

HVAC/REFRIGERATION SPECIALIST-ADVANCED

Position Summary

Under general supervision of the Power Plant Superintendent and working with the Steamfitter and other systems expert/s at the Wisconsin Veterans Home at King (WVHK), this expert on heating-ventilation-air conditioning and refrigeration (HVAC/R) systems maintains, troubleshoots and repairs pneumatic, electric, and electronic HVAC/R systems throughout the WVHK campus. The HVAC/Refrigeration Specialist-Advanced works on equipment and systems such as air handling units, centrifugal chillers, an evaporative cooling tower, refrigeration units, hydronic heating systems, unit heaters, air compressors, retherm units, building automation systems, direct digital controls (DDCs), and ductless split AC systems.

Time% Goals and Worker Activities

50% A. Troubleshooting and Repairing HVAC/R Systems

- A1. Identify and repair problems with air handler units, including control valves, heating/cooling coils, computer controls and/or programs, and pneumatic and electronic actuators.
- A2. Identify and correct problems with air circulation in buildings, including taking air flow readings to ensure that an adequate supply of fresh air is being distributed and the correct amount of air is being exhausted from each area per building plans and to maintain correct humidity and air quality.
- A3. Identify and correct any problems with centrifugal chillers and related controls, including computer controls, internal controls for each individual chiller, pumps, and piping systems for the buildings' closed loop chilled water and cooling tower condenser water systems including documentation and chemical controls.
- A4. Identify and correct problems with the hydronic heating systems, including computer controls and/or computer programs, pneumatic or electric control valves, problems with pumps such as repairing leaks, re-packing valves, replacing seals, replacing motors and/or bearings.
- A5. Identify and repair problems with refrigeration units, including replacing compressors, condensers, evaporators, thermostatic expansion valves (TXVs) and fan motors, manually defrosting coils, repairing refrigerant leaks, keeping accurate record of refrigerant added, changing oil in compressors, and diagnosing and repairing minor electrical problems.
- A6. Identify and repair problems on steam distribution system, such as replacing or rebuilding steam pressure-reducing valves, steam traps, expansion joints, valve packing, flange gaskets, and condensate receiver/pumps.

20% B. Preventative Maintenance on HVAC/R Systems

- B1. Change filters, grease bearings, change belts, adjust dampers, and inspect control valves on air handling units.
- B2. Perform preventative maintenance on centrifugal chillers, related pumps, cooling tower fans, and controls.
- B3. Change oil/filters and grease bearings.
- B4. Maintain hydronic heating systems, including greasing pump bearings, testing water pH, checking operation of control valves, and monitoring temperatures.
- B5. Maintain refrigeration systems including manually defrosting coils, monitoring temperatures and pressures on compressor units, and cleaning condenser coils.

- B6. Maintain on-unit heaters and air compressors including changing oil and filters, cleaning heat transfer surfaces, and greasing bearings.

15% C. Administrative Functions for HVAC/R-related Pneumatic, Electric, and Electronic Systems

- C1. Monitor the refrigerant charge on the chillers so leaks can be identified and corrected.
- C2. Maintain accurate records of refrigerant added and any maintenance done.
- C3. Obtain quotes from vendors for replacement parts and complete purchase requisitions.

15% D. Performance of Other Duties as Assigned

Knowledge, Skills and Abilities

1. Knowledge of the operating principles of HVAC/R systems, heat exchangers, centrifugal chillers, hydronic heating systems, unit heaters, air handling units, ductless split AC systems, and air compressors
2. Knowledge of equipment, tools, techniques, and terminology used in operation, maintenance, and repair of HVAC/R systems and related equipment
3. Knowledge of the principles and practices of safe handling of refrigerants, refrigerant oils, and solvents such as coil cleaners
4. Knowledge of safety issues and dangers involved in working with high-pressure steam, condensate and compressed air
5. Ability to follow safety policies and practices such as confined space entry, lock out/tag out
6. Skill in verbal and written communication
7. Ability to read instructions and safety manuals and to follow such written directions
8. Ability to read plans and schematics
9. Ability to identify hazards and react to changing conditions
10. Knowledge of regulations, standards and practices related to patient rights and privacy, including the Health Insurance Portability and Accountability Act (HIPAA)
11. Ability to troubleshoot HVAC/R building automation system (BAS) or use BAS to adjust building or room temps as necessary
12. Ability to implement Enhanced Indoor Air Quality (IAQ) solutions, including advanced filtration, High Efficiency Particulate Air (HEPA), ultraviolet (UV-C) purification, humidity control, and real-time IAQ monitoring to maintain healthy environments
13. Skill in computer use, including Microsoft Office Suite or similar applications, building management systems, and work order systems
14. Ability to work as a member of a team
15. Ability to organize and prioritize work assignments

Physical Demands

Job duties involve climbing and working from ladders and/or scaffolding; working in tight, poorly lit and/or poorly ventilated spaces containing equipment, controls, wiring and piping; performing heavy work, occasionally exerting more than 100 pounds of force to move and/or install/remove equipment; and using personal protective equipment (PPE). Safety-toe shoes must be worn at all times on the job.

Environmental Conditions

WVHK is a multi-building, multi-acre long-term care, skilled nursing facility with a network of underground tunnels which connect some buildings and access to certain work areas. Work is performed in common areas and occupied individual rooms, around elderly, disabled, or mental-health compromised members.

Special Requirements

- United States' Environmental Protection Agency (EPA) Section 608 (Universal Refrigerant Handling) Technician certification
- Meet the standards for eligibility to operate a State of Wisconsin fleet vehicle