SACRAMENTO CITY UNIFIED SCHOOL DISTRICT
Position Description

TITLE:	Building Automation and HVAC Systems Technician	**CLASSIFICATION:**	Classified Non-Management (SEIU/Operations Support)
SERIES:	None	**FLSA:**	Non-Exempt
JOB CLASS CODE:	1014	**WORK YEAR:**	12 Months
DEPARTMENT:	Facilities and Maintenance	**SALARY:**	Flat Rate Salary Schedule C
REPORTS TO:	Assigned Supervisor	**HR APPROVAL:** **HR REVISION:**	09-06-12

BASIC FUNCTION:

Act as a technical specialist and assume responsibility for the operation, maintenance, and future expansion of all hardware and software for large, complex, facility automation systems at all district campuses, administration, and support buildings. Building automation systems include Energy Management Systems (EMS); HVAC Direct Digital Controls (DDC) Systems, HVAC Pneumatic Controls Systems, Lighting Control Systems, and Irrigation Control Systems.

REPRESENTATIVE DUTIES: (Incumbents may perform any combination of the essential functions shown below [E]. This position description is not intended to be an exhaustive list of all duties, knowledge, or abilities associated with this classification, but is intended to accurately reflect the principle job elements.)

Assess, plan, budget, and manage daily operations and future expansion of the district automation systems; act as a technical advisor, trainer, and educator for district maintenance staff and end-users of EMS, HVAC DDC Systems, HVAC Pneumatic Controls Systems, and Lighting Control Systems. **E**

Troubleshoot system problems to provide continued operation; optimize HVAC DDC system performance through analysis of trend data; develop and implement standard specifications, programming standards, standard sequences of operation, and commissioning procedures. **E**

Develop and implement a plan for re-commissioning existing building systems to achieve optimum energy efficiency and re-commissioning, maintenance, and calibration of pneumatic control systems. **E**

Develop and implement documentation standards for hardware and cabling. **E**

Design, code, test, and debug device level, microprocessor-based digital controllers, as well as network supervisory controllers, workstation-level Human-Machine Interfaces (HMI), Graphical User Interfaces (GUI), Operator Work Stations (OWS), Internet Interfaces, and supervisory-level energy conservation strategies. **E**

Develop and maintain EMS input/output (I/O) and trend databases. **E**

Develop and implement documentation standards for software; maintain code, code archives, code documentation, and backups. **E**

Conduct large-scale, control network optimization to detect problems and enable critical performance of applications. **E**

Install and maintain network components in the organization-wide network; maintain network availability, performance, and security. **E**

Work with campus staff and district technicians, specialists, and analysts to implement and maintain needed connectivity; resolve network connectivity problems. **E**

Integrate Building Automation controls and EMS networks to HMI workstations. **E**

Act as the project manager for Facilities projects by contractors to expand the Campus Facility Automation System. **E**

Define scope of work and specifications; design and produce work drawings; develop budgets and schedules; review all hardware designs, submittals, and software programming to determine compliance with specifications. **E**

Act as the primary contact for consultants during project design, as well as the primary contact for contractors during project execution; inspect projects during installation, and act as the commissioning agent at project completion. **E**

Assume work duties normally completed by controls contractors including, but not limited to, repair, replacement, and emergency service of control devices, such as operator workstations, interface cards, controllers, actuators, temperature sensors, pressure sensors, and network interface devices. **E**

Work with school improvement initiatives that close student achievement gaps between racial, ethnic, and economic groups by working with all of the diverse communities. **E**

Operate a computer to input, output, update, and access a variety of records and information; generate records, reports, queries, lists and summaries; operate a variety of office machines and equipment. **E**

Perform related duties as assigned.

TRAINING, EDUCATION, AND EXPERIENCE:

Graduation from high school, and five-year HVAC and Refrigeration apprenticeship program. Five years of journey-level HVAC and Refrigeration experience preferred. Associate's Degree in computer science preferred.

OR

Associate's Degree in computer science or equivalent (or completion of a certificate program equivalent to an Associate's Degree in computer science), and two years in the classification of HVAC Technician with increasingly more responsible activities.

OR

Associate's Degree in computer science or equivalent (or completion of a certificate program equivalent to an Associate's Degree in computer science), and five years of experience directly related to job duties.

