS:

- Industrial control systems/software design and implementation including Digital I/O, Analog I/O, ladder logic, motion control, PID control, HMI, temperature, pressure and flow control, data collection and charting
- 3+ years experience developing control system solutions using commercial SCADA, PLC, and industrial I/O control components (e.g., Rockwell, Siemens, GE, Schneider, Mitsubishi, Watlow, Eurotherm)
- Experience with industrial network/communication technology including one or more of the following: OPC, Modbus, DeviceNet, HART, Profibus, Ethernet/IP, RS-485
- Object Oriented Software Design
- Relational database design and implementation
- Ergonomic and intuitive HMI (Human Machine Interface) design and implementation
- Experience in developing control systems for products that support industry environmental/safety standards and municipal government regulations
- Experience in speaking effectively before groups of customers or employees of organization.
- Experience defining problems, collecting data, establishing facts, and drawing valid conclusions.