

**Federal Reserve Bank of Boston
Job Description**

Job Code:

Job Title: Building Automation Systems (BAS) Technician

Job Summary:

Responsibilities for the position of BAS Technician will include but not be limited to the following: commissioning, diagnosis, and repair of environmental-controlled systems, utilizing knowledge of electronics, Direct Digital Control (DDC), airflow, hydronics, refrigeration theory, and control techniques. This position will also be responsible for programming, monitoring, installing, testing, re-commissioning, inspecting, repairing, and programming the BAS to include HVAC, building lighting, and other integrated systems. Other duties will include updating and maintaining the graphical web interface that enables the systems monitoring and diagnosis and applying knowledge of multiple communications protocols including BacNet and Tridium. This BAS Technician position will have the advanced understanding of all major energy management DDC systems, and the concepts and terminology for energy controls and units expressed in the form of heat, electricity, gas, and oil.

Principal Accountabilities:

Responsibilities will be programming the BAS databases and sequences of operations, monitoring, troubleshooting and refining the BAS to meet the equipment specifications in accordance with manufactures guidelines, resulting in optimized building equipment operation, energy utilization, indoor air equality and comfort. Modify equipment and programming graphics as needed and to schedule HVAC equipment to meet comfort demands.

To include performing end to end testing, troubleshooting, programming, downloading of programming, commissioning, and BAS repairs, as well as to be able to install and modify alarms and trend configurations. As well, responsibilities will include a high level data analytics and alarm reports function. This position will interpret control drawings, plans, and specifications to test, program and troubleshoot the BAS systems. This position will also perform preventative maintenance, site surveys, replacement, and modifications as needed and maintain a stock of DDC inventory and documents all related to the day to day BAS and HVAC activities.

To perform and assist contractors with inspection, installation, repair, and replacement of various components or systems and technical matters that effect efficient operation. Act as a subject matter expert and interface with the project coordinators, HVAC technicians and engineers on project controls plans.

This position will manage electrical and mechanical sub metering so that energy use can be identified by the end user and strategies can be implemented for energy saving programs. An accurate and detailed energy use via the BAS for specific equipment will be required so that accurate M&V can be accomplished for LEED and WELL Certification usage.

Knowledge, Skills, and Abilities:

Strong oral and written communications skills needed, including the ability to explain technical information to both technical and not technical people. The ability to read and understand controls drawings, electronic schematics, electrical diagrams, and construction drawings. In-depth knowledge of electric and mechanical systems and digital and pneumatic controls. Knowledge of programming DDC controllers with DOS-based line programming and digital management software including Windows based block programming. Knowledge of BacNet and JCI communications protocols and devices is required.

This position will detail the common energy units and calculations involving conversions from one form of energy to another. A basic knowledge of the different forms of energy such as kinetic and potential energy, along with knowledge of the simplified approach to the more advanced properties of energy including the First and Second Laws of Thermodynamics.

Knowledge in energy units and energy conversions, as well as energy unit conversions using the Railroad Track method. Knowledge in the heat content of common fuels, as well as calculating both purchase cost of fuels per common unit of energy, and point of use cost of typical fuels. Knowledge in energy accounting, energy use indices and energy cost indices are required and typical calculations and analyses will be completed. The knowledge of the concepts of economic analysis and common economic cost effectiveness measures are required.

A basic understanding of electric rates that deal with facility electric systems that emphasize the difference between energy and power in general, and energy and demand for electrical use billing. Knowledge of basic electrical terms will be required along with knowledge of common electrical system voltages, phases, and supply configurations, with knowledge of single phase and three phase power systems, as well as power calculations for both single phase and three phase systems.

Knowledge of energy economic analysis and economic decision making that will highlight simple payback periods, and the time value of money. Interest rates and discount rates understanding are needed so that present value and present worth can be identified so that economic decision criteria can be explored to include Net Present Value, Internal Rate of Return, Savings to Investment Ratio and Life Cycle Costing.

Basic knowledge of terminology and units for equipment end use categories so that the applications of the energy the property will buy can be determined. These equipment areas are defined as lighting, motors, HVAC, boilers and steam systems, and more.

Other Accountabilities:

Perform other HVAC duties as assigned.

Supervision:

This position is not required to directly supervise others.

Knowledge and Experience:

Associate's degree or equivalent from a two-year college or a technical school preferred. At least ten (10) years' experience in building automation control systems required. Direct experience in energy and

water reduction projects is also required, along with previous experience with ALERTON Controls, Niagara -AX Certified, Microsoft Visio, PLC or similar programming.

To apply, please send your resume to Kim.B.Pham@bos.frb.org.

All employees assigned to this position will be subject to FBI fingerprint/ criminal background and Patriot Act/ Office of Foreign Assets Control (OFAC) watch list checks at least once every five years.

The above statements are intended to describe the general nature and level of work required of this position. They are not intended to be an exhaustive list of all duties, responsibilities or skills associated with this position or the personnel so classified. While this job description is intended to be an accurate reflection of this position, management reserves the right to revise this or any job description at its discretion at any time.