

San Diego Community College District

CLASSIFICATION DESCRIPTION

Title: HVAC Technician II
Unit: Maintenance & Operations

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Job Code: E1322
Original Date: 08/2022
Last Revision: 08/2022
Staff Type: Classified
FLSA status: Non-exempt
Salary Range: 34

DEFINITION

Under the direction of a District Facilities Supervisor-HVAC/Electric, plan, perform skilled work in the installation, repair, maintenance, and operation of the District's most complex and sophisticated heating, ventilation, and air conditioning equipment, and Energy Management System (EMS).

DISTINGUISHING CHARACTERISTICS

The HVAC Technician II is the experienced master journey level of the HVAC series and Building Automation Systems. The HVAC Technician II may act in a lead capacity, providing technical guidance and training to HVAC Mechanic and Maintenance Worker- HVAC/Electrical positions. Incumbents perform the most difficult and complex technical work, including but not limited to Turbocor compressors, Multistack and Daikin chillers with Magnetic bearing compressors with latest versions of chiller controls including but not limited to, Flexis, Microtech-II, Carel pCO2, 3G Monitor and service software tool for Turbocor. The HVAC Technician II is distinguished from the HVAC Technician either by higher technical skills and/or by Technician responsibilities.

EXAMPLE OF DUTIES

1. Provide work direction and guidance to the HVAC Technician, HVAC Mechanic and Maintenance Worker- HVAC/Electrical positions. Inspect subordinate's completed work, provide training of assigned workers, and assist in their performance appraisals. Provide technical resource concerning the Energy Management System.
2. Energy Management System/ALC controls.
3. Daily revision of all central plants and other chiller and boiler yards throughout the District; perform proper logic adjustments and parameter modifications as needed to keep central plants operating and staging properly for longer equipment longevity expectancy and optimal equipment operation and energy management.
4. Keep track of HVAC equipment scheduling. Assist HVAC Technician and Mechanics to implement schedule changes per District needs and requirements.
5. Provide technical support to HVAC Technician and Mechanics for ALC's complicated diagnostics and repair when necessary.
6. Maintain liaison with ALC controls vendors. Negotiate and coordinate any system's repairs and upgrades as needed.
7. Keep track of monitoring, development, and reporting of energy management data for all district utility costs. Ensure that HVAC Technicians and the qualified mechanics are trained to assist on this data process. Make recommendations for the implementation of a District's energy management program.
8. Assist EMS Contractors, (control engineers and highly-skilled control technicians), on design and recommissioning of Automated Logic Controls, providing the proper sequence of operation for better chiller and boiler plants operation and for optimal energy management of all central plants. Also assist during

- equipment replacement and central plant upgrades to perform the interfacing of the new equipment with the latest technology controls, to the existing ALC control system in the District.
9. Assist mechanical engineers during central plants and other buildings HVAC systems upgrade, main equipment replacement or add-ons. Research and choose the appropriate and right capacity equipment as per existing equipment and site needs. Design and implement new staging strategies for the new equipment to operate properly and efficiently with the existing system.
 10. Provide work direction to HVAC team, Technicians and Mechanics. Serve as technical resource for complicated diagnostics and repairs for the HVAC equipment and related EMS systems.
 11. Provide training to HVAC Technicians on servicing, maintaining, and operating the central plants, including all chillers, boiler cooling towers and sophisticated controls including the 3G service/monitoring software tool for Turbocor interfacing, Flexis, Carel, Microtech-II and others. Work together with HVAC Technicians until they are capable to perform the duties with minimum supervision.
 12. Encourage HVAC Mechanics to learn how to service and operate the above mentioned sophisticated equipment and control systems with the assistance of the HVAC Technicians, provide training and technical support to interested mechanics.
 13. Assist with parts location for chillers and boilers in central plants. Train the HVAC Technician to utilize the different manufacturer's systems to locate part numbers, request quotes, and be able to keep the rights and access to their websites to obtain technical support, and purchase parts and equipment from manufacturers/vendors by maintaining liaison and business relationship with them. Provide for and distribute proper supplies and equipment to project teams.
 14. Assist on scheduling and conduct of preventive maintenance utilizing the computerized service control and tracking system, Megamation App, of the HVAC system.
 15. Maintain onsite logs of service performed to all equipment and computerized records on the Megamation System as the system allows.
 16. Review plans and specifications for new and remodeled buildings. Estimate time, material and cost of repairs and maintain proper records.
 17. Maintain liaison with District staff and promote energy consumption awareness with the district.
 18. Develop heating and air conditioning specifications and diagrams as necessary. Participate in the design of new equipment/system installations; estimate labor and material costs, and inspect work of HVAC contractors.
 19. Operate a centrally-operated, computerized Energy Management System, including terminal, printers, unitary controllers, terminal modules, digital energy monitors, pneumatic output interfaces, and variable frequency drives; modify parameters through software to control heating and air conditioning equipment. Operate a wide range of complex testing devices to late technical problems with HVAC equipment and the Energy Management System, including circuit cards and computer software.
 20. Troubleshoot live 460 volt control circuits on large chiller and air conditioning systems that are interfaced with the District's Energy Management System. Install energy management hardware to control HVAC systems and equipment.
 21. Recover refrigerants when refrigeration systems are open for repairs. Account for refrigerant usage.