OR

Any combination of training and/or experience totaling eight years that is likely to have provided the required level of knowledge and abilities listed below.

LICENSES AND OTHER REQUIREMENTS:

Valid California driver's license; provide personal automobile and proof of insurance; employee entrance evaluation (lifting test). Valid EPA Universal Refrigeration Recycling certification required. Willingness to monitor projects on other than regular working hours.

KNOWLEDGE AND ABILITIES:

KNOWLEDGE OF:

Hardware, software, system architecture, network topology, operating systems, programming, telecommunications equipment, and protocols of large-scale and multi-campus building automation systems.

EMS I/O database structure, trend database structure, and trend data analysis techniques.

HMI, GUI, and Internet interfaces for building automation systems.

Line Programming, Block Programming, and Relay Ladder Logic.

Internal structure and function of Windows 98, Windows 2000, Windows NT 4.0 server, and Windows NT 4.0 workstation operating systems.

LonWorks (local area network), BACnet (building automation controls network), WinControl, Metasys, Internet-enabled systems, and other emerging controls system protocols and technologies.

Networking topology, protocols, and routing including Open Systems Interconnection (OSI) seven-layer model.

Third-party HMI's (CADgraphics, Wonderware, Intellution, etc.).

PC-based instrumentation and data logging devices.

Application and specification of stand-alone instrumentation, sensors, and transmitters.

Project management software, such as Microsoft Project.

Effective leadership and project management practices and procedures.

Industry standards for documentation of hardware and cabling.

HVAC mechanical systems and equipment, and energy conservation strategies for HVAC mechanical equipment.

HVAC DDC, Pneumatic HVAC, and Light Control Systems.

Health and safety regulations, standards, OSHA codes, Uniform Building Code and National Electrical Code.
Operation of a computer and related software.
Watt-hour meters and energy demand limiting strategies.
Commissioning procedures for HVAC mechanical equipment.
Computer Assisted Drawing (CAD)/reprographics (AutoCAD).
Building energy audits.
Policies and procedures for execution of controls contracts.
Major DDC systems on the market.

ABILITY TO:
Develop and diagnose control drawings and software; read and interpret HVAC drawings, control schematics, blueprints, and other construction documents and specifications.
Operate a computer and related office software, such as Word and Excel.
Perform emergency, planned, and preventive maintenance on all control related equipment.
Assume work duties normally completed by controls contractor.
Perform corrective measures to resolve urgent building operational issues.
Work with tools and instruments used for installing and troubleshooting controls systems, such as multimeters, amp meters, etc.
Provide training to other maintenance personnel for the proper ongoing scheduling, operation, and continuous improvement of district automation systems.
Assume diverse responsibilities to ensure quality work.
Utilize master specialty software specific to Johnson Controls, Allerton, KMC, or other vendors used by the district.
Address contentious technical issues in an expedient and professional manner.
Clearly communicate requirements of control systems.
Professionally prepare required written documents, such as letters, requests for proposals, and other job-related matters.
Communicate (written and oral) at a level to ensure successful job performance.
Interact with diverse constituency having varying levels of technical and practical expertise.
Prioritize in scheduling of completing job requirements.
Work with planners, maintenance personnel, consultants, contractors, and inspectors on multiple projects.
Work with school improvement initiatives that close student achievement gaps between racial, ethnic, and economic groups by working with all of the diverse communities.
Meet state and district standards of professional conduct as outlined in Board Policy.

WORKING CONDITIONS:

SAMPLE ENVIRONMENT:
Indoor, outdoor, and construction environment; drive a vehicle to conduct work; work in confined spaces.

SAMPLE PHYSICAL ABILITIES:
Ability to move freely at construction sites; climb ladders, ramps, scaffolding, and stairs; tolerate heights; maneuver through tight and cramped spaces, such as trenches, crawl spaces, electrical and mechanical vaults, etc.; walk and stand for extended periods of time; bend at the waist; stoop, crawl, or crouch; reach overhead, above the shoulders, and horizontally; hear and speak to exchange information; dexterity of hands and fingers to operate hand tools and specialized equipment.

SAMPLE HAZARDS:
Exposure to safety hazards routinely associated with construction sites and maintenance spaces.

APPROVALS:

Jess Serna, Chief Human Resources Officer Date

Jonathan P. Raymond, Superintendent Date