22. Replace or repair compressors, motors, fans, valves, thermometer, and belts. Cut, thread, and weld pipes; braze and silver solder copper tubing. Install electrical conduits and perform general electrical repairs pertaining to HVAC equipment. Install and adjust switches, gauges, pneumatic thermostats, valves, controllers, and other parts as needed.
23. Monitor temperatures, pressures, and air conditioning systems operation with the District's Energy Management System. Lubricate, clean, and adjust HVAC equipment. Change air filters, clean strainers, and flush boilers, descale cooling tower tubing.
24. Maintain logs and records on equipment.
25. Perform related duties as assigned.

DESIRABLE QUALIFICATIONS

Knowledge:

3G Monitor and service software tool for Turbocor.
ALC Energy Management System control
AquaSnap Carrier Chillers operation and service controls.
Basic training skills.
Combustion analyzer for PK and other high efficiency, Low NO_x, Forced Air Boilers.
Complex, centrally-operated, computerized energy management systems and equipment.
Computer programs related to HVAC and Energy Management systems.
Daikin Microtech-II control center and Carel pCO₂ controls for interfacing with Turbocor compressors.
Environmental regulations, Montreal Protocol Section 40 CFR Part 82, Subpart F.
EPA requirements, Title 24 (State of California), and LEED Certified Buildings and expansion of EMS.
File maintenance and reporting.
Flexis Chillers/Turbocor interfacing and control.
Health and safety regulations.
High resistance winding insulation tester.
High voltage circuits and components.
Interface software for VRV split HVAC system.
Internal combustion engines.
KILTECH Chillers/Turbocor interfacing and control
Knowledge and familiarity with all the latest technology controls utilized within the district for operation control and interfacing with all chillers and boilers.
Knowledge and familiarity with all the latest technological electric tools and software needed to operate and service the existing equipment with the district.
Mechanical codes pertaining to HVAC equipment.
Niagra/Allerton Energy Management.
Operation of modern testing devices.
Operation of vehicles, equipment, and machinery related to area of specialty.
Oral, reading, and written communication skills.
Patterson-Kelley PK boilers operation control.
Proper operation of heating, ventilation, and air conditioning equipment and energy management systems.
Proper repair procedures and safety practices.
Record-keeping techniques.
Refrigerant recovery and transition.

Refrigeration, pipefitting, sheet metal, water treatment, and energy management.
Repair and maintenance of HVAC equipment and machinery.
Safe work practices.
SDGE low voltage safety training.
State guidelines for the deferred maintenance schedule of equipment.
Technical aspects of field of specialty.
Time management, scheduling, and coordination techniques.
Tools, methods, materials, and terminology used in maintenance and repair of heating, ventilation, and air conditioning equipment.
York Optiview control center.

Skills and Abilities:

Establish and maintain effective working relationships with others.
Estimate scope and cost of work assignments and select necessary tools and equipment.
HVAC and electrical equipment and power systems.
Maintain records.
Maintain and repair heating, refrigeration, and ventilation equipment.
Maintain, test, and repair HVAC, refrigeration, and electrical equipment.
Operate vehicles, equipment, machinery, and tools as appropriate in area of specialty.
Prepare and maintain records.
Provide work direction and guidance.
Schedule and coordinate the work of others.
Troubleshoot high voltage circuits and components.
Troubleshoot problems and adopt an effective course of action.
Understand and follow oral and written directions.
Utilize required tools and equipment skillfully and safely.
Work from sketches, drawings, and blueprints.
Work independently with little direction.
Work safely.

Training and Experience:

Any combination of training and experience equivalent to: seven years in the trade, including three years of journey level experience and leadership experience in the operation of complex, centrally-operated, computerized energy management systems and equipment.

License:

Valid California driver's license.
As required by Clean Air Act, Refrigeration transition and recovery Type II Certification.

WORKING CONDITIONS

Physical Requirements:

Category I, may require considerable physical exertion, stamina, and flexibility.

Environment:

May include less than desirable extremes, including hazardous installation and service areas.

Work Day:

Persons in this class may be required to accommodate a flexible work schedule, including night work, call back, and weekends as necessary.